

AD/TD Joint Projects Meeting
Thursday, 31 March 2004, 10:30 AM
Hermitage Conference Room

Present: Pushpa Bhat, John Carson, Dave Harding (scribe), Gregg Kobliska, Eric Prebys, Ron Moore, Jeff Spalding, Rich Stanek

Notable Achievements or Problems

IQD spare progress

The first spare magnet to the new insulation design is moving along now, with all four coils successfully potted. A complete magnet is expected in April. Subsequent magnets will probably not appear until FY05 unless there is new urgency.

First ILA coil potted

The first coil for a spare ILA Lambertson magnet has been potted. A second will follow within a couple of weeks. All outer cores have been stacked, and work on the first inner core should begin next week when we get the laminations back from hydrogen degassing. We expect to have one magnet complete in FY04 and the balance in FY05.

Booster extraction septum magnet spares

We now have one Booster extraction septum of the current design installed at L3. (The ones at L13 are an older design.) The two new ones that are assigned to L13 have been tested and are being carefully measured. For the time being, they are available as spares for L3. The first spare magnet is ready for testing. The second (and last) spare magnet was scheduled to be finished today, but a minor problem will delay that by a few weeks as we fabricate a replacement part. There is also a spare core.

NuMI magnetic shielding

The first two sets of magnetic shielding for NuMI dipoles have been installed in the tunnel. TD is now waiting for AD to complete the drawings for the balance (four more) of the magnets. Extra care is being taken due to the discrepancies that were found between the layout drawings and actual conditions in the tunnel. NuMI is waiting for an opportunity to make a power on access and take *in situ* measurements.

Ceramic beam tubes

TD is proceeding on the procurement of spare NuMI kicker beam tubes. The main requisition is in process and a requisition for the form will follow. TD is working with the AD departments on the specifications for the Booster and P-Bar kickers.

ORBUMP review

A design review of the new ORBUMP project is planned for next Tuesday.

Electrostatic separators

The situation has not changed dramatically from two weeks ago. We have no confirmed working spares. The plan is to start testing the original spares at NWA. Although they were initially stored under vacuum, they are no longer under vacuum and it is not known when or how they were let up. The hope had been to install five separators during the 2004 shutdown, but possible fallback positions are being explored. Getting MP9 set up for testing and processing is about two months away, but that will allow parallel operations.

Two of twelve polarity reversing switches are complete. They had been hoping for seven by the end of May. Work is now largely limited by the number of technicians. One (of two authorized) contract techs has been hired for this and the other separator work.

Tevatron dipole anchor bolts

Dave pointed out that there are several aspects to the problem. On the breadth front, Ray Hanft has been studying the historical and modern data, comparing changes in lift due to thermal changes, aging, and reshimming. Different magnets have different sets of data available, so Ray has developed several cuts on the data trying to identify suspicious magnets. At this point it looks as though roughly 15% of all magnets have suspicious anchors, with the density much higher on later magnets.

The second front is what impact this might be having on the magnetic field and thus the operation of the Tevatron. Dave argued that to convince yourself that you understood the problem well enough to commit to major remedial action was not easy. He suggested that a thorough program would examine the four to six magnets currently above ground that are identified as suspicious. This would include measuring the field angle and the field harmonics after each of several thermal cycles and ramping cycles. Quenches are not seen as relevant. This program would need to be repeated on a comparable number of unsuspecting magnets to ensure that any observations were indeed abnormal. At one to two weeks per magnet, ten magnets would take ten to twenty weeks. Since the test facility is only available for Tevatron work with at most a 50% duty cycle and there are other Tevatron requests, this program will be lengthy. The first magnet is being tested.

TD plans to open up at least one suspicious magnet to see whether an anchor actually is broken, but this will not happen on any magnet until after all possible magnetic measurement information has been wrung out of it. At this stage, a remediation plan could be considered and tested with a program that would likely be comparable in length to the initial measurements.

Jeff asked for a brief written interim report, at least on the identification of suspicious anchors.

M&S Task Numbers

WPAS and the operating review have consumed the attention of TD's budget officer. She promises to get back to setting up new task numbers as soon as she has processed the effort reporting for March.

New jobs

No new jobs. TD needs to provide a cost estimate for the spare electron cooling solenoids M&S.

Priorities

No issues at this time. Jeff and Pushpa will consider an appropriate set of labels for projects to convey AD's interests and priorities. We will probably want a separate column to indicate "needed for the next shutdown" (or some other external date). A "running without a spare" column could be one indicator of urgency without a specific

deadline. Jeff will also provide a list of appropriate systems people to inform of the meeting on a regular basis, with the understanding that they do not need to attend unless there is something that specially concerns them.

The shutdown is still planned to start 23 August 2004 and last 13 weeks. This will be reviewed at the April and May PMG meetings. The start and duration are driven by tunnel installation of the electron cooling system. A recently acknowledged schedule slip in the move of equipment from Wideband Lab to the new service building is decoupled from the shutdown.

Next Meeting: Wednesday, 14 April 2004, 10:30 AM
Hermitage, Industrial Center 2 East Video Conference Room