



ILC CFS AND GLOBAL SYSTEMS MEETING

CONVENTIONAL FACILITIES AND SITING GROUP

GENERAL STATUS UPDATE

V. Kuchler



Overview

- *Preparation for the Damping Ring TBR*
- *First Impressions of the KEK Tunnel Configuration Study*
- *International Large Detector (ILD) Collaboration Meeting*
- *Update on Interaction Region Consulting Activities*



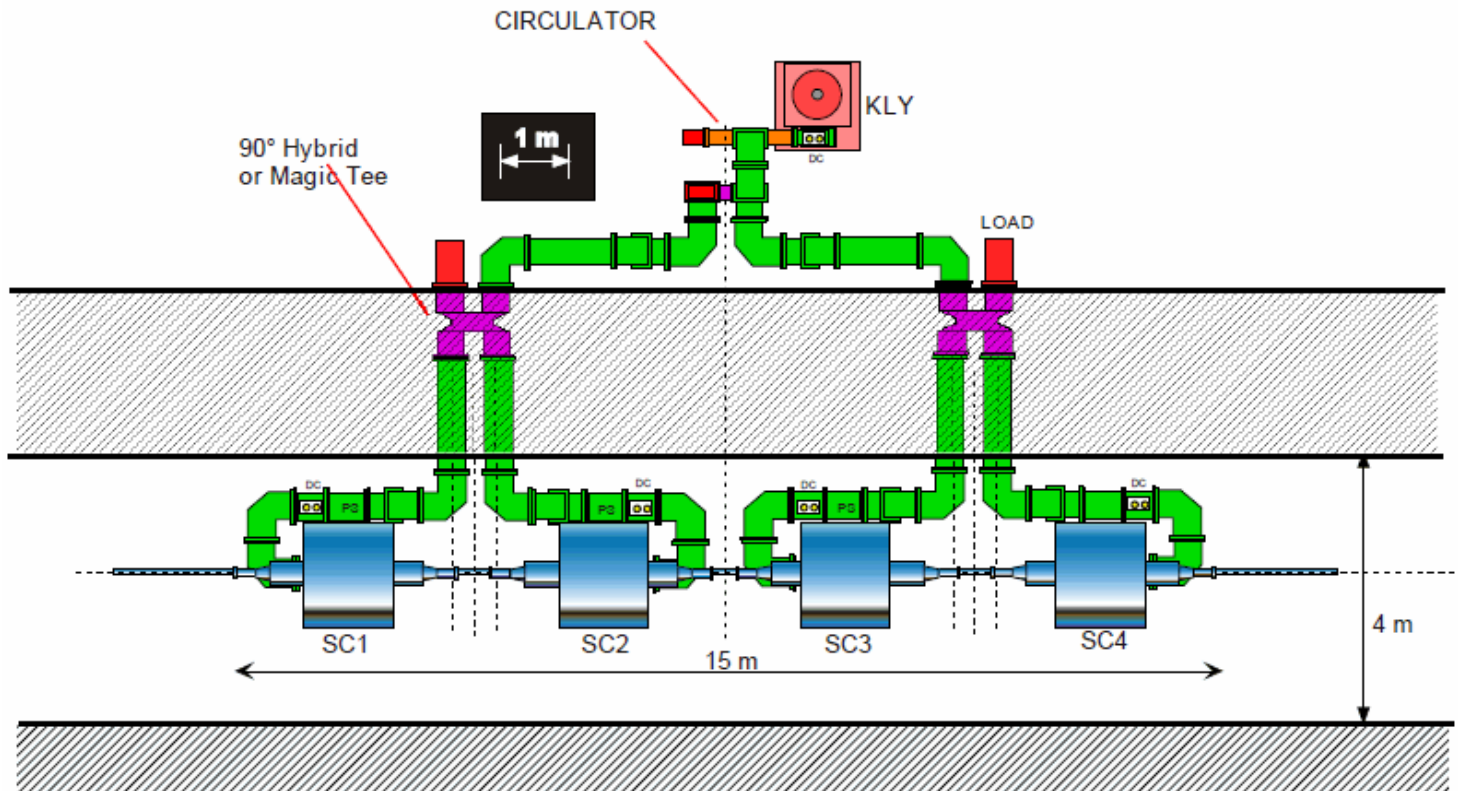
Preparation for the DR TBR

- *A One-Day Mini-Workshop for Damping Ring Criteria was Held on June 2 at Fermilab*
- *M. Palmer Attended in Person and S. Guiducci Attended via Webex for Most of the Morning Session*
- *E. Paterson Attended via Webex for the Afternoon Session*
- *Discussion Focused on Three Major Areas*
 - *Damping Ring Layout and Dimensioning*
 - *Mechanical Criteria and Equipment*
 - *Electrical Loads and Equipment*

Preparation for the DR TBR cont.

