2010-01-07 Friday Morning Notes

Friday, January 07, 2011
7:24 AM

Stacking and Transfers

- Stacked 20.1mA/hr with a production of 20.1 with 7.75 Tp on target. Numbers down due to large stacks.
- Unstacked 758E10 in 74 transfers over 23 sets with an average efficiency of 92.3%
    - Lost one transfer on set 22575 due to miscommunication with P1 line saftety system testing. Critical device tripped off, resulting in the lost transfer.
    - Transfer 22579 was from 173mA stack, but was still 90%
    - Take those two transfers out and we have an average overall efficiency of 94.2%
    - Daily average 379E10 in 27 transfers over 12 sets
    - Couple of kicker timing adjustments and other tuning

Interesting Happenings

- A controls system (global, not just pbar) on the Wednesday evening shift resulted in a lot of controls issues.
- On the Thursday owl shift both Stacking and D/A VSA's stopped working.
    - The Rabbit processor controlling the VSA local oscillators, D:VSAOSC and A:VSAOSC, stopped updating at about 8:19 PM last night. Power cycled the oscillator.
    - Had to resent the D/As for the mux swithes on P36 MISC_HRDWR <14>
    - Had to restore the P58 MISC settings for SEM806

Studies

- *Debuncher tune scans* (http://www-bd.fnal.gov/cgi-mach/machlog.pl?nb=pbar11&action=view&page=6&scroll=false&load=)

Numbers (2 days)

- Stacking
    - Pbars stacked: 1301.66 E10
    - Time stacking: 43.92 Hr
    - Average stacking rate: 29.64 E10/Hr

- Uptime
    - Number of pulses while in stacking mode: 60693
    - Number of pulses with beam: 55867
    - Fraction of up pulses was: 92.05%

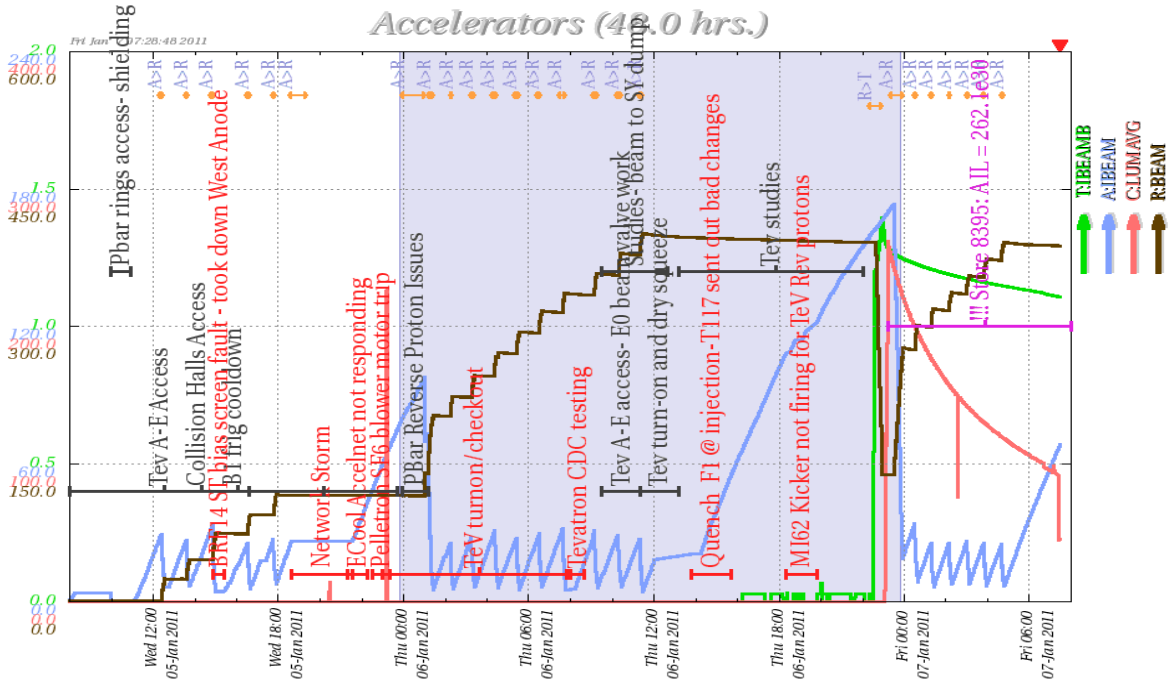
- The uptime's effect on the stacking numbers
    - Corrected time stacking: 40.42 Hr
    - Possible average stacking rate: 32.20 E10/Hr
    - Could have stacked: 1414.10 E10/Hr

