2010-10-29 Friday Morning Notes

Thursday, October 28, 2010
4:34 PM

On-call

- Wednesday and Thursday: Vladimir Nagaslaev
- Friday: Keith Gollwitzer
- Saturday: Steve Werkema
- Sunday: Jim Morgan

Stacking

- Looking into issues
  - The 204 permit was pulled a couple of times on AP1 line vertical trims VT101 and VT11A.
  - BPM downstream of the new vacuum window behaves differently. This was causing the overthruster to have problems with correcting the orbit.
  - M:Tor109 reads too high.
- We have good BPM coverage in the AP1 so we were able to mask BPM108 in both planes and the overthruster was able resume normal corrections.
  - It was found that the BPM has a large noise spike from sweeping. Moving sweeping timing does not change the BPM position.
  - The BPM might be able to be brought back to normal operation by the addition of a band pass filter. This is possible since BPM108 only is 53MHz. If it also were needed at 2.5MHz for transfers, this wouldn't work.
- M:Tor109 is reading 18% too high. Moving sweeping timing either direction reduces this by half.
- Stacking numbers: $29-only TLG with a 2.6 second cycle time.
  - <stacking rate>=26.6mA/hr
  - <production>=22.4 pbars/Mp
  - <POT>=8.22 Tp
- NuMI comes back online on Monday morning at 10am. At that point we go back to a normal 2.2 second $23 TLG.
  - Shot setup timelines for $29s are currently at 2.4 seconds and will need to get moved to 2.2 seconds on Monday.

Transfers

- Unstacked 621E10 in 64 transfers over 19 sets
- <efficiency>=95%
- But 96.6% if take away big transfers

Requests

- Broken debuncher momenutm preamp in the tunnel.
- Blower D:Q907 and D:Q909

Numbers

- Daily
  - Stacking
    - Pbars stacked: 552.60 E10
    - Time stacking: 23.10 Hr
    - Average stacking rate: 23.92 E10/Hr

    - Uptime
        - Number of pulses while in stacking mode: 31036
        - Number of pulses with beam: 29570
        - Fraction of up pulses was: 95.28%
    - The uptime's effect on the stacking numbers
        - Corrected time stacking: 22.01 Hr
        - Possible average stacking rate: 25.11 E10/Hr
        - Could have stacked: 580.00 E10/Hr
    - Recycler Transfers
        - Pbars sent to the Recycler: 659.32 E10
        - Number of transfers : 65
        - Number of transfer sets: 20
        - Average Number of transfer per set: 3.25
        - Time taken to shoot including reverse proton tuneup: 00.23 Hr
        - Transfer efficiency: 94.47%
    - Other Info
        - Average POT : 8.20 E12
        - Average production: 22.80 pbars/E6 proton
- Weekly
    - Stacking
        - Pbars stacked: 3322.42 E10
        - Time stacking: 145.11 Hr
        - Average stacking rate: 22.90 E10/Hr
    - Uptime
        - Number of pulses while in stacking mode: 183151
        - Number of pulses with beam: 173106
        - Fraction of up pulses was: 94.52%
    - The uptime's effect on the stacking numbers
        - Corrected time stacking: 137.15 Hr
        - Possible average stacking rate: 24.22 E10/Hr
        - Could have stacked: 3515.22 E10/Hr
    - Recycler Transfers
        - Pbars sent to the Recycler: 3318.55 E10
        - Number of transfers : 373
        - Number of transfer sets: 116
        - Average Number of transfer per set: 3.22
        - Time taken to shoot including reverse proton tuneup: 01.31 Hr
        - Transfer efficiency: 95.35%
    - Other Info
        - Average POT : 8.40 E12
        - Average production: 22.84 pbars/E6 protons

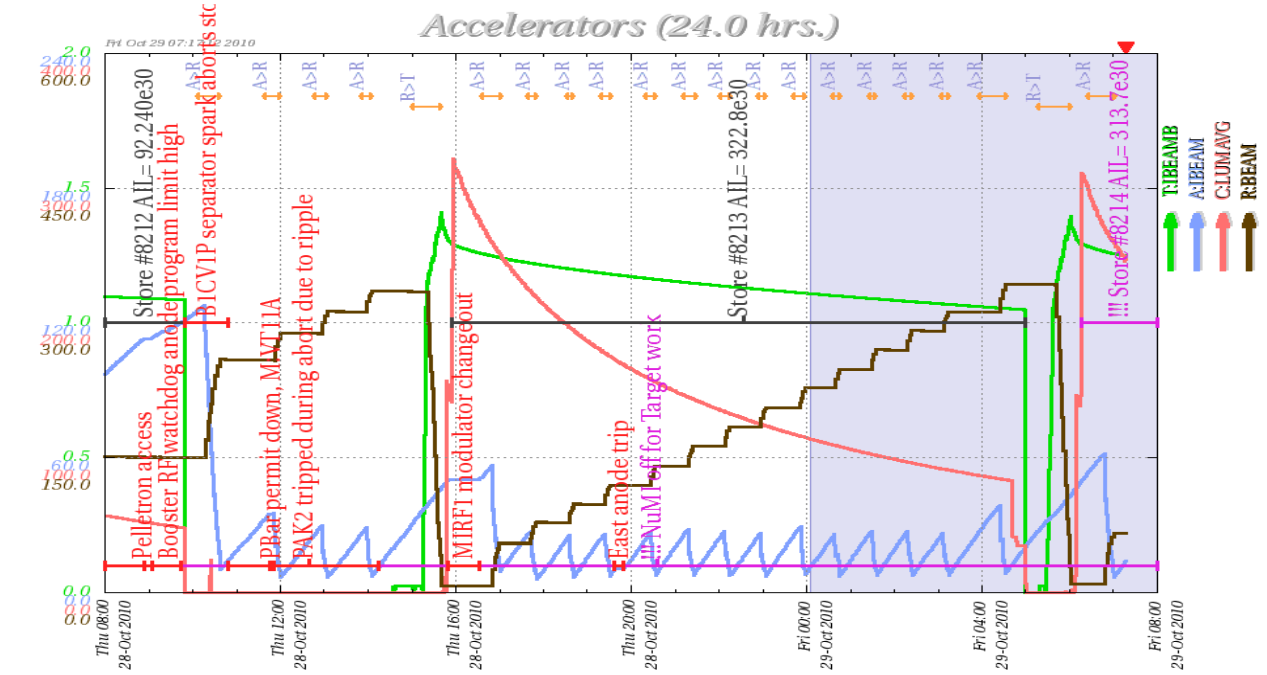
Electronic Worklist:

