2011-04-12 Tuesday Morning Notes

Tuesday, April 12, 2011
7:39 AM

Stacking and Transfers

- Stacked 25.3mA/hr with a production of 20.8 pbars/Mp with 7.9 Tp on target.
- Unstacked 494E10 in 61 transfers over 20 sets with an average efficiency of 95.6%.
    - This does not include set number 24039 which is missing SDA data.
    - Efficiencies seem to be decreasing.

Operational Happenings

Numbers

- Stacking
    - Pbars stacked: 535.37 E10
    - Time stacking: 23.37 Hr
    - Average stacking rate: 22.90 E10/Hr

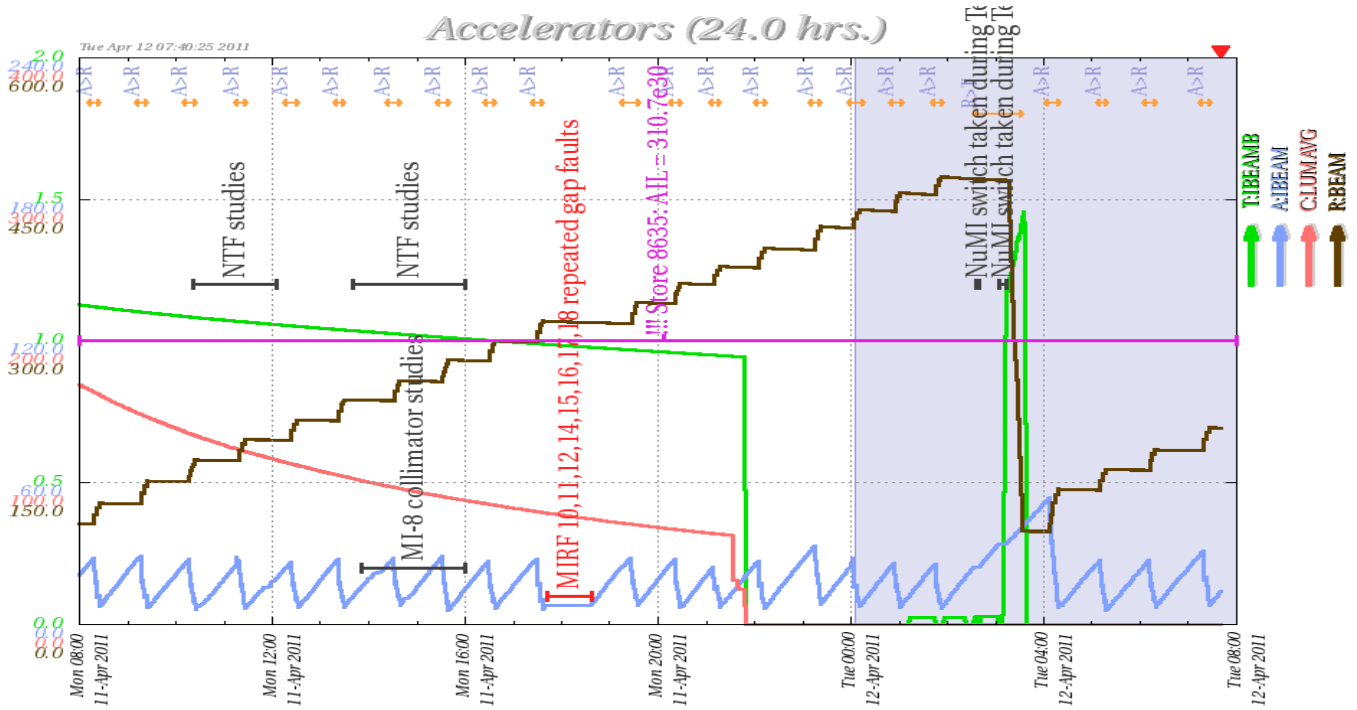
- Uptime
    - Number of pulses while in stacking mode: 36049
    - Number of pulses with beam: 33221
    - Fraction of up pulses was: 92.16%

