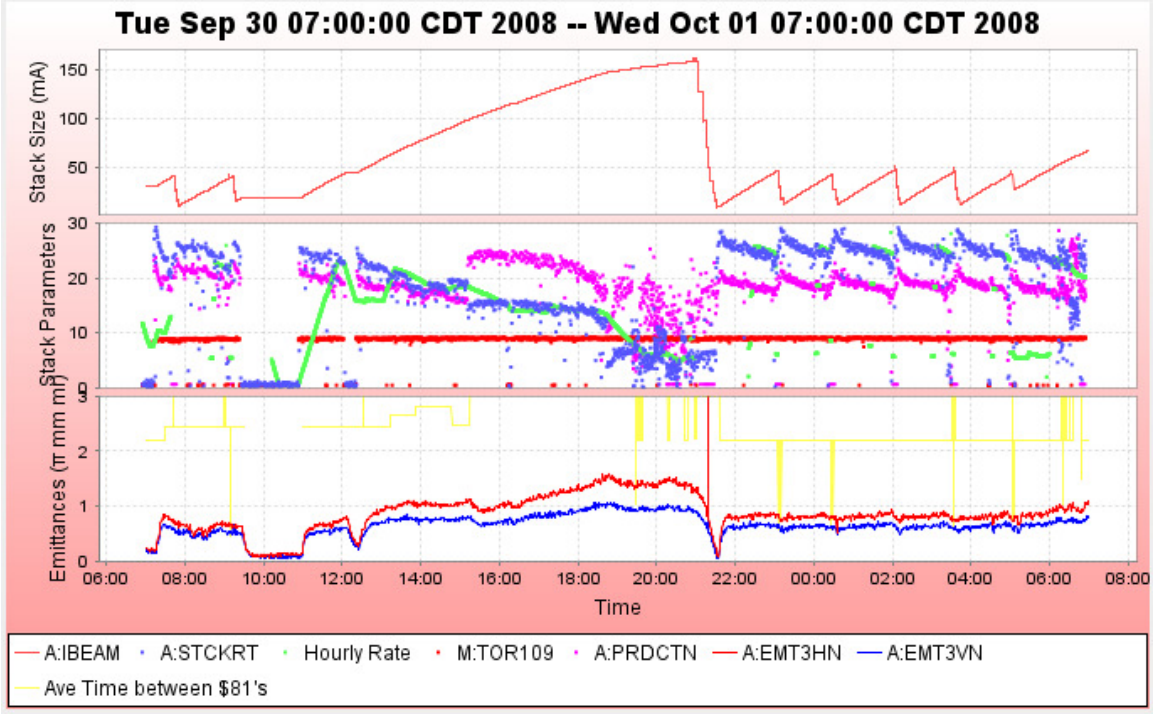
2008-10-01 Wednesday Pbar Notes

Tuesday, September 30, 2008
12:24 PM

Stacking



- Performance
  - Our best stacking hour was 25.27mA.
  - Average POT : 8.23 E12
  - Average production: 16.39 pbars/E6 protons, which was brought down in part due stacking on the day and evening shift to a stack of 158mA.