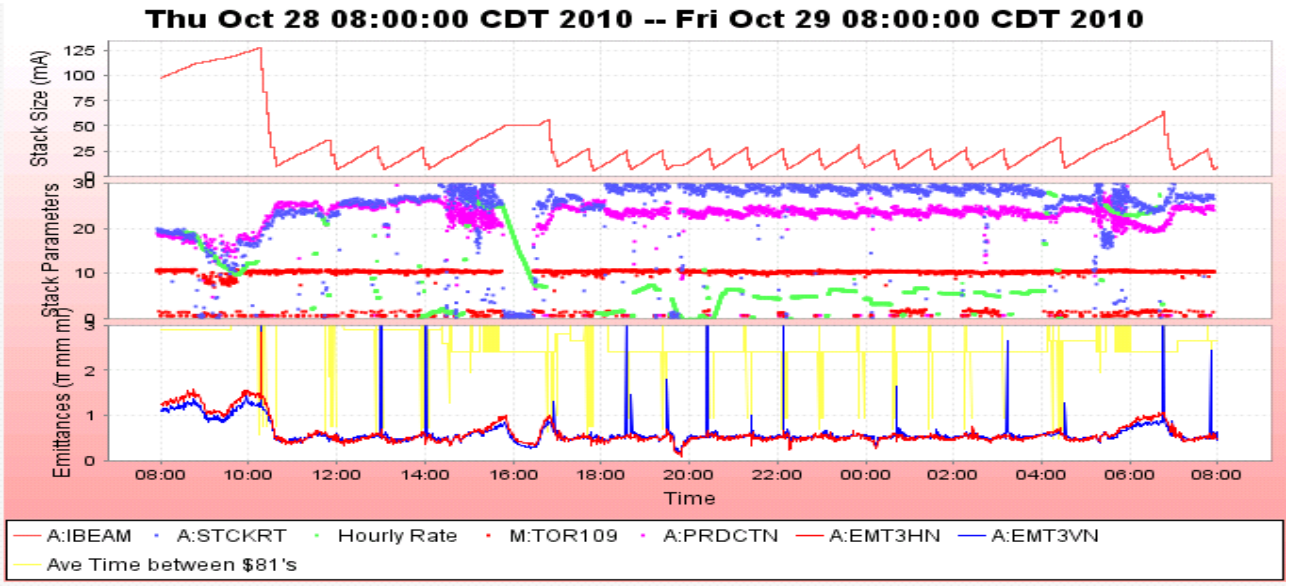
Pbar			
ID	**Requestor**	**Title**	**Location/Type**
12596	Vander Meulen, David	Repair D:PH1AU2: D:PH1AU2 is dead in the tunnel. Suspect a regulator problem.	D60 Tunnel/ Stochastic Cooling
12587	Bair,	Check D:Q807, D:Q907, and D:Q909: Need to check blowers on	AP10,

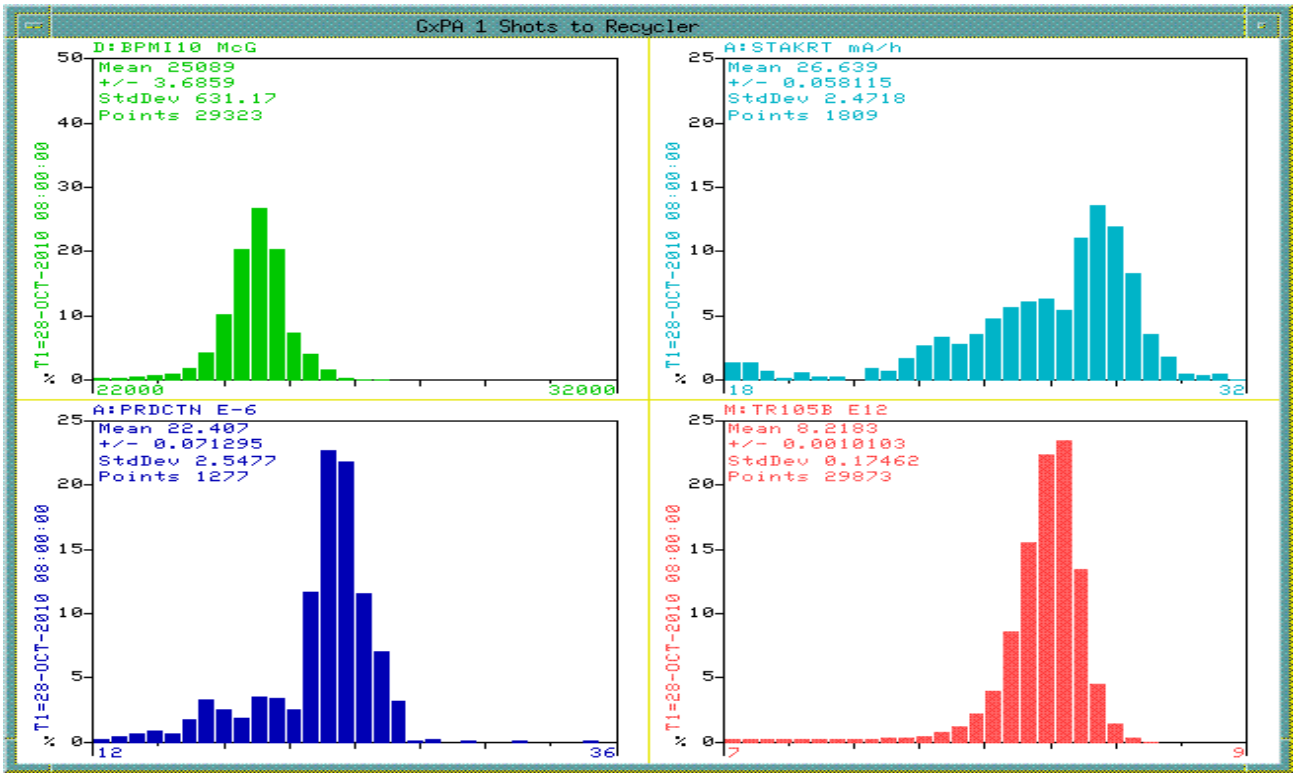
	Chuck	Dynapowers D:Q807 at (AP10), D:Q907 & D:Q909 at (AP30). The blowers can seize and cause PS to trip off. We show that the blowers in these three supplies are in unknown condition. Need to examine and bypass blowers if necessary.	and AP30/ Power Supply
12567	Seifrid, Peter	Debuncher Momentum Band #3 Gain: Check for low gain in the high level parts for Debuncher Momentum Band #3.	A30 Tunnel/ Stochastic Cooling
12539	Drendel, Brian	Repair AP1 line vacuum leak: Leak check and perform permanent repair of the vacuum leak on the downstream AP1 line. The leak is believed to be inside of the shielding wall past the sweeping magnet and Tor109. The vacuum pipe goes into the shielding wall by about 2' and is difficult to get to. This job requires taking out Tor109, the sweeping magnet and equipment.	PreVault Enclosure/ Vacuum
12536	Peterson, David	A40 Fan Status Check: The A40 Circulating Fan status is bad. Check to see if it is a sensor problem or fan problem.	A40 Circ Fan/ ES&H Interlockas
12535	Gollwitzer, Keith	Inspection of PreVault: Inspection of Pbar tunnel; search for water leaks and ground water etc.	PreVault enclosure
12520	Wisner, Bernard	Repair shunt D:QS706.: The shunt has an offset current of 0.5A. This shunt normally runs at 0A. Refer to Pbar Elog at http://www-bd.fnal.gov/cgi-mach/machlog.pl?nb=pbar10&action=view&page=269&anchor=143636&hilite=14:36:36 for details.	Transport/ Power Supply
12500	Gollwitzer, Keith	Inspection of Transport: Inspection of Pbar tunnel; search for water leaks and ground water etc.	Transport enclosure
12499	Gollwitzer, Keith	Inspection of PreVault/Target: Inspection of Pbar tunnel; search for water leaks and ground water etc.	PreVault/Target enclosure
12491	Sprosty, Susan	ODH EXH FANS: QUARTERLY MAINT.PM.FOR ODH EXH FANS FESS ASSET #AP183,AP184,AP185,AP186,AP187	PBAR TUNNEL / FESS Utils
12474	Drendel, Brian	LCW Manifold Leak on A1B3: A1B3 has an LCW leak on the LCW manifold. The leak can be seen if you look at the manifold from the downstream end of the magnet. Under the 3" in the center of the manifold, there is a very slow LCW weaper coming from the threads on that connection. This is just above the small orange hose connector labled "9."	Pbar Rings/ Water
12471	Drendel, Brian	D1Q5 LCW hose replacement: D1Q5 has a slow dripper on the fitting for the orange hose that goes to the LCW return header.	Pbar Rings/ Water
12470	Gollwitzer,	Inspection of Pbar Rings: Inspection of Pbar tunnel; search for water leaks and ground water etc.	Rings enclosur

