



CF&S

Main Linac KOM
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Global Issues

- **Maintain and Strengthen the “Point of Contact” for the Transfer of Information – Improve Communications**
 - We will not only need to know the Criteria, but also be able to substantiate that all of your criteria has been provided to us, and the CF&S design solution is appropriate.
- **CF&S will Communicate What Information is Needed Early for Critical Path / Long Lead Items**
 - Information on Radiation, waste streams, transportation of components through neighborhoods are some of the items needed for the Environmental Impact Statement (EIS)
- **We Need to Identify the Gaps, if any, Between What is Included in the CFS RDR Cost Estimate and What will be Included and Eventual EDR Cost Estimate**



Examples of Needed Data

- **A Beam Lattice is required to:**
 - Establish longitudinal spacing for penetrations, beam elements, etc.
 - Vertical Alignment; Establish a generic vertical Geoid
 - Impacts of Horizontal Dogleg, if Required
 - Angle between Main Linac and BDS for “fine tuning” surface features
- **Establish limits for Vibration / Stability**
 - Ground Stability
 - Equipment Induced Vibrations



Tunnel Alignment

- **There will be contractual tolerances established for the alignment and grade of the tunnel surfaces.**
 - **Material Codes Establish Standard Tolerances for Flatness, Level and Conformance to Specified Grade.**
 - **The Accelerator Designers will need to identify where tolerances are critical.**
- **Underground working conditions makes maintaining tight tolerances costly.**



Tunnel Alignment

- **Alignment Requirements**
 - **Tunnel Movement will be Highly Dependent on the Geology of the Chosen Site**
 - **Site Geology is Unlikely to be Modified**
 - **Once Fully Established, Final Adjustment for the Cryomodules Should be Incorporated in the Support Structure**
 - **ILC Survey and Alignment Group Must be a Partner in the Discussions Regarding Initial and Final Accelerator Alignment**



Option Studies Participation

- **Near Surface Study**
 - **Component Configuration**
- **Single Tunnel Study**
 - **Life Safety Study**
 - **Fire Load**
 - **Hazards**
- **Value Management Workshop (Power/Cooling)**
 - **Nov. 27-29 @ Fermilab**
 - **Power and Cooling Criteria with Klystrons, Waveguides, Modulators, Racks and Charging Supplies**



- **Where Options or Alternative Design Solutions are Being Considered, the Value Engineering Process can be Used to Facilitate the Decision Process**
- **When Employing the Value Engineering Process all Aspects of the Various Alternatives must be Considered in Order to Determine the Best “Value”**
- **“Value” does not Necessarily Equate to “Cost”**



VM

Charge:

- Conduct a workshop that will comprehensively examine the power and cooling system requirements and design solutions leading to ideas that will conserve the total energy needs of the project. Concentrating on the largest power user, the Main Linac, examine all aspects of the technical equipment and conventional equipment as it relates to power and cooling. The Value Management format will follow the Corp. of Engineers format.