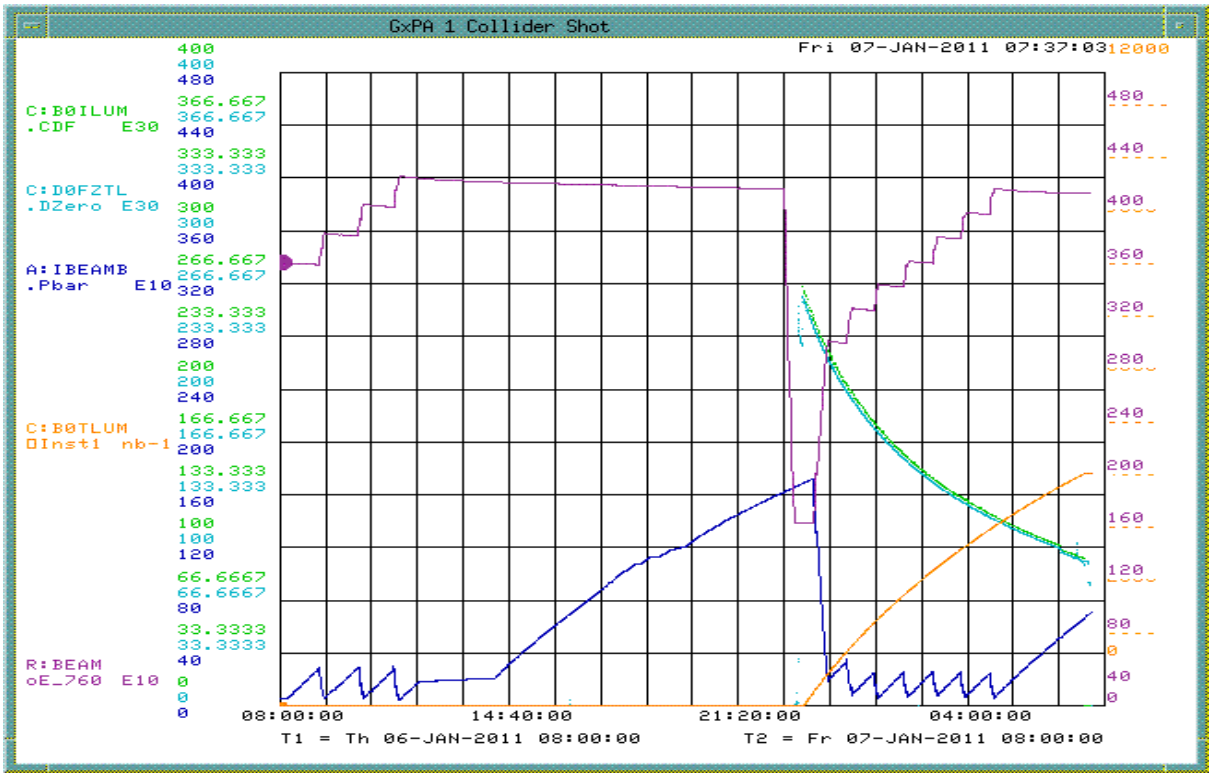
- Recycler Transfers
    - Pbars sent to the Recycler: 1224.40 E10
    - Number of transfers : 113
    - Number of transfer sets: 24