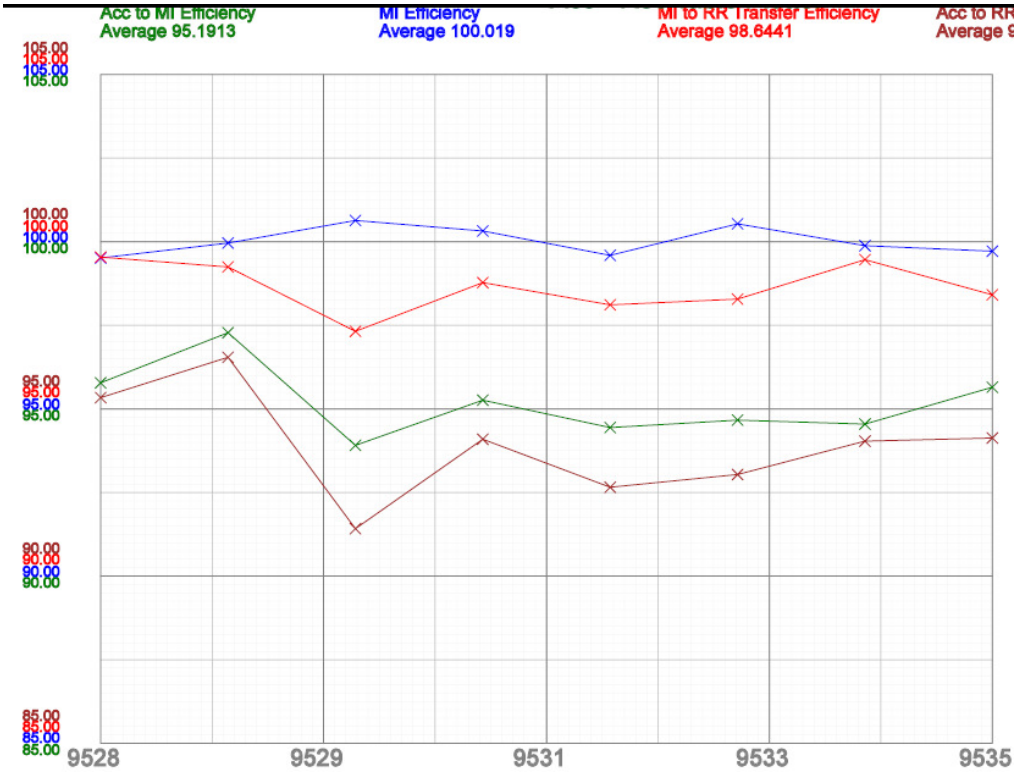
- D:LNV (10mm-5) is still running 2400V.
- **Stacktail TWT #24** was tripping on Thermal Fault. Pete Seifrid cleaned the cooling fan. This didn't cure the problem, so the power supply was replaced (http://www-bd.fnal.gov/cgi-mcr/elog.pl?nb=2008&action=view&page=743&anchor=093604).
- At 9:30am we took the beam switch and completed a 70 minute cooldown to access the water cage and check the lens reservoir tank level. It was down -5.25 inches since the lens was installed 9/13/08. This is very likely not good. The worklist database entry to hipot the transformer during the shutdown has been edited to include checking for evidence of water leak at the VCR fittings and install some sort of diverter to keep water away from the transformer primary circuit.
  Pasted from <http://www-bd.fnal.gov/cgi-mach/machlog.pl?nb=pbar08&action=view&page=last&frame=2&anchor=&hilite=&load=>
- Growing large stack through the day shift due to extended Tevatron studies and RR already being capped off at 282e10.
- We had a little scare. On the evening shift, with over 150mA in the Accumulator, the **readback for A:LQ** dropped by three amps. However, there was no beam loss nor tune shift and an independent readback of the same current did not change (A:LQPSI).
- **Overthruster was locked out by A:OSCCNS**. Set to 0 to clear. There was a small delay since the F7 console help that said to set it to -1. This has been fixed.
- At 7:35 D:LNV tripped off
  - A 1A slow blow fuse was blown on a safety system interlock module power

supply for the lens.
    - This is a new fuse that was added to the system to prevent damage to the electronics.
    - Experts think the fuse may be slighly underrated and may move up to a 1.5A or 2A fuse.

Transfers

- 9am completed a set of Recycler transfers from CNS1. There was no repeat of the controls problems from the previous shift. Controls experts put traps in place to catch the culprit if it happens again.
- Transfer efficiencies are down 1-2% both from Accumulator to Recycler and Accumulator to MI. We were 89% on the transfer from 158mA, while we would expect about 91%. We were 93-94% on other transfers, where we would expect more like 95%. This is usually an indication of either
    - Large Accumulator emittances, which we don't see.
    - Bad Closure, which looks ok
    - Beam line orbit issues.
    - Experts will investigate and we will probably want to do a complete beamline tuneup on the next set of transfers.

Column 1 Number_0_Pbar	Column 4 Number_3_Transfer Time		Column 21 Number_20_A:IBEAMB sampled	Column 22 Number_21_A:IB	Unstacked (mA)	Column 23 Number_22_R:BE	Column 24 Number_23_R:BE	Stashed	Acc to RR Eff	Column 27 Number_26_MI	Column 28 Number_27_MI Before	Acc to MI Eff	Acc to MI2 Eff	Transfers	Sets
		7:00:00 AM			372.728			344.69	92.48%	352.225	352.688	94.50%	94.62%	26	8
9535	Wednesday, October 01, 2008	5:04:12 AM	43.413	26.707	16.706	270.319	286.044	15.73	94.13%	15.978	15.933	95.64%	95.37%	1	1
9534	Wednesday, October 01, 2008	3:35:41 AM	45.534	11.366	36.597	237.283	271.534	34.50	94.26%	34.713	34.643	94.85%	94.66%	3	1
9533	Wednesday, October 01, 2008	2:04:46 AM	47.527	11.660	38.214	202.666	238.095	35.66	93.32%	36.298	36.350	94.99%	95.12%	3	1
9532	Wednesday, October 01, 2008	12:29:06 AM	42.978	11.541	33.929	171.933	203.177	31.43	92.65%	32.097	32.032	94.60%	94.41%	3	1
9531	Tuesday, September 30, 2008	11:06:38 PM	46.855	11.966	37.261	137.587	172.434	35.06	94.08%	35.508	35.657	95.30%	95.70%	3	1
9530	Tuesday, September 30, 2008	9:02:22 PM	157.577	9.374	150.414	7.980	138.782	135.14	89.85%	140.049	140.640	93.11%	93.50%	8	1
9529	Tuesday, September 30, 2008	9:13:19 AM	40.442	14.999	26.592	260.503	286.080	25.68	96.56%	25.882	25.850	97.33%	97.21%	2	1
9528	Tuesday, September 30, 2008	7:43:39 AM	41.156	10.506	33.015	230.336	261.576	31.50	95.41%	31.700	31.583	96.02%	95.66%	3	1



