

SHMS Engineering Status

Hall C User meeting

Jan. 26, 2007

Overview

- Superconducting cable
- Bender Magnet
- Q1
- Q2/Q3
- Dipole
- Budgetary Cost Estimates

Rutherford cable for Bender & Q1

- 4 spools totaling 7 Km of keystone cable have been sent to New England Wire Technology to be flattened.
- Process started last Monday.
- Test reshaping indicates the tolerances will be met. Rest of conductor is slated to be flattened next week.
- Short sample pieces from each roll will be measured to determine if any degradation occurred.

SHMS Bender

- Thermal FEA model of conductor stack has been developed with orthotropic properties of cable and insulation. The results of the beam heating R&D will be loaded into this model.
- Cryostat design has begun. Very Tight!
- Force Plate analysis is on going. Aim is to reduce stray fields along beam line while providing necessary coil support.
- Received preliminary results from NSCL's work on the Bender design.

Q1

- Paul met with Scientific Magnetics at the beginning of this week.
- Expect to receive cad files of their Q1 test coil winding setup early next week.

Q2/Q3

- FEA work has begun on the beamline notch in the yoke for Q2.
- Design work on magnet components is ongoing.
- End turn optimization is starting.
- Initial reports from contract vendor on their R&D work have been received.

Dipole

- Force Collar FEA work is converging.
- 3D CAD design is progressing.
- End turn coil geometry is being optimizing for ease of manufacturing and coil forces.
- Contract Vendor is working on their R&D project.

Costing

- Designers are developing preliminary detail drawings and specifications for magnet components.
- Budgetary quotes have been received from a few potential vendors.
- PSU Vendors have not yet identify a manufacturer for the motorized high current polarity switch. Manual switches are being proposed at this time.

Conclusion

- Work by JLab and outside contract is ongoing.