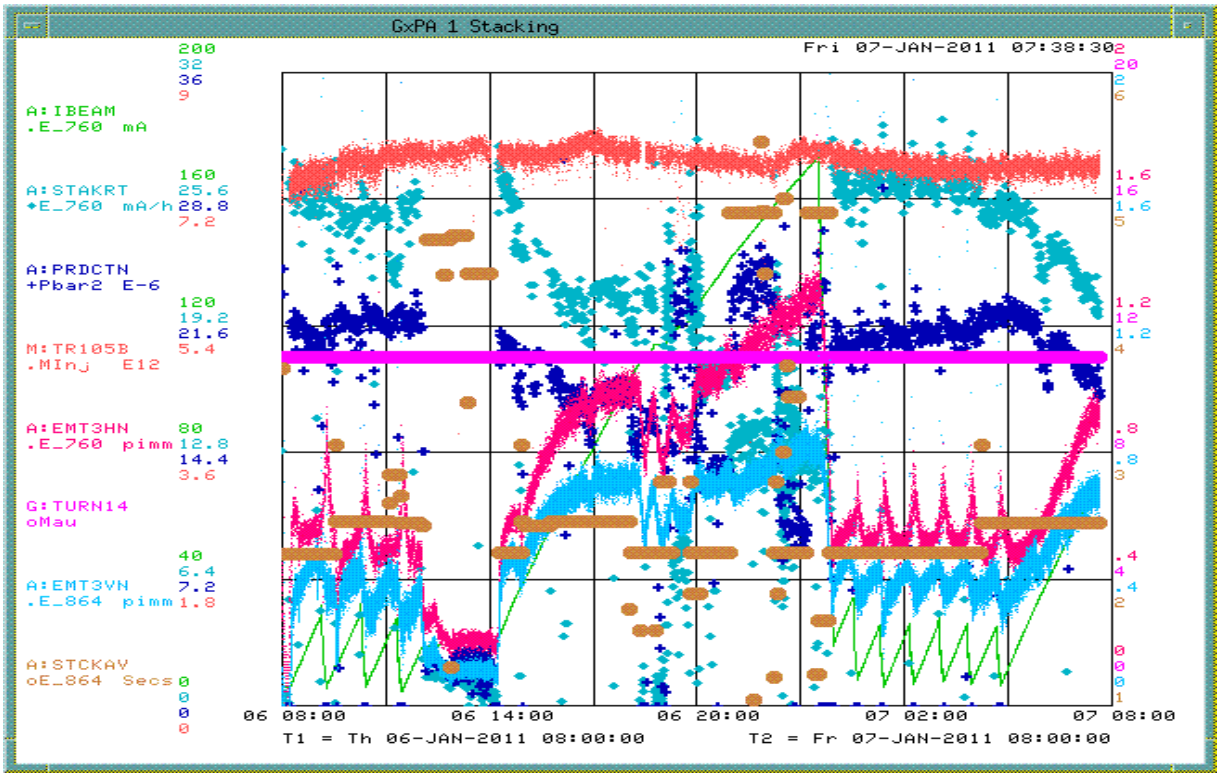
- Average Number of transfer per set: 4.71
- Time taken to shoot including reverse proton tuneup: 00.40 Hr
- Transfer efficiency: 91.52%

