

## **TD/BD Coordination Meeting**

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Wednesday, 15 October 2003 10:00 AM

TD/Headquarters Conference Room, Industrial Center Building

Present: Paul Czarapata, David Harding (scribe), Gregg Kobliska, Dave McGinnis, Rich Stanek, Victor Yarba

### **Agenda**

Report on BD priorities for proposed projects, new and old

For the status of various projects see:

[http://tdserver1.fnal.gov/Project/JobFiles/Current\\_Jobs/TD\\_work\\_for\\_BD/TD-BD\\_JoblistSorted.xls](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/](http://tdserver1.fnal.gov/AcceleratorSupport/TD-BD_Meetings/)

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**The next meeting is planned for Wednesday, 29 October 2003, 10:00 AM, TD/Headquarters**

Paul reported on the meeting last week with Brookhaven, Los Alamos, Argonne, and Burle regarding support for the power amplifier tubes. The labs met on Monday, then met with several top Burle people on Tuesday. Burle acknowledged that the company is for sale, but claimed that obligations to the US Department of Defense through 2020 will keep this line of tubes and this technology active. They refused to consider the proposal of maintaining a bonded stock of parts due to concerns about tracking inventory, but did pledge to keep the pipeline full rather than waiting for firm orders before procuring components. They do seem to be making capital investments in the plant that suggest the intention of continuing operation. Current management also made an oral commitment that if in the future they cannot produce the tubes, they will do a technology transfer to the national labs in the form of drawings and training. The level of commitment of the other labs, Brookhaven in particular, remains unclear. The expert at Brookhaven is retiring at the end of the month. Our short term plan will continue to be reliance on Burle, but TD will plan to develop a complete set of mechanical drawings of the parts and assemblies during FY04.

We then reviewed the responses that Dave McGinnis received from the BD department heads regarding their priorities for FY04, as noted below. There seems to be some confusion over what TD is actually doing now. Dave will continue working with the heads to refine the list of requests. He will also look with the department heads at the current status reporting spreadsheet and discuss with Dave Harding ways to make the document more useful to BD.

## Technical Division Jobs for Beams Division

### Jobs continuing from FY03

#### ~~///~~Build Booster extraction septum magnets

~~///~~Top Priority *E. Prebys*

#### ~~///~~Build spare IQC/IQD magnets

~~///~~We need all our failed IQC/IQD Quad magnets repaired ASAP. Currently we only have one good IQD spare so the repairs should start with the IQD type quads. *I. Kourbanis*

#### ~~///~~Build spare Accumulator trim dipoles (NDA)

#### ~~///~~Rebuild two Tevatron D spools

~~///~~Magnet repair (R. Kephart) *V. Shiltsev*

#### ~~///~~Support Recycler flying wire development

~~///~~ do NOT authorize the following activity: Support Recycler flying wire development. *S. Nagaitsev*

#### ~~///~~Measure Booster gradient magnets (AC)

~~///~~Medium Priority *E. Prebys*

#### ~~///~~Study Linac PA tubes

### Jobs Continuing in FY03

#### ~~///~~Study Tev RF structures

~~///~~The Tech division has some Russian engineers studying microphonics of the Tev 53 Mhz cavities. If this is what is being interpreted as new Tev RF structures, then the project is premature and we in the RF department do not support it.

We suggest that it be dropped. *Ralph Pasquinelli*

~~///~~R&D on RF noise and cavity vibrations (T. Khabibulin) *V. Shiltsev*

#### ~~///~~Study Tevatron magnets

~~///~~Off-line measurements of field harmonics drifts at 150, ramp and 980(P. Bauer) *V. Shiltsev*

~~///~~Support of Kaiser coil measurements and magnet roll measurements (P. Schlabach, F. Nobrega) *V. Shiltsev*

#### ~~///~~Study electrostatic separator issues

~~///~~R&D on higher voltage separator plate coating (G. Romanov, Bossert) *V. Shiltsev*

### Jobs just starting, or to start after shutdown

#### ~~///~~Build four spare I LA magnets (FMI/Tevatron Lambertsons)

~~///~~We need three spare Lambertsons ASAP. Our spare magnets were bought from NUMI and have been installed in MI. *I. Kourbanis*

#### ~~///~~Build or procure replacement coils for LEP corrector dipoles

~~///~~Eventually we will to replace the coils to 55 LEP (plus some spares) correctors in MI -8 (50) and A150 (5) lines. Medium priority. *I. Kourbanis*

~~///~~ I know of and authorize the following TD activities for Recycler/Electron cooling: Build or procure replacement coils for LEP corrector dipoles *S. Nagaitsev*