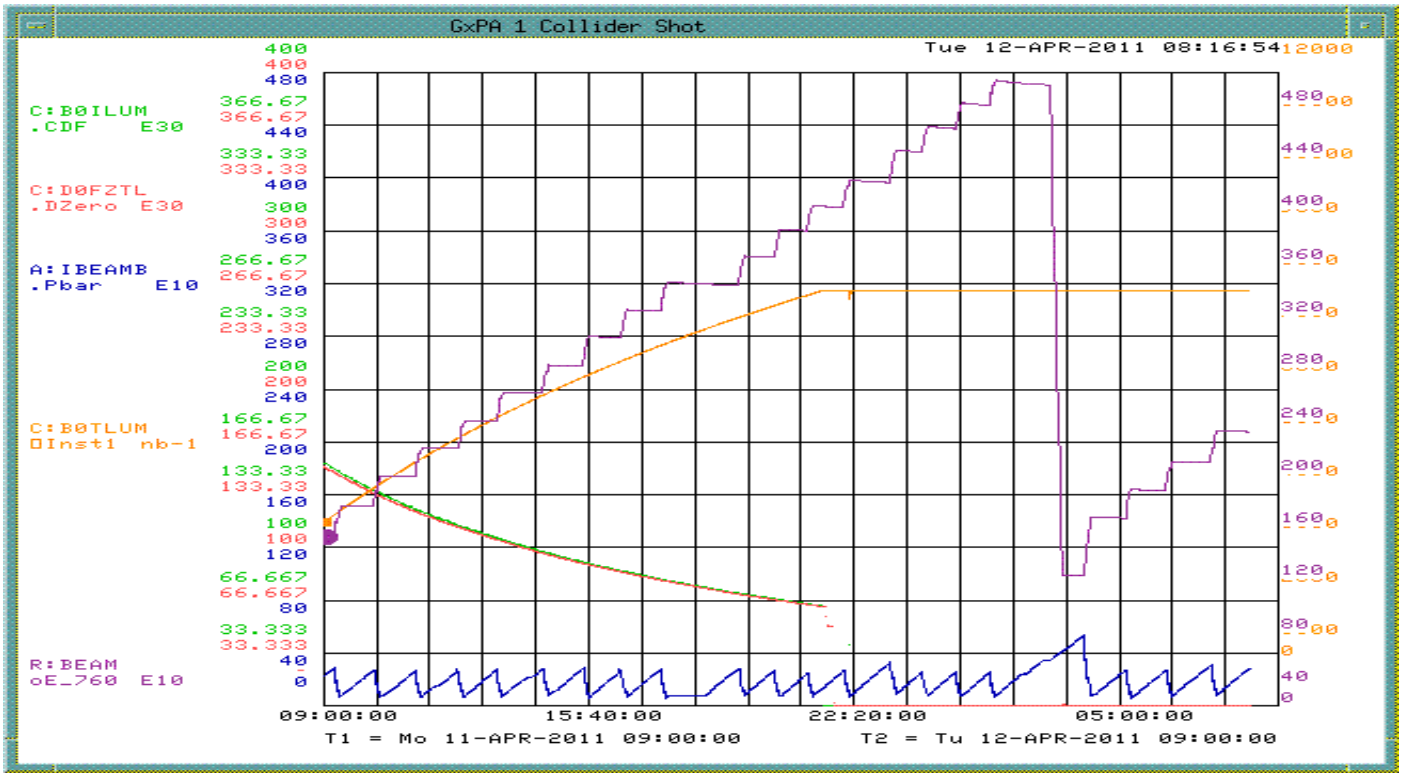
- The uptime's effect on the stacking numbers
    - Corrected time stacking: 21.54 Hr
    - Possible average stacking rate: 24.85 E10/Hr
    - Could have stacked: 580.94 E10/Hr

