ILC 08 Final Plenary Summary

CFS - CONVENTIONAL FACILITIES AND SITING GROUP

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CFS Parallel Session Topics

- Process Cooling Water and HVAC Review
- Klystron Cluster Design
- CLIC/ILC and XFEL/ILC Collaboration Planning
- Minimum Machine Design
- Alternate Site and Tunnel Configuration

Process Cooling Water and HVAC Review

Session Objective: ***Select one of the alternatives presented as the baseline to be included in the Technical Design Report (pending Klystron Cluster R&D results).***

- *Alternative Process Water Configurations were Presented by FNAL and KEK*
- *Talks were also Presented for ILC HVAC Design, CLIC Process Water and HVAC Design and Life Safety Aspects of Ventilation Systems Design*
- *An Alternative was Selected by M. Ross as a Back-up Design to the Klystron Cluster Alternative*
- *This will Conclude the Current Value Engineering Exercise for the ILC Process Cooling Water System*

RF Water Delta T		25C DT (45F DT)									40C DT (72F DT)							Kly Cluster-Aug 2008
Impact / Issues (by others)		Scheme 5			Scheme 6			Scheme 7			Scheme 5			Scheme 6			Scheme 7	
Cost to be added (could be by others?)																		
Major IMPACT/ Issues?																		
SS=Sch 10 304 Stainless in Tunnel only ; CPVC=Sch 80 CPVC plastic pipe; CS= Std Sch (40) Carbon Steel		SS	CPVC	CS	SS	CPVC	CS	SS	CPVC	CS	SS	CPVC	CS	SS	CPVC	CS	SS	SS
Overall Water Delta T	°DC	16.7			16.5			18.1			20.3			19.6			22.4	22.1
	°DF	30.1			29.7			32.6			36.5			35.2			40.4	39.8
"First-Cost" Savings in % - Process/Air Treatment WBS 1.7.3. & 1.7.5		28%	30%	31%	23%	25%	26%	30%	32%	33%	31%	33%	32%	26%	28%	27%	35%	-47%
RF Loads and Circulators reduced flow																		
RF Modltrs and Plse Transfm-flow/temp																		
Watercooled wvgde cooling design (by others)																		
Kly Clstr's RF Pipe Cooling by others																		
High Space Temperature ok?		~45°C (113°F)									~45°C (113°F)							
Equipment Insulations??																		
50% reduction in air heat load possible?																		
Finalize HLRF Heat Load table? Collector issue?																		
Rack chiller impact ok? / Rework rack arrngmt??																		
Confirm reduced Heat load from racks?																		
Cost for increased maintenance due high space																		
Cost of portable cooling for maintenance																		
Pump Recirc loop at Collector~ $2M??																		
Pump Recircloop (modul/P.Transfmr)~ $2M ??																		
Electrical Reduction		~ (- 2.3 MW)									~ (- 2.3 MW)							
Operational cost reduction		~ (- ??)									~ (- ??)							
Electrical addition					~ + 3 MW			~ + 1 MW						~ + 3 MW			~ + 1 MW	??
Operational cost addition					+ ??			+ ??						+ ??			+ ??	
~~Pipe Press & Temp limit issues~~																		
"Clean Water" Compatibility Issue																		

Klystron Cluster Design

Session Objective: ***Establish an understanding within the technical groups of the CFS design and cost savings associated with this Klystron Cluster alternative.***

- ***CFS Analysis of Klystron Cluster Alternative was Presented***
- ***Discussion with Main Linac Area System and Technical System Representatives Followed***
- ***Agreement was Reached that CFS Analysis was Adequate and Acceptable as Provided***

CLIC/ILC Collaboration Planning

Session Objective: Develop plans of action with milestones for the ILC/CLIC collaboration efforts in the coming year.

- ***Several Items were Identified for 2009***
  - *3D Modeling for ILC Using CATIA Software*
  - *Collaboration on Alternate Tunnel Configuration*
  - *Drawings for ILC RF Cluster Design*
  - *Assist in Shallow Site Studies*
  - *Study for ILC Installation Methods*
  - *Continuing Collaboration on Process Cooling and HVAC Design*
  - *Development of a Common Document Describing Underground Safety Considerations for ILC and CLIC*
- ***Specific Resources will be Identified in the Weekly CFS Video/Webex Meetings***

XFEL/ILC Collaboration Planning

Session Objective: Develop plans of action with milestones for the ILC/XFEL collaboration efforts in the coming year.