#### ~~///~~Design and build prototype second harmonic choke

~~///~~Medium Priority *E. Prebys*

#### ~~///~~Assist in design, test, and implementation of Recycler magnetic shielding in NuMI region

~~///~~ I know of and authorize the following TD activities for Recycler/Electron cooling: Per NuMI request: Assist in design, test, and implementation of Recycler magnetic shielding in NuMI region *S. Nagaitsev*

## Jobs just starting, or to start after shutdown

- Design, prototype, and fabricate electron cooling return beam line
  - know of and authorize the following TD activities for Recycler/Electron cooling: Design, prototype, and fabricate electron cooling return beam line **magnetic shielding** (Kashikhin) *S. Nagaitsev*
- Assist in design and fabrication of new vacuum system and magnetic shielding for electron cooling solenoids
  - know of and authorize the following TD activities for Recycler/Electron cooling: Assist in design and fabrication of new vacuum system for electron cooling solenoids (Piekarz) *S. Nagaitsev*
- Procure long ceramic beam tubes
  - Medium priority *E. Prebys*
- Study wire compensation system
  - R&D on Wire BBC (J. Kerby) *V. Shiltsev*
- Design a magnetic reference system for Tevatron
  - Development of a system for B-field measurements on-line, in sync with Tev bus current (P. Schlabach) *V. Shiltsev*

## Jobs BD wants to have done

- Build additional Booster dogleg magnets, stands, and vacuum systems
  - Top Priority *E. Prebys*
- Build spare SSS/SSN sextupole for Accumulator/Tevatron
  - This looks okay from the Pbar end. I would advocate building 2 spare SSS/SSN magnets, one each for Pbar and Tevatron. Vladimir and I have talked and agreed on this and I am budgeting for one. I would suggest that a solid core lamination one (for Pbar) get built as soon as reasonable and wind coils for both even if a decision on what type of lamination to use for the Tevatron one is pending. *Elvin Harms*
  - A0 sextupole stands/spare (D. Harding) *V. Shiltsev*
- Design and build new magnets for C0 intersection region
- Rebuild 3Q120M magnets
  - We need 1-2 spares. Low priority. *I. Kourbanis*

## Jobs pending review or scope decisions

- Design and build ORBUMP replacements
  - Top Priority *E. Prebys*
- Build Booster corrector packages to replace highly activated units
  - Low Priority *E. Prebys*
- Design and build additional Booster sextupoles
  - Low Priority *E. Prebys*
- Increase AP2/Debuncher aperture
  - Design and build new Debuncher injection septum magnet
  - Design and build new Debuncher injection, extraction kickers
  - Modify LOB magnets as needed to replace D4Q4
  - Other undefined AP2/Debuncher aperture work

## Jobs pending review or scope decisions

- Design and build Tevatron I PM magnets
- Build more electrostatic separator polarity reversing switches
- Build new electrostatic separators

~~///~~ Design and build Tevatron electron lens improvements

~~///~~ One experienced mechanical engineer to lead TEL upgrade for shutdown'04 *V. Shiltsev*

~~///~~ Build and refurbish magnets for CKM beam line

~~///~~ Make magnet measurement data available to potential users

## **Additional Jobs**

~~///~~ Build an MI Pinger magnet. I have asked for money in my 04 budget for the two additional jobs *I. Kourbanis*

~~///~~ Build a larger aperture (4") MI quad magnet prototype. This is to replace the quads between the Lambertson magnets in all our extraction areas and is expected to improve transmission and improve losses. I have asked for money in my 04 budget for the two additional jobs *I. Kourbanis*

~~///~~ P. Limon to lead team to improve HV performance of existing separators *V. Shiltsev*

~~///~~ One experienced mechanical engineer to lead TEL upgrade for shutdown'04 *V. Shiltsev*

~~///~~ Take one magnet for biopsy of fractured anchors - still in air *V. Shiltsev*

~~///~~ Build weak but fast kicker for head-tail chromaticity measurements - still in air *V. Shiltsev*

~~///~~ Complete new ORBUMP power supply (\*\*not on list\*\*) - Top Priority *E. Prebys*

~~///~~ Build more spare kicker magnets (\*\*not on list\*\*) - Medium Priority *E. Prebys*

## **Jobs that Beams Division Thinks Tech. Division is Doing**

~~///~~ HTS leads (D. Harding) *V. Shiltsev*

~~///~~ Conning towers conversion (D. Gaw) *V. Shiltsev*

~~///~~ Smart bolt measurements in the tunnel and re-shimming (leader - D. Harding) *v. Shiltsev*

~~///~~ Development of ring-wide HLS system (so called "home-made" one) and help with installation of the Russian system during the shutdown. *V. Shiltsev*

~~///~~ R&D on 20kV HV modulator for TEL (Yu. Terechkine, N. Solyak) *V. Shiltsev*

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