Fermilab High Field Magnet Program Design Review

April 28 – 29, 2016

Introduction

Fermilab’s High Field Magnet (HFM) program (also a part of the National GARD program) is approaching the mature design phase of the 15 T Nb3Sn dipole model. The program is exploring the limits of Nb3Sn magnet technology with a possible target application in future proton-proton colliders. This effort is in synchronicity with Recommendation 24 of the P5 Committee and the HEPAP Accelerator R&D Subpanel Report.

The review will be held at Fermilab on April 28 and 29, 2016.

Charge to the Review Committee

The panel is asked to conduct a review of the engineering design of the 60-mm 15T Nb3Sn dipole model. The purpose of this review is to evaluate the status of the design and manufacturing plans for the magnet.

The review panel is asked to address the following questions:

1. Does the design meet the program goals? Is the design concept sound?
2. Do various studies confirm that the magnet model can reach the target field of 15T ? Are the analyses at an adequate level of completion, including field, stress, and quench?
3. Is the cable selection appropriate for this application?
4. Is the engineering design appropriately mature to proceed to model construction? Does it account for manufacturability and test issues?
5. Is the planned timeline realistic? Is planned staffing adequate to meet the goal?
6. Have key risks been identified and adequately addressed?

The review panel is asked to present preliminary findings, comments and recommendations at a closeout meeting with TD management on the second day of the review. A written report would be appreciated within two weeks of the review.