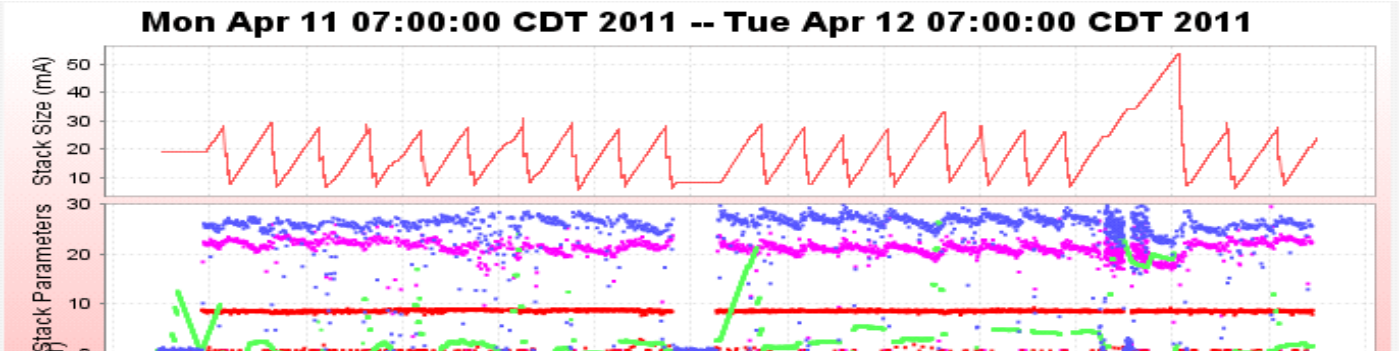
- Recycler Transfers
    - Pbars sent to the Recycler: 528.07 E10
    - Number of transfers : 66
    - Number of transfer sets: 22
    - Average Number of transfer per set: 3.00
    - Time taken to shoot including reverse proton tuneup: 00.23 Hr
    - Transfer efficiency: 94.99%

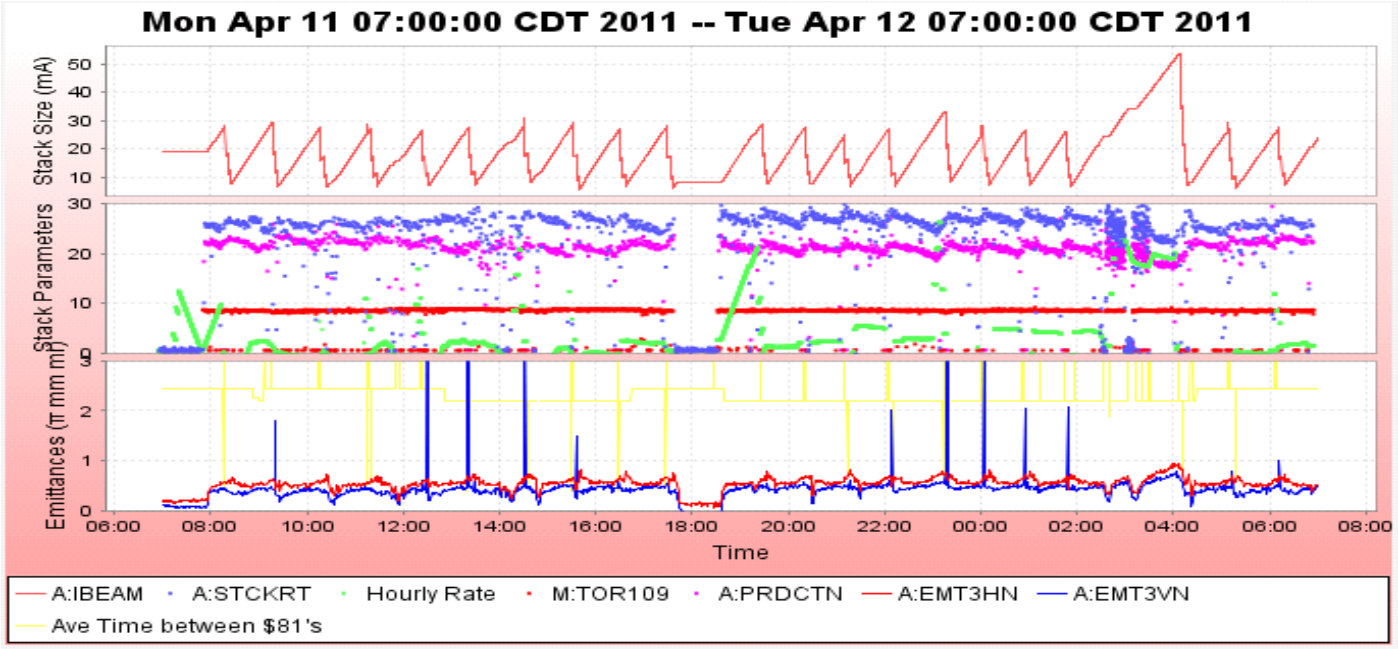
- Other Info
    - Average POT : 7.89 E12
    - Average production: 20.43 pbars/E6 protons