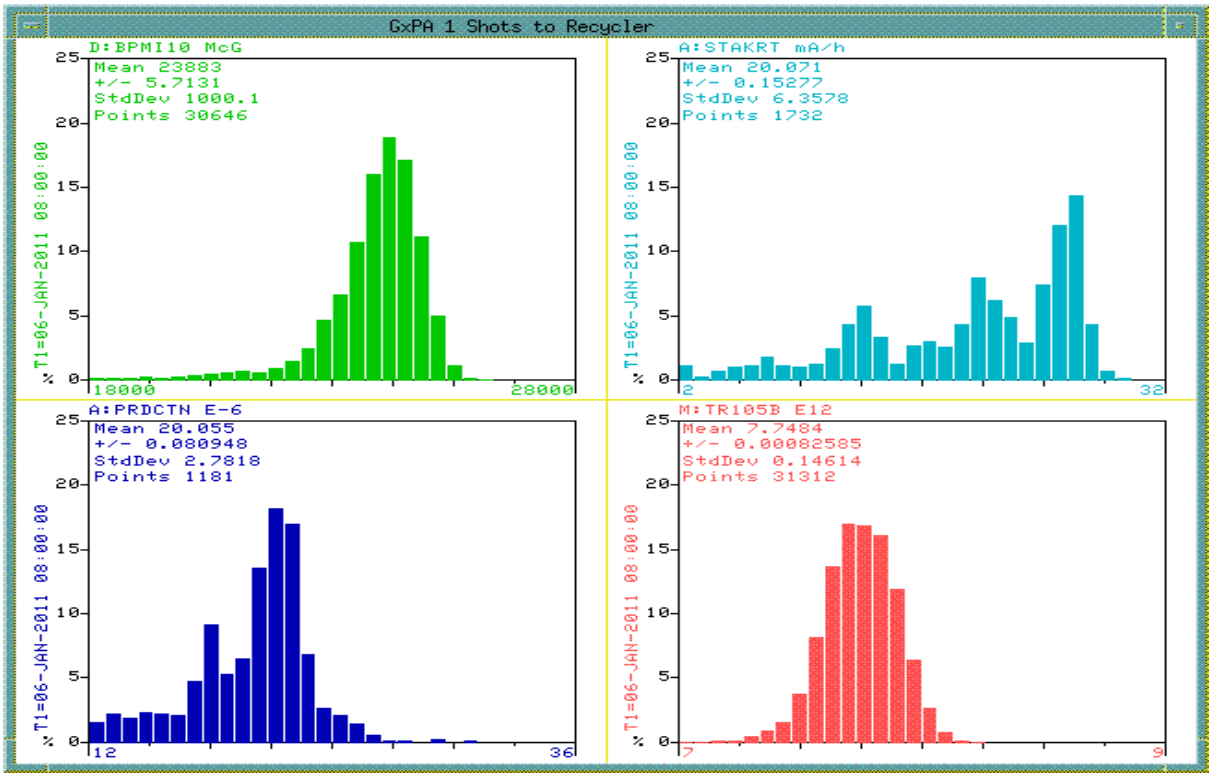
- Other Info
  - Average POT : 7.68 E12
  - Average production: 30.34 pbars/E6 protons