Requests

- **Delta Kicker Tuning**: This is a mostly parasitic study that can be done during stacking. Jim Morgan will be the studier and he plans on looking for a time Friday evening to do this study.
- **Core Vertical Transfer Function Measurements**: This is ~15 minutes without stacking, with any stack size. The studiers will be Ralph and/or Steve. We can look for a naturally occurring period of downtime to do this study.
- **Core Vertical Cooling Studies**: This requires no stacking for 1 to 2 hours, and can be done with whatever beam is leftover after transfers. This study requires turning off core transverse cooling, blowing up the beam and cooling it back down for each band. If naturally occurring downtime long enough to complete this study does not happen before Sunday, then we would shoot to complete this study after the last set of transfers to Recycler on Sunday evening. Ideally the studiers would be Ralph and Steve, but they may not be available on Sunday evening so we may have to find a substitute such as JPM.

The Numbers

- Paul's Numbers:
  - Stacking in last 24 hours
  - Most in an hour: 25.27 mA at Wed Oct 01 03:11:36 CDT 2008
  - Best: 27.01 mA on 03-Jun-08
  - Average Production 17.76 e-6/proton Best: 25.41 e-6/proton on 01/30/2008
  - Average Protons on Target 8.04 e12 Best: 8.77 e12 on 07/24/2007
  - Largest Stack 158.96 mA Best: 313.58 mA on 02/18/2008
- Al's Numbers
  - Stacking
    - Pbars stacked: 409.08 E10
    - Time stacking: -339637.15 Hr
    - Average stacking rate: -00.00 E10/Hr
  - Uptime
    - Number of pulses while in stacking mode: 32213
    - Number of pulses with beam: 30315

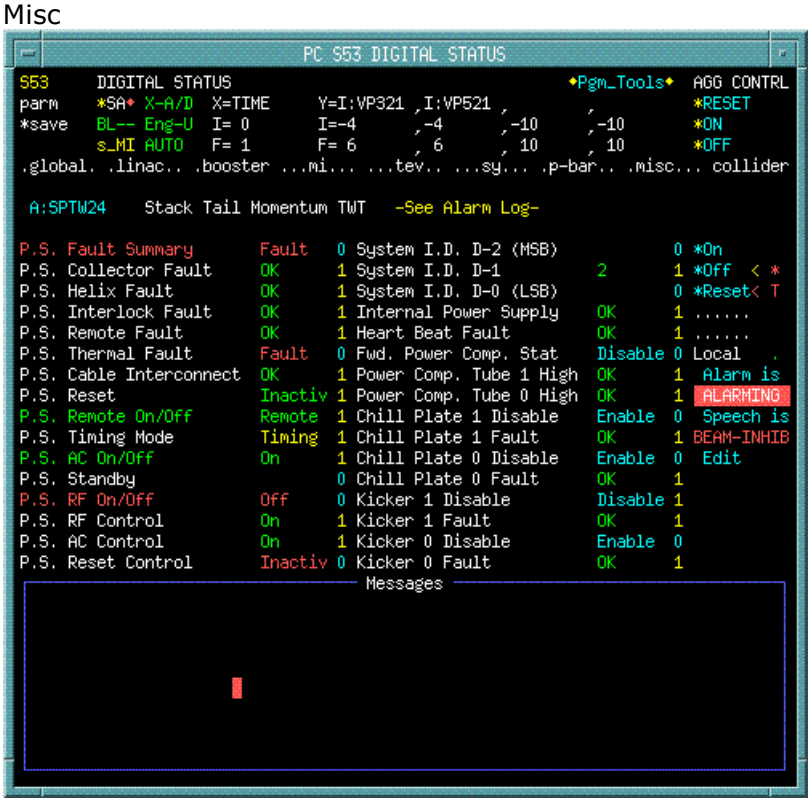
- Number of pulses with beam: 30315
- Fraction of up pulses was: 94.11%

- The uptime's effect on the stacking numbers
  - Corrected time stacking: -319625.62 Hr
  - Possible average stacking rate: -00.00 E10/Hr
  - Could have stacked: 434.69 E10/Hr

- Recycler Transfers
  - Pbars sent to the Recycler: 372.73 E10
  - Number of transfers : 26
  - Number of transfer sets: 8
  - Average Number of transfer per set: 3.25
  - Time taken to shoot including reverse proton tuneup: 00.18 Hr
  - Transfer efficiency: 89.90%

- Other Info
  - Average POT : 8.23 E12
  - Average production: 16.39 pbars/E6 protons

Misc



Pasted from <http://www-bd.fnal.gov/cgi-mcr/elog.pl?nb=2008&action=view&page=-5859&button=yes>