TD/BD Coordination Meeting

Wednesday, 1 October 2003 10:00 AM
TD/Headquarters Conference Room, Industrial Center Building

Present: Paul Czarapata, Roger Dixon, David Harding (scribe), Mike Lamm, Dave McGinnis, Victor Yarba, John Zweibohmer

Agenda

Pending issues from last meeting:
- Electron cooling vacuum - Is everyone still happy?
- Tevatron RF structure work status
- Electrostatic separator review implications

Is there any movement of jobs from one category to another?
What are BD priorities for FY04?

Jobs continuing from FY03
- Build Booster extraction septum magnets
- Build spare IQC/IQD magnets
- Build spare Accumulator trim dipoles (NDA)
- Rebuild two Tevatron D spools
- Support Recycler flying wire development
- Measure Booster gradient magnets (AC)
- Study Linac PA tubes
- Study Tev RF structures
- Study Tevatron magnets
- Study electrostatic separator issues

Jobs just starting, or to start after shutdown
- Build four spare ILA magnets (FMI/Tevatron Lambertsons)
- Build or procure replacement coils for LEP corrector dipoles
- Design and build prototype second harmonic choke
- Assist in design, test, and implementation of Recycler magnetic shielding in NuMI region
- Design, prototype, and fabricate electron cooling return beam line
- Assist in design and fabrication of new vacuum system and magnetic shielding for electron cooling solenoids
- Procure long ceramic beam tubes
- Study wire compensation system
- Design a magnetic reference system for Tevatron

Jobs BD wants to have done
- Build additional Booster dogleg magnets, stands, and vacuum systems
- Build spare SSS/SSN sextupole for Accumulator/Tevatron

- Design and build new magnets for C0 intersection region
- Rebuild 3Q120M magnets

Jobs pending review or scope decisions
- Design and build ORBUMP replacements
- Build Booster corrector packages to replace highly activated units
- Design and build additional Booster sextupoles
- Increase AP2/Debuncher aperture
  o Design and build new Debuncher injection septum magnet
  o Design and build new Debuncher injection, extraction kickers
  o Modify LQB magnets as needed to replace D4Q4
  o Other undefined AP2/Debuncher aperture work
- Design and build Tevatron IPM magnets
- Build more electrostatic separator polarity reversing switches
- Build new electrostatic separators
- Design and build Tevatron electron lens improvements
- Build and refurbish magnets for CKM beam line
- Make magnet measurement data available to potential users

For the status of various projects see:
http://tdserver1.fnal.gov/Project/JobFiles/Current_Jobs/TD_work_for_BD/TD-BD_JoblistSorted.xls

A copy of this agenda and minutes from previous meetings can be found at
http://tdserver1.fnal.gov/AcceleratorSupport/TD-BD_Meetings/

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The next meeting is planned for Wednesday, 15 October 2003, 10:00 AM, TD/Headquarters

Special item
Before addressing the agenda items, Dave Harding described an issue that has appeared recently involving perhaps as many as 20% of the dipoles in the Tevatron. The conjecture is that some of the "anchors" that support the collared coil in the iron yoke at the center position in the magnet have fractured. One signature a station's failure to have its "lift" respond to a temperature change from helium to nitrogen temperature or to standard shimming. Another signature is an anomalously high change from the production lift measurement to the current lift measurement. Finally, one magnet has been tested by adding additional shims until it did start to respond. In at least two cases the apparent failure clearly occurred before measurements were complete at MTF. Those magnets, as well as the others, have been functioning in the ring for quite some time, so we do not see any imminent danger from this condition. Since there are four anchors in each magnet, only one of which has broken, we have not compromised their primary function of preventing the collared coil from rotating or moving longitudinally relative to the yoke. It is conceivable, however, that there is some transverse motion. In any case, TD thinks that this warrants further study, including magnetic measurements and cutting the magnet open to see what has happened. There are three potential sources of subject magnets: remove a broken magnet from the ring, find a broken spare magnet, choose a marginal spare magnet and break it. Each of these has advantages

and disadvantages. (This failure can be repaired.) It was agreed that Roger would assemble a group from BD to hear a presentation from TD late next week, tentatively Friday, 10 October.

Pending Issues

Electron cooling vacuum - The current arrangement seems to be working. We will keep an eye on the situation..

Tevatron RF structure - TD has submitted a report with recommendations. This would be a big job. BD is considering it. So far there is no request for engineering work. The study can be removed from the work in progress and the fabrication can be added to the work pending review.

Electrostatic separator review - The review committee has submitted its report. A meeting is scheduled for late today to determine the action plan.

Status of various jobs

NuMI-Recycler magnetic shielding - We still need a designated Recycler spokesperson on this issue. Doug Jensen from NuMI is working with TD to make and test a prototype shield for the EPB dipoles.

ORBUMPS - Work is definitely needed on a new magnet, but the scope is not yet defined. The power supply is being replaced piece by piece.

Linac PA tubes - A meeting is scheduled at Burle next week with the interested laboratories to discuss a laboratory effort to build a limited number of tubes each year with Burle's assistance, to develop an emergency capability.

Priorities

Dave McGinnis will discuss the potential projects for FY04 with the various systems department heads, integrate the wish lists, and set overall priorities. He will report back to this meeting in two weeks. TD will work on rough labor estimates for the jobs that seem higher priority on the list to be able to report a sense of how far down the list we are likely to reach. The list needs to include projects to be delivered in FY05 as well as FY04 in order to allow scheduling of engineering time in anticipation of fabrication.