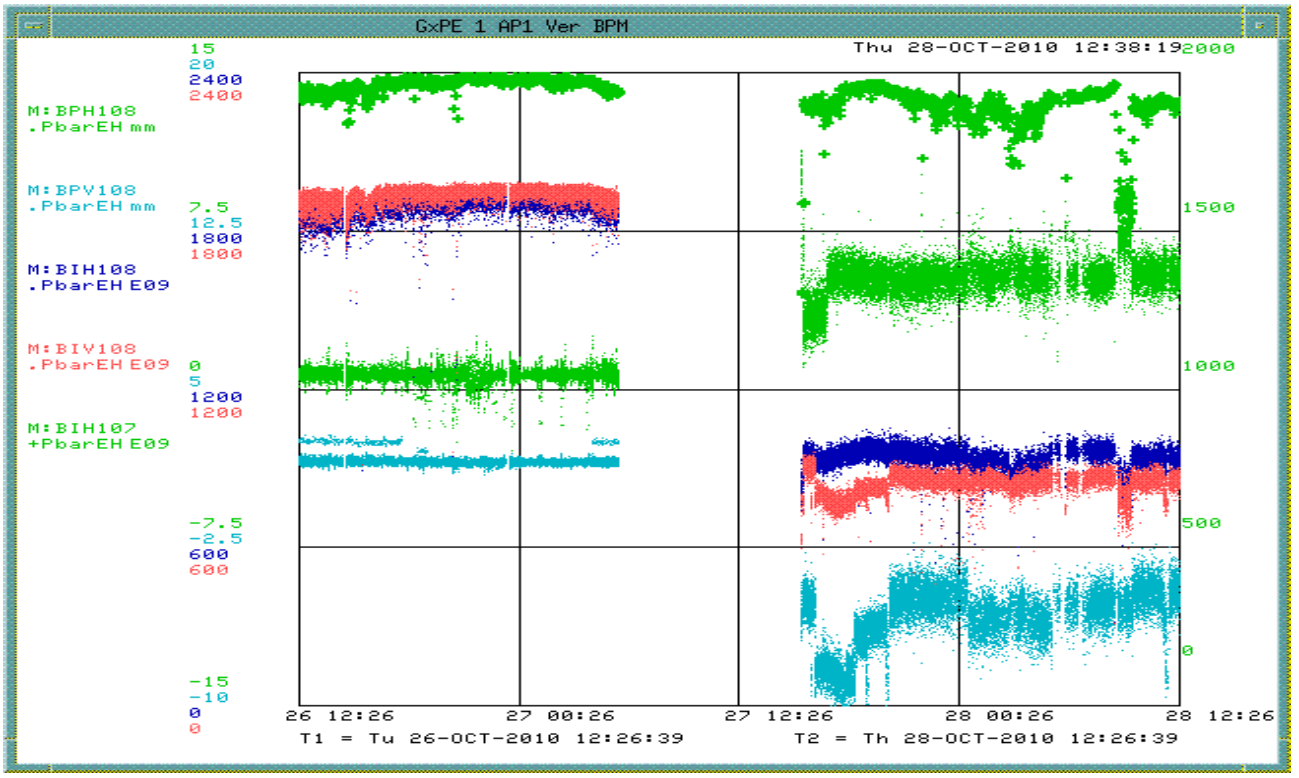
	Keith		e
12469	Drendel, Brian	Rollaround Console Doesnt Work: Stochastic Cooling guys report that the Thinwire Ethernet rollaround cart console was not working when they tried to use it in the tunnel in the A30 region. The Thinnet repeater in the AP30 service building was power cycled, which did not fix the problem. We need the Network Guys to look at the Thinnet to see if it is operational.	Pbar Rings/ Controls
12450	Levelin g, Anthon y	November target air blower check: Perform periodic maintenance on target blower in November 2010. Last maintenance was on October 4.	AP0 Target Hall/ Target Station
12406	Drendel, Brian	ARF1 calibration: After changing out the Acopian +5V power supply in the ARF1 LLRF, the output of the ARF1 amplitude curve is saturated. One hour of no stacking time is needed to recalibrate the output.	AP50/ LLRF
12378	Drendel, Brian	D:EKIK Module #1 Power Supplies: D:EKIK module #1 is starting to show some timing drift. During a shutdown of a day or longer, it would be nice to open up the oil-filled thyratron tank and check the brick power supplies.	AP10 Service Building / Power Supply
12345	Vander Meulen, David	D:V4TW01 Trips: D:V4TW01 is tripping on reverse power. A bad cable was replaced in the tunnel, but the problem is in the tank, which means we have to let up vacuum. The job including vacuum pump down is a minimum of 6 hours.	D30 Tunnel/ Stochast ic Cooling
12240	Sievert, Ken	Connect BV500H to A50 CIA Crate: Terminate cable and connector on valve, modify crate to accept valve status.	A50/ Vacuum
9310	Obrycki, Mark	Sled drawings/ panel schedules: Inspect breaker panels in tunnel	AP-10 tunnel/ ES&H Interlock s
Total Reques ts: 20			