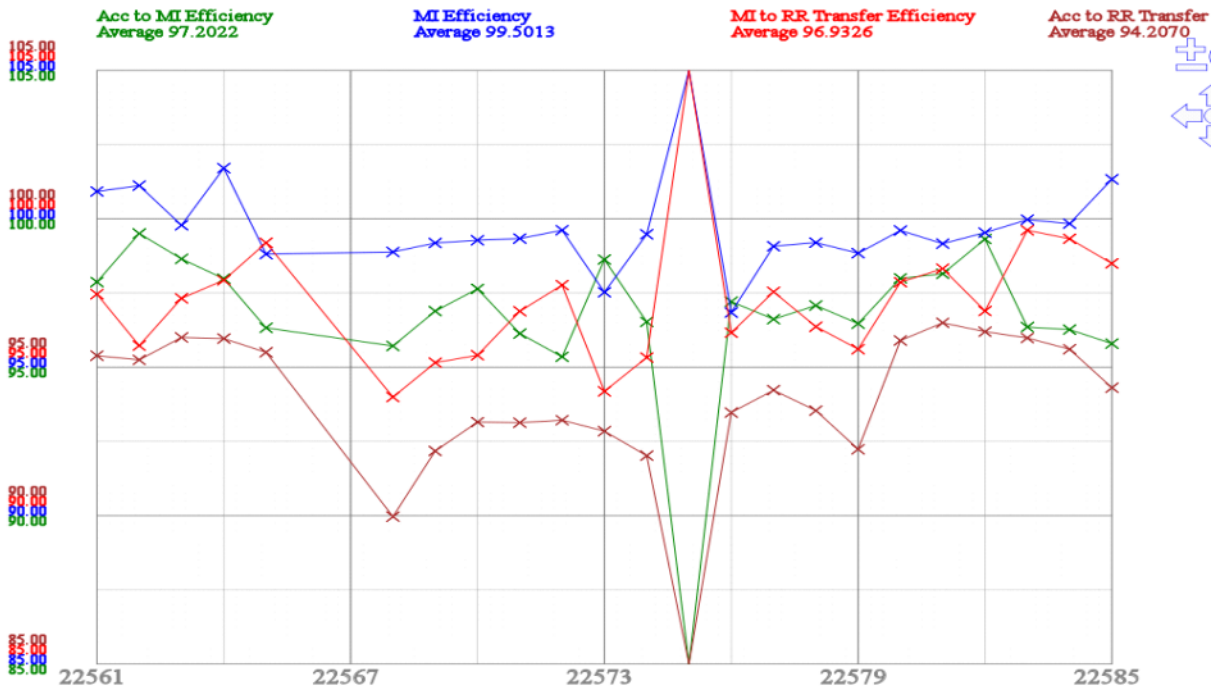
Plots




GxPA 1 Collider Shot
Fri 07-JAN-2011 07:37:03
C:B0ILUM
.CDF E30
C:D0FZTL
.DZero E30
A:IBEAMB
.Pbar E10
C:B0TLUM
□Inst1 nb-1
R:BEAM
oE_760 E10
08:00:00
14:40:00
21:20:00
04:00:00
T1 = Th 06-JAN-2011 08:00:00
T2 = Fr 07-JAN-2011 08:00:00


GxPA 1 Stacking
Fri 07-JAN-2011 07:38:30
A:IBEAM
.E_760 mA
A:STAKRT
+E_760 mA/h
A:PRDCTN
+Pbar2 E-6
M:TR105B
.MInj E12
A:EMT3HN
.E_760 pimm
G:TURN14
oMau
A:EMT3VN
.E_864 pimm
A:STCKAV
oE_864 Secs
06 08:00
06 14:00
06 20:00
07 02:00
07 08:00
T1 = Th 06-JAN-2011 08:00:00
T2 = Fr 07-JAN-2011 08:00:00


GxPA 1 Shots to Recycler
D:BPMI10 McG
Mean 23883
+/- 5.7131
StdDev 1000.1
Points 30646
A:STAKRT mA/h
Mean 20.071
+/- 0.15277
StdDev 6.3578
Points 1732
A:PRDCTN E-6
Mean 20.055
+/- 0.080948
StdDev 2.7818
Points 1181
M:TR105B E12
Mean 7.7484
+/- 0.00082585
StdDev 0.14614
Points 31312
T1=06-JAN-2011 08:00:00
%


Acc to MI Efficiency
Average 97.2022
MI Efficiency
Average 99.5013
MI to RR Transfer Efficiency
Average 96.9326
Acc to RR Transfer
Average 94.2070
105.00
100.00
95.00
90.00
85.00
22561
22567
22573
22579
22585