- ***Discussion Centered on Upcoming CFS Visit to DESY in December, 2008***
- ***Agenda Items Identified:***
  - ***Process Water Systems***
  - ***Electrical Requirements***
  - ***HVAC Design***
  - ***Civil Construction Process***
  - ***Criteria Identification and Configuration Control***
  - ***Safety Issues***
  - ***EDMS***
- ***6 ILC CFS Members and 1 ILC Project Manager will Participate***

Minimum Machine Design

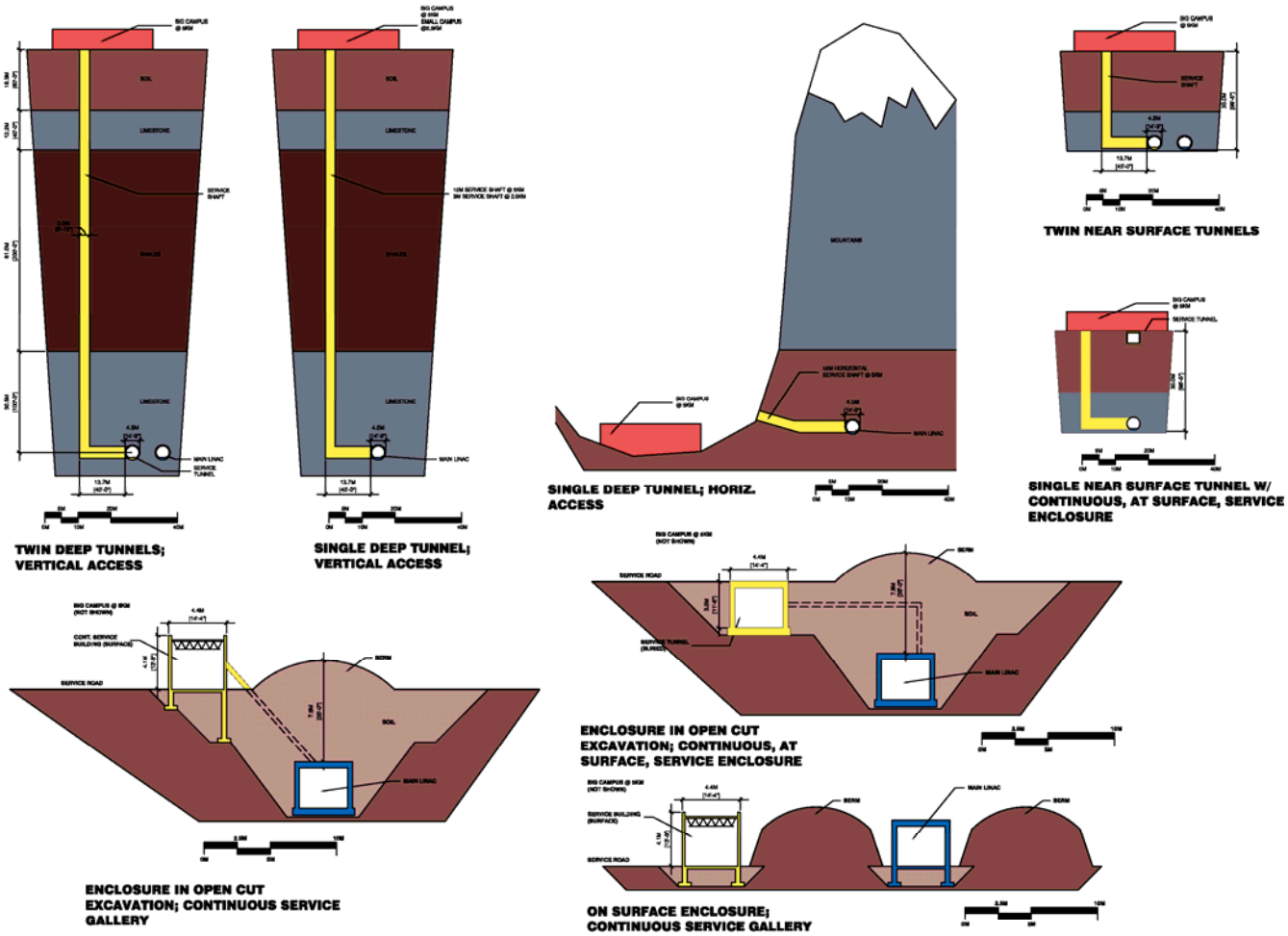
Session Objective: Identify specific tasks and milestones for CFS evaluation of the Minimum Machine Design concept and how it might be included in the TDP

- *CFS has Re-established the Area System Points-of-Contact*
- *3D Software will be Employed to Facilitate the Analysis of the New Machine Configuration and Alternatives*
- *Cost Analysis for CFS Impact of Various Alternative Configurations will also Need to be Completed*

Alternate Site and Tunnel Configuration

Session Objective: Develop the CFS plan to evaluate all tunnel configuration alternatives with specific emphasis on what can be completed by the AAP Review in April, 2009 and through 2010.

- ***Work Completed to Date was Presented***
- ***The Entire CFS Group will Contribute to this Effort as well as Collaboration Partners***
- ***Substantial Progress is Anticipated by the AAP Review in April, 2009***
- ***Work will be Completed in 2009***


TWIN DEEP TUNNELS; VERTICAL ACCESS
SINGLE DEEP TUNNEL; VERTICAL ACCESS
SINGLE DEEP TUNNEL; HORIZ. ACCESS
TWIN NEAR SURFACE TUNNELS
SINGLE NEAR SURFACE TUNNEL W/ CONTINUOUS, AT SURFACE, SERVICE ENCLOSURE
ENCLOSURE IN OPEN CUT EXCAVATION; CONTINUOUS SERVICE GALLERY
ENCLOSURE IN OPEN CUT EXCAVATION; CONTINUOUS, AT SURFACE, SERVICE ENCLOSURE
ON SURFACE ENCLOSURE; CONTINUOUS SERVICE GALLERY