TD Tevatron Joint Projects Meeting
5 March 2003

Present: Giorgio Apollinari, Mike Church, Paul Czarapata , Bruce Hanna, David Harding, Bob Kephart, Jim Kerby, Mike Lamm, Gennady Romanov, Vladimir Shiltsev, Nikolay Solyak, Iouri Terechkine, Victor Yarba.

Vladimir Shiltsev discussed the issues related to the HV modulator for the Tevatron Electron Lens (item #3 from the 12 February list). A spare is being constructed to the current design by BD/EES. This design is not, however, regarded as satisfactory for the long run. A new modulator should reach higher voltages, be able to produce shorter pulses, and reduce the pulse to pulse variations. The ringing at turn on must be small and the ringing on turn off should be much less than in the current modulator. The designer of the current system (and its two predecessors) is fully occupied with other work. A few potential sources of existing designs with possibly similar performances were mentioned. Vladimir will write up a one-page specification. Although this is not a TD strength, TD can help explore some of the outside options.

It was noted that the new separators TD was working on (item #9 from the 12 February list) have all been fabricated and are being conditioned by BD.

Bruce Hanna discussed the switches for additional electrostatic separators (item #11 from the 12 February list). The need is to be able to put protons on the p-bar helix for studies. Bruce sees the biggest issue as finding room in service buildings to put them. There are currently twelve separator systems and five switches, though only four are used. It is not clear whether the fifth is installed or not. The design exists in the form of complete drawings. They cost $10K-$20K each. One might consider looking at changes for reliability, but there hasn't been a problem. The switches are enclosed in an oil-filled can, two feet in diameter, a welded assembly. A motor drive and coupling mechanism moves the switches inside. Seven or eight more switches are needed, including spares. Additional separators are being considered, but additional switches would only be required if new power supplies were added. Current studies take as a constraint no additional supplies. Rob Riley and Jim Walton were responsible for building the current switches. Bruce Hanna will be the BD contact. Dave Harding will be the TD contact, with Rodger Bossert assigned to manage the project. A task number is needed. Installation will be disruptive to running and, with the rearrangement of service building equipment, not a one or two day job. We will aim for delivery in time for the 28 July 2003 shutdown. Further discussion is needed regarding responsibility for layout in the service buildings and for installation.

Vladimir indicated his interest in higher performance separators. The current separators spark at the rate of once a day at 150KV, an unacceptable rate when you have 24 in the ring. At ~110 KV, as they are run now, the sparks are about once a week to once a month. Possible improvements might be a coating to the plates or moving to RF devices.

On the Tevatron magnet supports (item #1 on the list), there are three immediate design questions: 1) What are the optimum support locations longitudinally and what is the tolerance on support placement? 2) Should replacement stands be a three-point support system or should the four-point system be maintained? 3) Does it make sense to use a cradle support rather than the current system, perhaps allowing a new support to be installed next to the existing support without lifting the magnet. Roughly one third of the stands need to be replaced. The plan is to do the work during the summer 2003 shutdown. There are reports of BD engineers starting to look at these issues. Paul Czarapata will ascertain the state of that work and decide whether TD help is useful. Dave Harding is the TD contact.

For the potential strong dipole project (item #8 on the list), Jim Kerby has been appointed the TD contact for the initial study.

On the conning tower upgrade (item #10), Dave Harding promised a report next week.