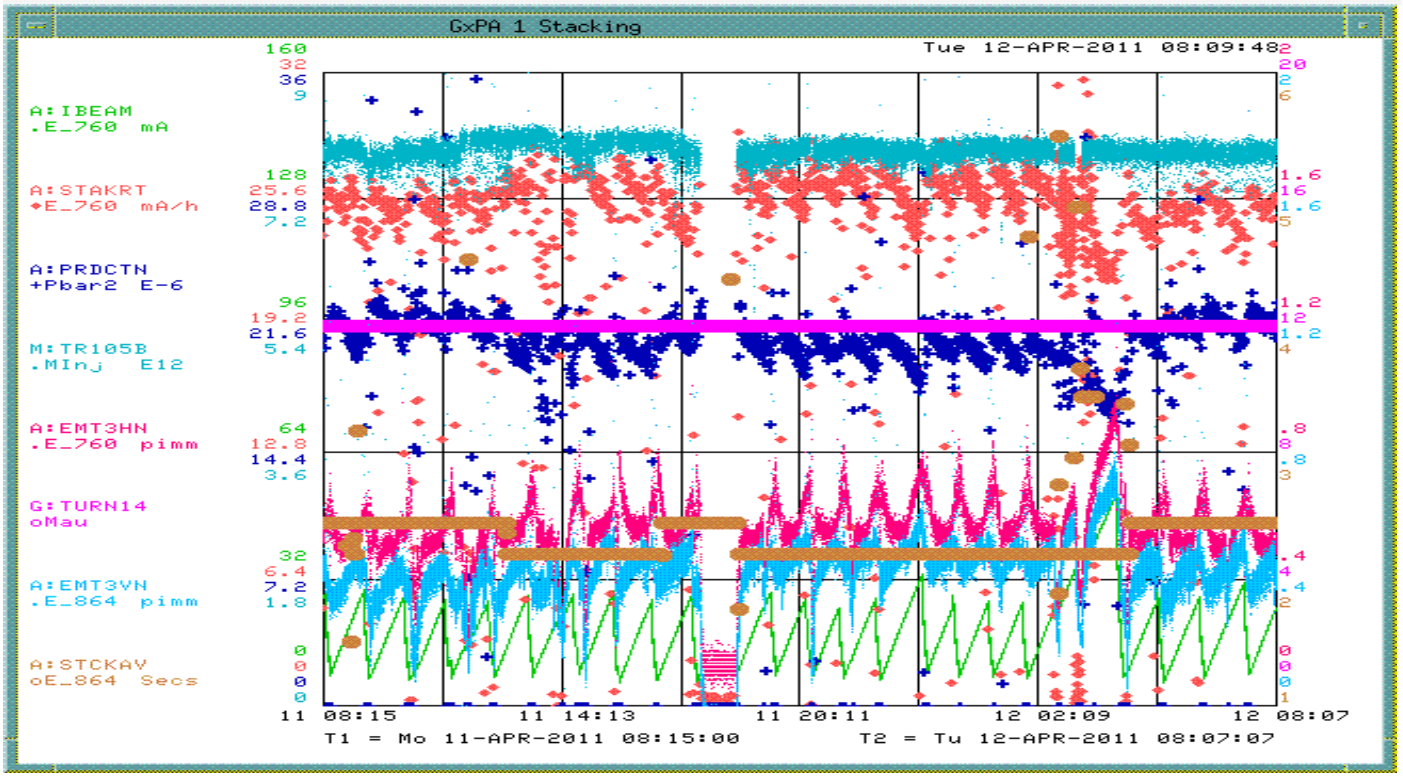
Plots

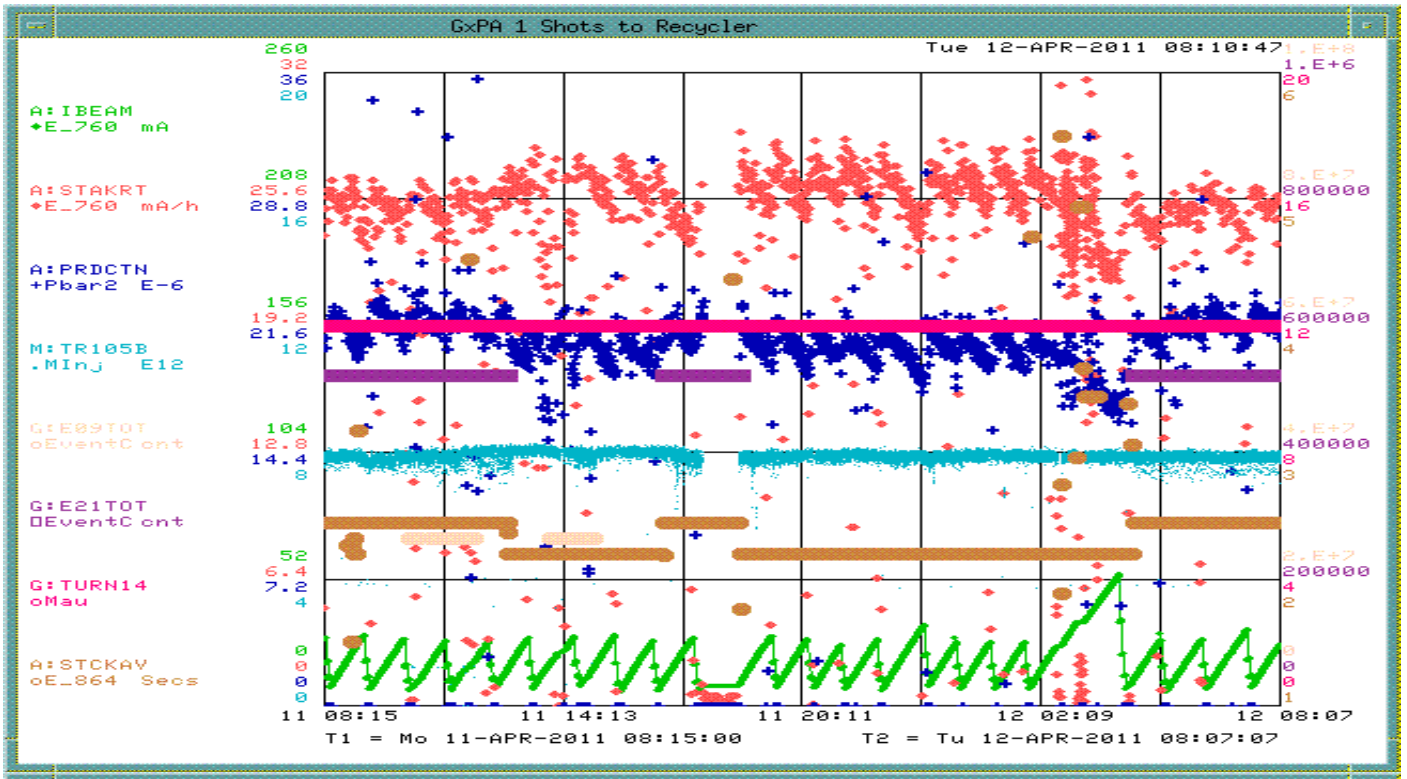

Accelerators (24.0 hrs.)
Tue Apr 12 07:40:25 2011
NTF studies
NTF studies
MI-8 collimator studies
MIRF 10,11,12,14,15,16,17,18 repeated gap faults
!!! Store 8635: AIL = 310.7e30
NuMI switch taken during Tk
NuMI switch taken during Tk
TIBEAMB
AIBEAM
CLUMAVG
RBEAM
Mon 08:00 11-Apr 2011
Mon 12:00 11-Apr 2011
Mon 16:00 11-Apr 2011
Mon 20:00 11-Apr 2011
Tue 00:00 12-Apr 2011
Tue 04:00 12-Apr 2011
Tue 08:00 12-Apr 2011

