

2010-01-11 Monday Morning Notes

Sunday, January 10, 2010
6:39 PM

Stacking

- Average stack rate was 26.1mA/hr averaging just under 500mA per day.
- The big downtime was on Saturday (see Access section below).
- Sunday AP1001 tripped, DCE11 needed a restart. Again this morning.
- ARF1-2 tripped and was turned back on

Transfers

- Overall efficiency reports as 88%
 - However, there were problems with the Friday transfers
 - Transfers 16248 and 16249 were less than 80% efficient, in part due to transfer from large stack.
 - Transfer 16250 (Friday, 16:07) - documented in <http://www-bd.fnal.gov/cgi-mach/machlog.pl?nb=pbar10&action=view&page=21&scroll=false&load=>
 - Something bad happened with that transfer
 - The MI TBT looks bad, but it does not match the signature of A3B7.
 - The first three transfers were only about 50%
 - ◆ A:EKIKPB is normally set to the value of A:EKIKRP after the reverse proton tune-up. This is in an ACL file.
 - ◆ A:EKIKPB then has +2.5KV added to it as a fudge factor between the pbar and reverse proton settings.
 - ◆ P163 was started at an inopportune time such that it set the kicker back to the reverse proton value.
 - ◆ A:EKIK has a slight slope, so there was a slope to the bunch intensities with the first bunch getting scraped the least and the last bunch getting scraped the most.
 - We lost the last three transfers.
 - ◆ Just before the fourth transfer, MI had a vacuum burst and values closed.
 - ◆ The Recycle sequencer was ABORTED, but the Pbar sequencer remained running.
 - ◆ The RR sequencer had the bad luck of being aborted in a state where it never toggled out of the "ready for transfers" state.
 - ◆ The Pbar sequencer chugged on and had three quick transfers. All lost.
 - SDA is missing data on the transfer.
- Taking out the transfers from large stacks and the set of transfers where we lost beam.
 - 165 transfers over 74 sets with a total transfer efficiency of 95.3%

Access

- First sign of trouble was A:IKIKP1 tripping. This is the supply that power module #1.
- A:IKIK
 - A:IKIK has three kicker modules
 - #1 was put on a separate supply in August 2008.
 - Slowly conditioned it to where it can now run at normal output.
 - Spellman PS HV section replaced. There were further problems, such that we ran out of spares. There are no further 60KV spares
 - Switched A:IKIK back to original configuration with all three modules powered by the main supply.
 - No vacuum problems there for a few months, so we can now run this module at the same voltage as the other two modules.

- A:IKIK has run fine since the change.
 - A:IKIKP1 is no longer used.
- After going into standby to work on A:IKIK module #1 power supply, Debuncher vacuum in the 30 straight section quickly degraded triggering an access.
- Vacuum Leak
 - Traced to a feed through on horizontal band 4 TWT#1.
 - Leak was repaired but we won't be able to use that TWT until the sector is letup to replace the feed through.
 - That is one TWT out of four in one horizontal band out of four.
 - However, we did not lose cooling. It looks like that TWT was running at reduced power such that the sum TWT power is now more with that TWT off.
 - First signs of trouble with HB4 was January 7th at ~1600 when the attenuator had to go from 10dB to 20dB.
- LCW Leaks
 - A3B8 - slow dripper orange hose/elbow - fixed
 - A3Q13 dripper on a black hose on the downstream end - fixed
 - A6S12 (multipole magnet) internal leak on upper wall side coil pack - most of the leak.
 - This one will need a day of downtime to replace, but should be able to be replaced without breaking vacuum.
- Couplers replaced on stacktail kicker tanks
 - The couplers are for the motion control, coupling the motors to the drive shafts that move the tanks.
 - We have had problems recently of not being able to move the tanks.
 - It has been found that offsets to the stacktail tank position drive emittances.
 - As a result, we have not been able to get the stacktail tuned up to optimal.
 - Tank 9 had a pair of broken couplers in the vertical motion, as we already suspected from our tuning results.
 - Couplers on all the stacktail tanks were changed.
- A3B7
 - We were a little afraid of what would happen when we access, since the last few accesses have shown us that after an access A3B7 misbehaves.
 - For years, A3B7 runs at 24.7mH, has measured 6mH since it started misbehaving, and is now 8.52mH.
 - CHAOS was started and to our surprise, A3B7 did not misbehave.
- Debuncher Cooling Work
 - HB1 connections tightened, but it is still at its lower output state.
 - HB2 and HB3 had attenuation changed.
- DRF1-1 driver glassman replaced.
 - This was just a matter of being in the right place at the right time. Experts were getting a level from AP50 when they noticed the supply making a bad sound.
- Cryo Tank
 - The first cryo tank in A60 has a large iceball. The fan is not working.
 - This is a box fan.
 - A new box fan was put in place of the broken one.
- Bakeout head box replaced in A50

Requests

- No requests yet today.

The Numbers

- AI's Numbers
 - Stacking
 - Pbars stacked: 1491.71 E10
 - Time stacking: 63.31 Hr

- Average stacking rate: 23.56 E10/Hr
- Uptime
 - Number of pulses while in stacking mode: 97604
 - Number of pulses with beam: 94307
 - Fraction of up pulses was: 96.62%
- The uptime's effect on the stacking numbers
 - Corrected time stacking: 61.17 Hr
 - Possible average stacking rate: 24.39 E10/Hr
 - Could have stacked: 1543.86 E10/Hr
- Recycler Transfers
 - Pbars sent to the Recycler: 1634.92 E10
 - Number of transfers : 167
 - Number of transfer sets: 77
 - Average Number of transfer per set: 2.17
 - Time taken to shoot including reverse proton tuneup: 00.58 Hr
 - Transfer efficiency: 88.41%
- Other Info
 - Average POT : 7.79 E12
 - Average production: 20.30 pbars/E6 protons
- * Red indicates a problem during data retrieval. See the message window for details.

Lots of Plots