Daily Plots

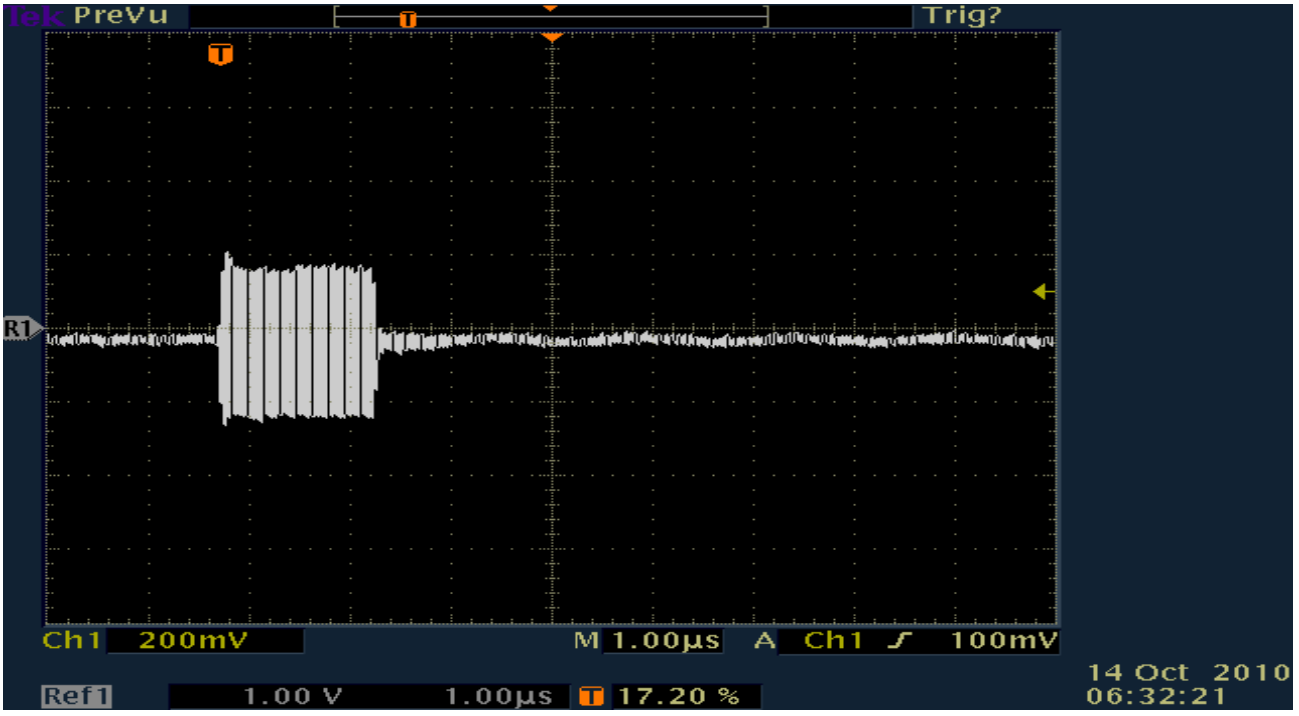

Accelerators (24.0 hrs.)
Store #8212 AIL= 92.240e30
Pelletron access
Bodster RF watchdog anode program limit high
B1CV1P separator spark aborts stc
PBar permit down, MKT1A
PAK2 tripped during abort due to ripple
MTRF1 modulator change out
East anode trip
!!! NuMI off for Target work
Store #8213 AIL= 322.8e30
!!! Store #8214 AIL= 313.7e30
T:IBEAMB
A:IBEAM
C:LUMAVG
R:BEAM
Thu 08:00 28-Oct 2010
Thu 12:00 28-Oct 2010
Thu 16:00 28-Oct 2010
Thu 20:00 28-Oct 2010
Fri 00:00 29-Oct 2010
Fri 04:00 29-Oct 2010
Fri 08:00 29-Oct 2010


Thu Oct 28 08:00:00 CDT 2010 -- Fri Oct 29 08:00:00 CDT 2010
Stack Size (mA)
Stack Parameters
Emittances (π mm mr)
Time
08:00 10:00 12:00 14:00 16:00 18:00 20:00 22:00 00:00 02:00 04:00 06:00 08:00
A:IBEAM
A:STCKRT
Hourly Rate
M:TOR109
A:PRDCTN
A:EMT3HN
A:EMT3VN
Ave Time between $81's