- **Several Fundamental Conditions were Established**
 - **In the RF Straight Section**
 - **RF Equipment will Take Up the Majority of Floor Space**
 - **Personnel will NOT Occupy the Equipment Cavern During Beam On Conditions**
 - **M. Palmer will Generate an Equipment Layout for the Equipment Cavern**
 - **There will be a Need for a Thermal Insulation Barrier Between the Equipment Alcove and the Beam Enclosure in the RF Straight Section – This Could Also Serve as the Needed Radiation Shielding as well (Equivalent of 1/4" Steel + 3/4" Lead)**
 - **Beamline Spacing**
 - **Centerline to Centerline Vertical Spacing Between Adjacent Damping Rings will be 1.3 m**
 - **Initial Positron Beamline will be 0.9 m Above the Finished Floor**
 - **Tunnel Diameter May be Reduced to 5.0 or 5.5 m dia.**

FOOTPRINT VIEW
OF ONE RF STATION



R. Boni - INFN_LNF

Preparation for the DR TBR cont.

- **Several Fundamental Conditions were Established**
 - **Temperature Requirements**
 - **Temperature in Operating Beam Tunnel 77° – 87° F Range with a Stability of +/- 0.18° F**
 - **Wiggler Sections will Need to be Enclosed for Temperature and Alignment Stability Including Cooling of Support Stands**
 - **Magnet Power Supplies**
 - **There will be 100 – 150 Power Supplies in Each 900 m Arc**
 - **Power Supplies will be Connected to a Water Cooled Buss**
 - **Injection/Extraction Straight**
 - **Two Smaller Alcoves will be Needed**
 - **Alcove will Likely be ~10 m Wide with Beamline Approximately in the Middle of the Enclosure with Aisles on Both Sides**
 - **Two Shafts are Still Required – One Large Diameter, One Smaller Diameter – Both Positioned on the Inside of the Damping Ring**
 - **Several Adjustments to the Mech/Elec Criteria Spreadsheet were also Established**



Preparation for the DR TBR cont.

- ***M. Palmer will Provide an Equipment Layout for the RF Alcove***
- ***Emil will Make the Necessary Adjustments to the Mech/Elec Spreadsheets and Exchange Them for Review with M. Palmer and S. Guiducci***
- ***CFS will Prepare Updated Drawings and Add to Updated Criteria Sheets for a Final Review by CFS and Damping Ring Groups Prior to the TBR at Frascati in July***
- ***Once Verified at the Frascati Meeting, the CFS Criteria will be Posted on the EDMS System***



KEK Tunnel Configuration Study

- **Consultant Study was Completed in JFY10**
- **A. Enomoto Provided a Presentation to KEK at the End of May, 2011**
- **During the ILD Collaboration Meeting in Paris, CFS Met with A. Yamamoto to Review Atsushi's KEK Presentation**
- **Atsushi will Provide a Similar Presentation to the CFS Group on June 14**
- **Some Questions Still Need to be Addressed**
 - **Per Meter Tunnel Unit Costs Appear to Be Provided but it is Unclear How Underground Cavern and Alcove Costs are Included**
 - **Also how are Horizontal and Vertical Access Enclosures Included**

ILD Collaboration Meeting

- **CFS, MDI, ILD and SiD Groups were Represented**
- **5/22 (Sunday) was an MDI/Detector Meeting**
- **5/23-5/25 was the ILD Collaboration Meeting**
 - **Good Presentations and Discussion of CFS/Detector Interface**
 - **Re-Established the Need for Platforms for Both Detectors**
 - **Also Affirmed that Both Detectors are Self-Shielding and Therefore No Shielding Wall is Required**
 - **A Clear Zone of 15 m from Beam Centerline is Required for Magnetic Field Impact**
 - **Y. Sugimoto Provided a Presentation on the Asian Mountain Site Interaction Region and Horizontal Access issues**
- **T. Lackowski and J. Osborne Provided Presentations for the IR Regions in the Americas and European Regions Respectively**



Progress with IR Region Consulting

- *ARUP UK Representatives Attended the ILD Collaboration Meeting and a Full Afternoon was Devoted to Presentations and Discussion with the CFS, ILD and SiD Attendees*
- *Two of Four Proposals will be Funded at this Time*
 - **Task One – Detector Platform Design**
 - *Americas Region will Fund This Task*
 - *Task will Include Concrete Platform Design and a Review of Options for Platform Movement*
 - *Criteria for Deflection and Positioning, Maximum Acceleration Forces and Movement Cycles will be Included in the Analysis*
 - **Task Two – Rock Behavior Model/Study**
 - *European Region will Fund This Task*
 - *Model will be Based on CERN Geology and IR Region Design*
 - *At a Later Date, a Similar Model can be Pursued for the Americas and Asian Regional Conditions*