Column 1 Number_0_Pbar Transfer Shot #	Column 4 Number_3_Transfer Time		Column 21 Number_20_A:I BEAMB sampled on $91 (A:BEAM7), E10	Column 22 Number_21_A:I BEAMB 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 =>				758.00			704.41	92.93%	96.20%	95.47%	91.85%	74	23	5.7973	4.2238	1.9651
	Daily Average =>				379.00			352.21					37	12			
22585	Friday, January 07, 2011	4:39	25.08	6.25	21.45	372.36	392.27	20.28	94.54%	96.53%	97.58%	94.19%	3	1	5.152	3.58	1.986
22584	Friday, January 07, 2011	3:49	25.98	6.61	22.00	353.90	374.35	21.03	95.63%	96.59%	96.61%	93.31%	3	1	5.333	3.727	1.966
22583	Friday, January 07, 2011	3:00	26.44	7.40	21.76	335.51	355.79	20.91	96.11%	96.52%	96.86%	93.49%	3	1	5.446	3.76	1.995
22582	Friday, January 07, 2011	2:09	25.89	6.97	21.59	317.42	337.47	20.71	95.91%	98.53%	97.99%	96.54%	3	1	5.603	3.737	1.972
22581	Friday, January 07, 2011	1:17	25.53	5.77	21.75	299.55	319.83	20.97	96.38%	98.00%	97.68%	95.73%	3	1	4.919	3.187	1.94
22580	Friday, January 07, 2011	0:30	34.14	8.01	28.66	274.90	301.66	27.43	95.72%	97.76%	97.08%	94.90%	3	1	5.167	3.811	1.913
22579	Thursday, January 06, 2011	23:31	173.44	18.82	158.79	138.09	277.45	145.99	91.94%	96.35%	95.27%	91.79%	8	1	9.287	5.649	1.48
22578	Thursday, January 06, 2011	11:20	27.86	4.36	26.01	377.79	401.75	24.58	94.49%	97.02%	96.25%	93.39%	3	1	4.82	3.214	2.078
22577	Thursday, January 06, 2011	10:17	29.57	5.64	26.57	356.10	380.42	25.06	94.32%	96.73%	95.33%	92.22%	3	1	5.433	3.764	2.155
22576	Thursday, January 06, 2011	9:09	29.12	5.47	26.25	334.35	358.31	24.63	93.83%	97.18%	94.84%	92.16%	3	1	5.853	4.059	2.112
22575	Thursday, January 06, 2011	7:38	32.19	4.94	29.27	315.54	336.55	21.64	73.95%	77.19%	75.93%	58.61%	3	1	4.706	3.515	2.049
22574	Thursday, January 06, 2011	6:30	29.78	5.91	26.51	293.17	317.17	24.59	92.77%	96.68%	95.45%	92.28%	3	1	5.434	3.89	2.065
22573	Thursday, January 06, 2011	5:25	27.95	4.69	25.60	270.82	294.50	24.03	93.87%	98.19%	96.68%	94.93%	3	1	5.299	3.615	2.117
22572	Thursday, January 06, 2011	4:22	31.19	6.10	28.30	245.95	271.84	26.53	93.77%	96.04%	95.15%	91.38%	3	1	5.34	3.655	2.085
22571	Thursday, January 06, 2011	3:15	28.46	5.85	25.93	223.09	246.85	24.22	93.42%	95.86%	95.12%	91.18%	3	1	5.65	3.583	2.099
22570	Thursday, January 06, 2011	2:14	25.53	5.14	22.99	202.49	223.75	21.62	94.01%	97.79%	96.79%	94.65%	3	1	5.522	3.519	2.1
22569	Thursday, January 06, 2011	1:11	73.39	4.91	73.01	139.89	203.96	66.96	91.71%	96.19%	95.47%	91.83%	5	1	6.476	4.227	1.977
22568	Thursday, January 06, 2011	1:01	98.20	69.93	28.28	115.57	141.01	25.44	89.97%	95.71%	94.65%	90.59%	1	1	10.431	6.686	1.435
22565	Wednesday, January 05, 2011	17:46	27.46	7.02	23.17	94.87	116.74	22.14	95.54%	97.04%	95.25%	92.43%	3	1	5.886	5.673	2.003
22564	Wednesday, January 05, 2011	16:31	25.43	5.45	22.09	74.12	94.99	21.25	96.21%	98.00%	99.25%	97.27%	3	1	5.358	5.037	1.967
22563	Wednesday, January 05, 2011	14:50	33.52	4.46	29.90	46.04	74.37	28.60	95.65%	98.57%	98.41%	97.00%	3	1	4.821	4.434	1.884
22562	Wednesday, January 05, 2011	13:35	26.90	6.83	22.55	24.87	46.15	21.47	95.25%	99.33%	100.12%	99.45%	3	1	5.689	5.357	1.932
22561	Wednesday, January 05, 2011	12:24	29.85	6.33	25.58	1.26	25.09	24.32	95.10%	97.83%	98.12%	95.99%	3	1	5.713	5.468	1.888