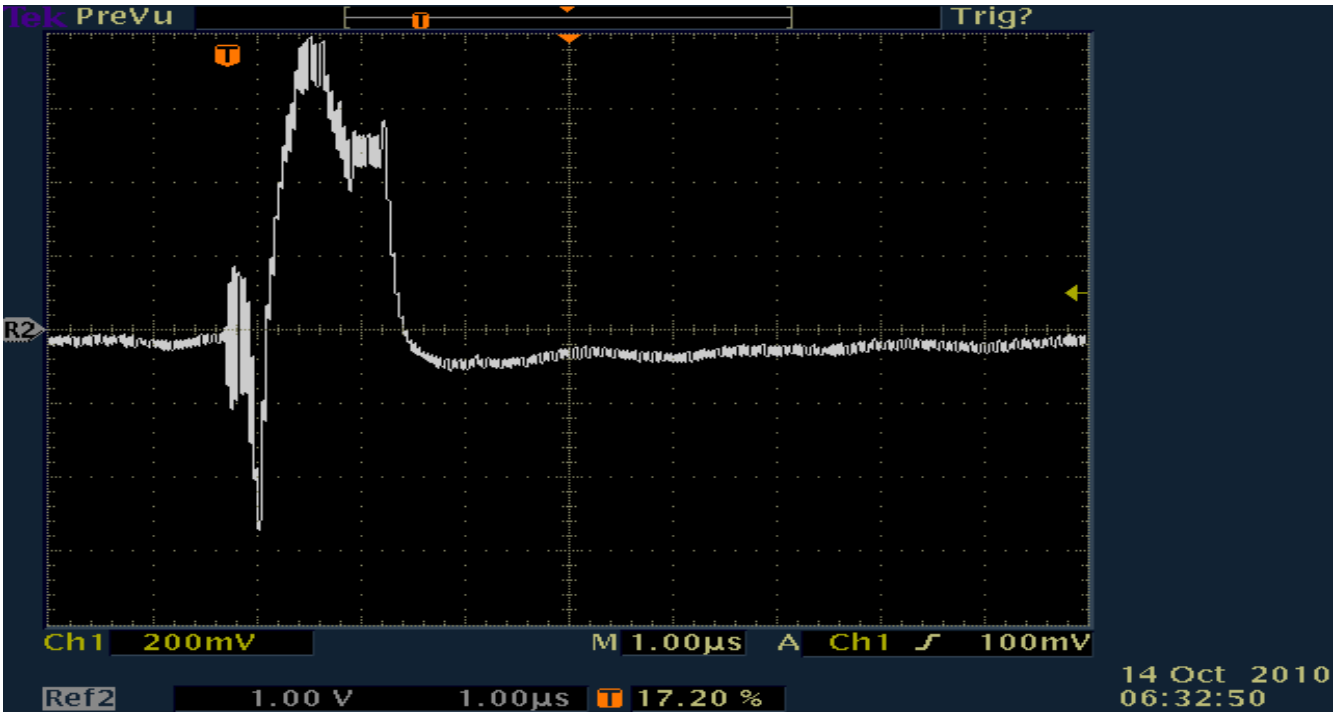




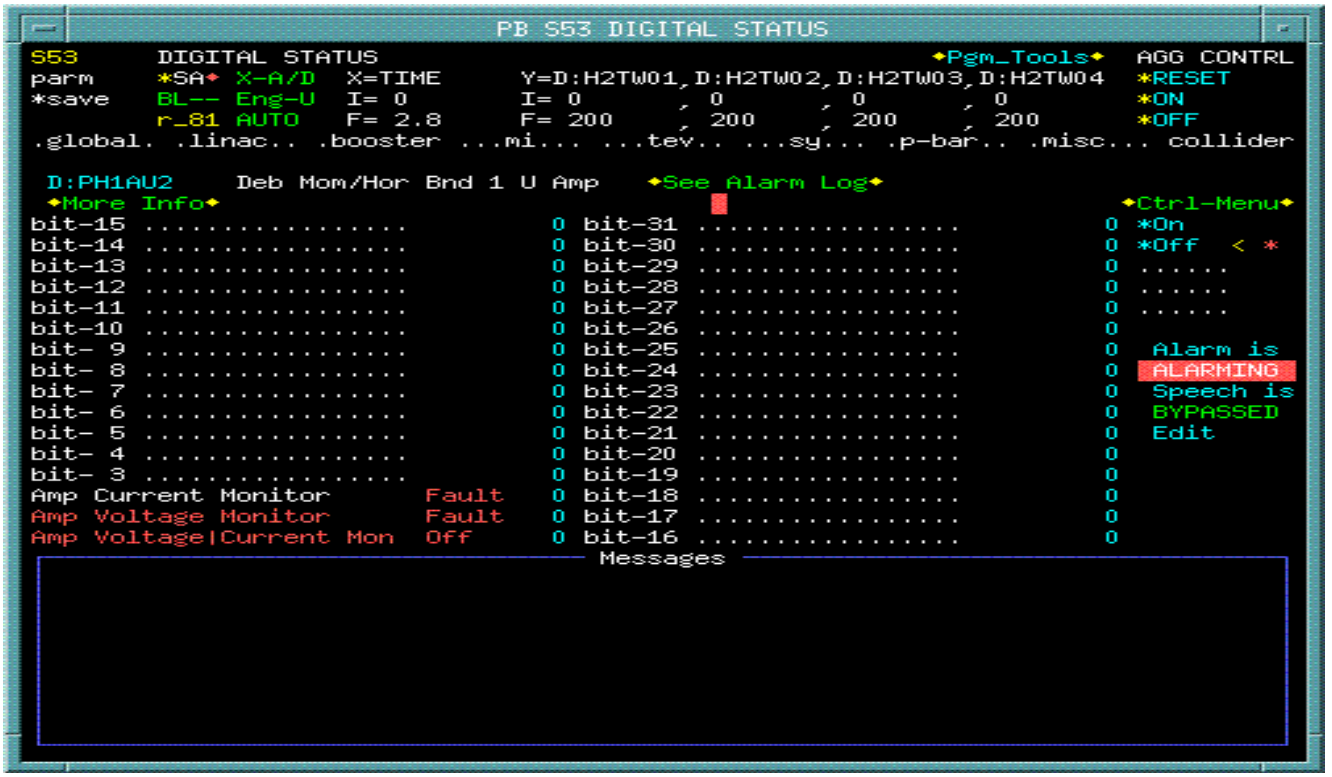
AP1 BPM at 108 is behaving differently after installation of the titanium vacuum window upstream of vt108 trim.

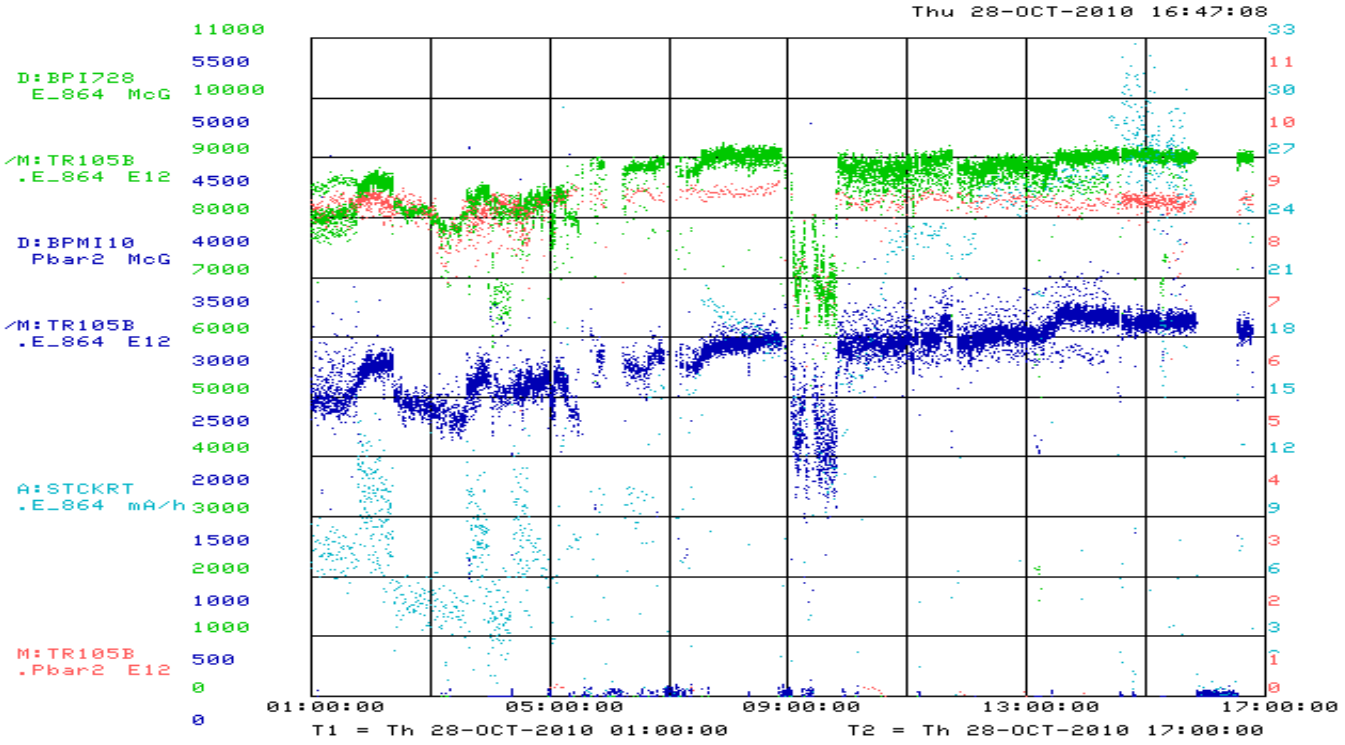


BV107



BV108, big signal from sweeping magnet

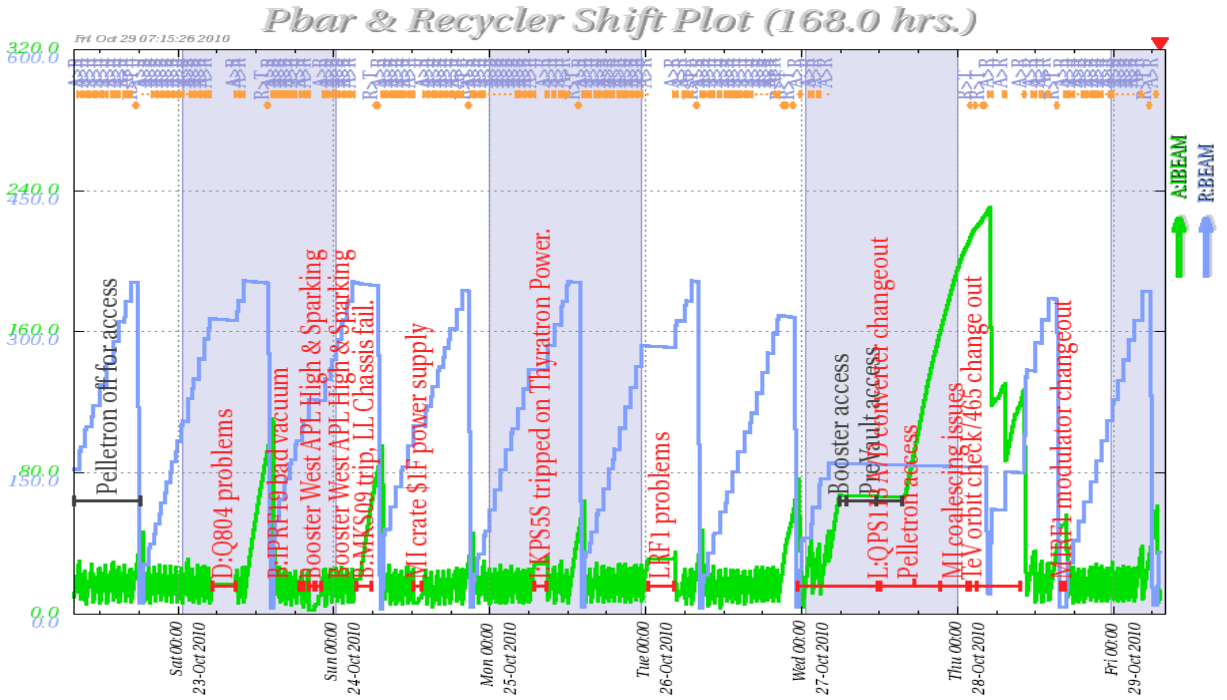


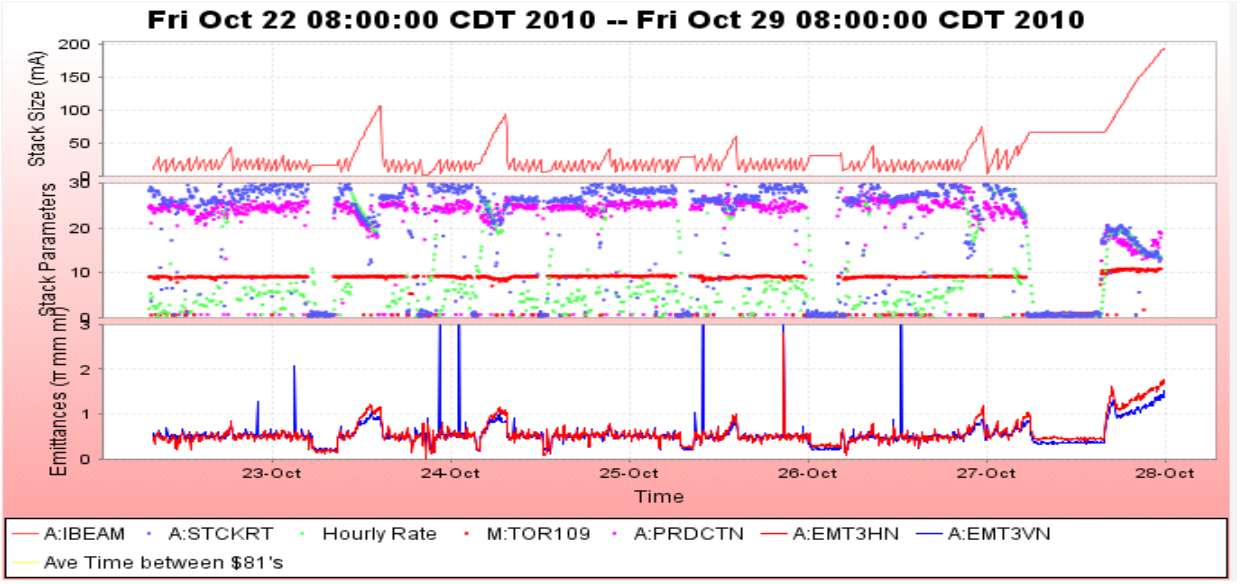


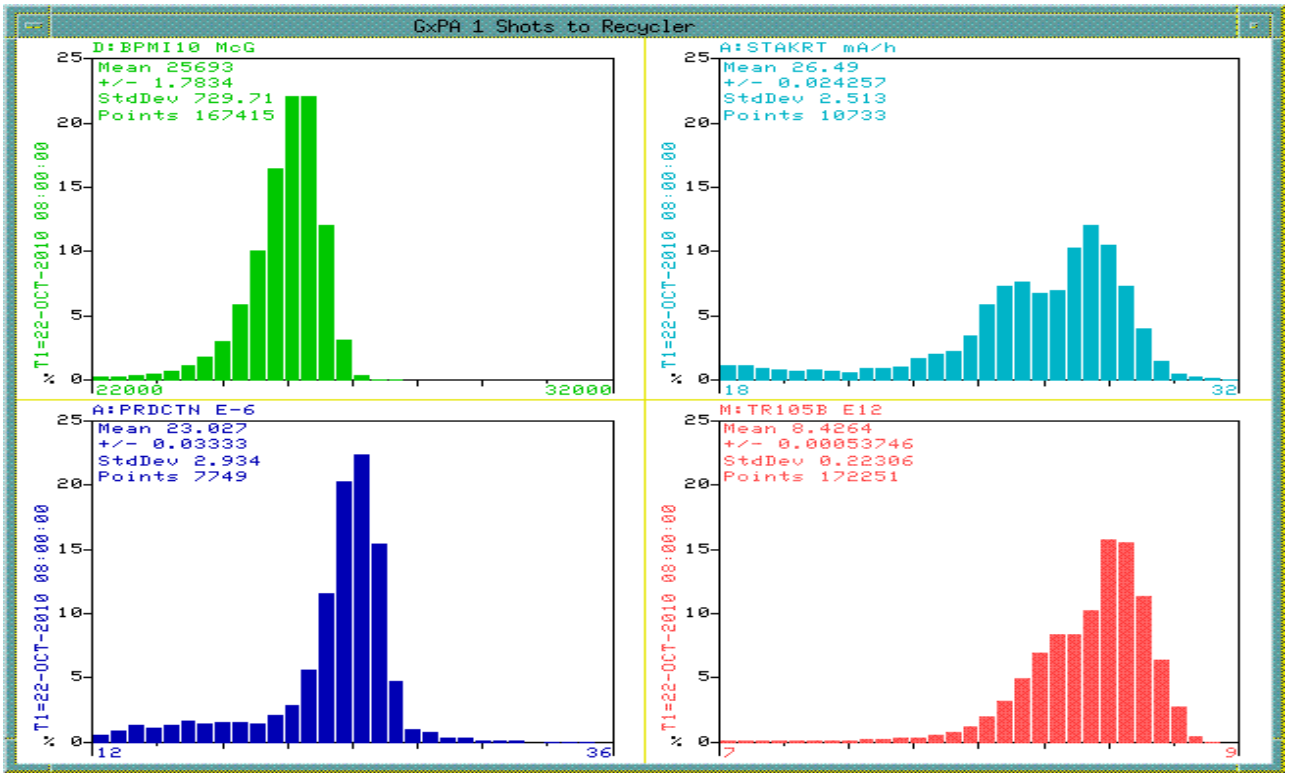
After masking BPMH108 and BPMV108, overthruster is behaving.

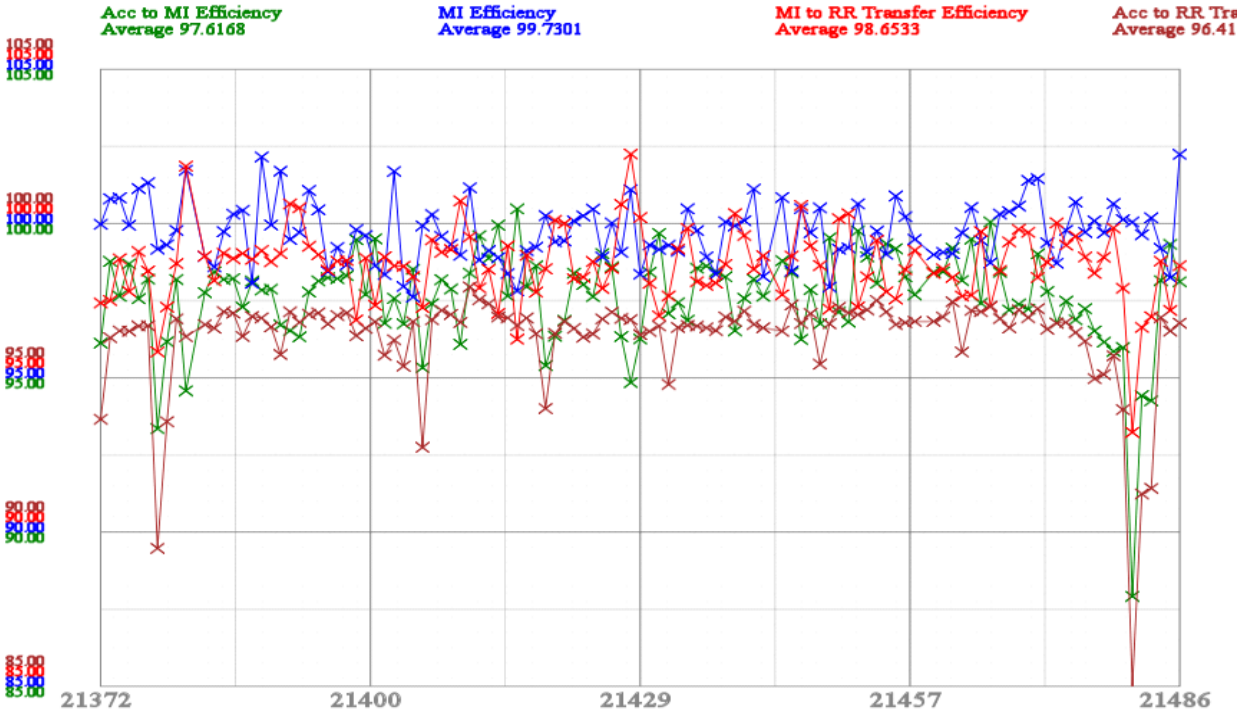
Column 4 Number_3_Transfer Time		Column 21 Number_20_A:IBEAMB sampled on $91 (A:BEAM7), E10	Column 22 Number_21_A:IBEAMB sampled on $94 (A:BEAM9), E10	Unstacked (mA)	Column 23 Number_22_R:BEAMS (R:BEAME0[0]) pre xfer E10	Column 24 Number_23_R:BEAM (R:BEAME0[1]) post xfer, E10	Stashed	Acc to RR Eff	Acc to MI Eff	Acc to MI2 Eff	Acc to MI * Acc to MI2 Efficiency	Transfers	Sets	Column 5 Number_4_Acc Horizontal Emittance	Column 6 Number_5_Acc Vertical Emittance	Column 8 Number_7_Acc Longitudinal Emittance
Totals =>				621.22			590.17	95.00%	96.94%	96.58%	93.62%	64	19	5.4861	5.3807	1.9211
Daily Average =>				621.22			590.17					64	19			
Friday, October 29, 2010	6:47	61.92	6.63	60.12	9.90	66.52	57.12	95.02%	97.14%	97.33%	94.55%	5	1	7.16	6.071	1.874
Friday, October 29, 2010	4:24	38.89	8.24	33.19	311.83	343.47	31.89	96.08%	98.56%	97.82%	96.41%	3	1	5.49	5.395	1.869
Friday, October 29, 2010	3:07	26.83	7.19	22.10	291.29	312.46	21.35	96.62%	98.02%	97.51%	95.58%	3	1	4.993	5.002	1.982
Friday, October 29, 2010	2:18	27.28	7.08	22.65	270.01	291.66	21.80	96.25%	97.11%	96.38%	93.60%	3	1	4.937	5.141	1.985
Friday, October 29, 2010	1:29	27.53	7.14	22.76	248.48	270.35	21.98	96.60%	97.41%	97.06%	94.54%	3	1	5.291	5.212	1.953
Friday, October 29, 2010	0:39	26.33	7.14	21.62	228.01	248.84	20.96	96.95%	98.37%	97.03%	95.45%	3	1	5.243	5.091	1.967
Thursday, October 28, 2010	23:51	29.46	7.90	24.01	205.24	228.29	23.21	96.68%	97.63%	96.43%	94.14%	3	1	5.084	5.127	1.956
Thursday, October 28, 2010	22:57	26.85	7.08	22.20	184.15	205.51	21.46	96.71%	98.91%	97.57%	96.51%	3	1	4.955	5.134	1.981
Thursday, October 28, 2010	22:08	27.50	7.41	22.54	162.68	184.35	21.77	96.58%	98.07%	98.21%	96.32%	3	1	4.897	5.213	1.956
Thursday, October 28, 2010	21:18	28.52	7.35	23.57	140.22	162.87	22.78	96.63%	97.03%	96.79%	93.92%	3	1	4.856	5.257	1.972
Thursday, October 28, 2010	20:26	26.92	7.20	22.17	119.06	140.42	21.47	96.85%	98.27%	99.32%	97.60%	3	1	5.108	5.248	1.981
Thursday, October 28, 2010	19:24	26.11	7.05	21.50	98.49	119.22	20.78	96.63%	99.01%	97.41%	96.45%	3	1	4.663	4.994	1.954
Thursday, October 28, 2010	18:35	25.55	6.85	21.17	78.24	98.62	20.46	96.61%	98.72%	97.55%	96.30%	3	1	4.975	4.971	2.004
Thursday, October 28, 2010	17:42	27.44	5.63	24.28	54.87	78.32	23.52	96.86%	98.74%	98.09%	96.85%	3	1	4.419	4.681	1.936
Thursday, October 28, 2010	16:49	56.68	9.04	51.32	7.15	55.02	48.22	93.95%	95.88%	94.98%	91.07%	4	1	7.237	6.657	1.836
Thursday, October 28, 2010	13:57	28.92	6.94	24.63	312.35	335.95	23.81	96.67%	98.08%	99.94%	98.02%	3	1	5.064	4.989	1.923
Thursday, October 28, 2010	12:56	30.04	6.65	25.93	288.29	313.01	25.01	96.43%	99.15%	97.78%	96.95%	3	1	5.283	5.187	1.927
Thursday, October 28, 2010	11:52	35.95	6.62	31.66	258.46	288.90	30.67	96.87%	98.08%	97.56%	95.69%	3	1	4.851	4.608	1.788
Thursday, October 28, 2010	10:17	128.01	10.19	123.79	150.53	260.04	111.91	90.40%	93.32%	93.49%	87.25%	7	1	9.729	8.235	1.657

Weekly Plots




Fri Oct 22 08:00:00 CDT 2010 -- Fri Oct 29 08:00:00 CDT 2010
Stack Size (mA)
Stack Parameters
Emittances (π mm mr)
23-Oct
24-Oct
25-Oct
26-Oct
27-Oct
28-Oct
Time
A:IBEAM
A:STCKRT
Hourly Rate
M:TOR109
A:PRDCTN
A:EMT3HN
A:EMT3VN
Ave Time between $81's


GxPA 1 Shots to Recycler
D:BPMI10 McG
Mean 25693
+/- 1.7834
StdDev 729.71
Points 167415
A:STAKRT mA/h
Mean 26.49
+/- 0.024257
StdDev 2.513
Points 10733
A:PRDCTN E-6
Mean 23.027
+/- 0.03333
StdDev 2.934
Points 7749
M:TR105B E12
Mean 8.4264
+/- 0.00053746
StdDev 0.22306
Points 172251
T1=22-OCT-2010 08:00:00


Acc to MI Efficiency
Average 97.6168
MI Efficiency
Average 99.7301
MI to RR Transfer Efficiency
Average 98.6533
Acc to RR Tra
Average 96.41
105.00
100.00
95.00
90.00
85.00
21372
21400
21429
21457
21486