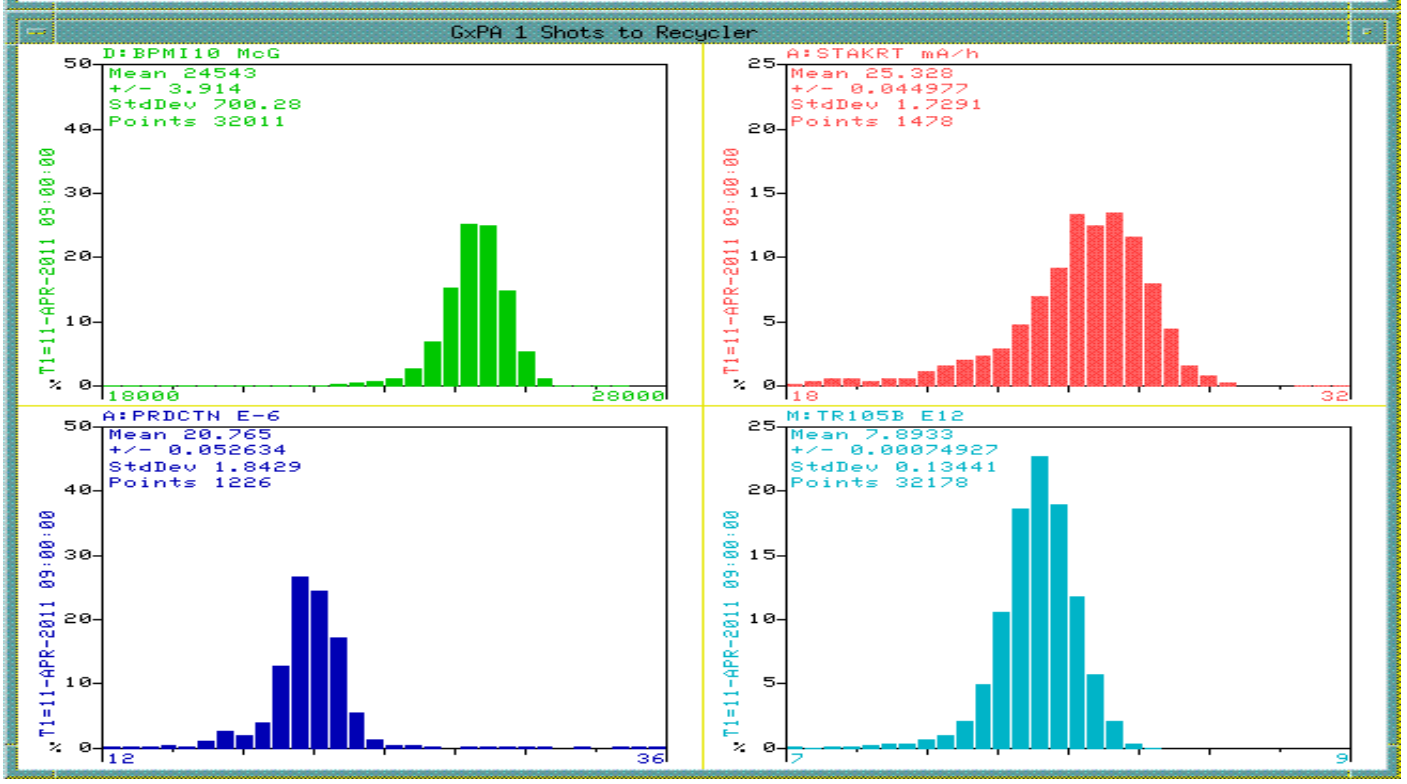

GxPA 1 Collider Shot
Tue 12-APR-2011 08:16:54
C:B0ILUM
.CDF E30
C:D0FZTL
.DZero E30
A:IBEAMB
.Pbar E10
C:B0TLUM
DInst1 nb-1
R:BEAM
oE_760 E10
09:00:00
15:40:00
22:20:00
05:00:00
T1 = Mo 11-APR-2011 09:00:00
T2 = Tu 12-APR-2011 09:00:00

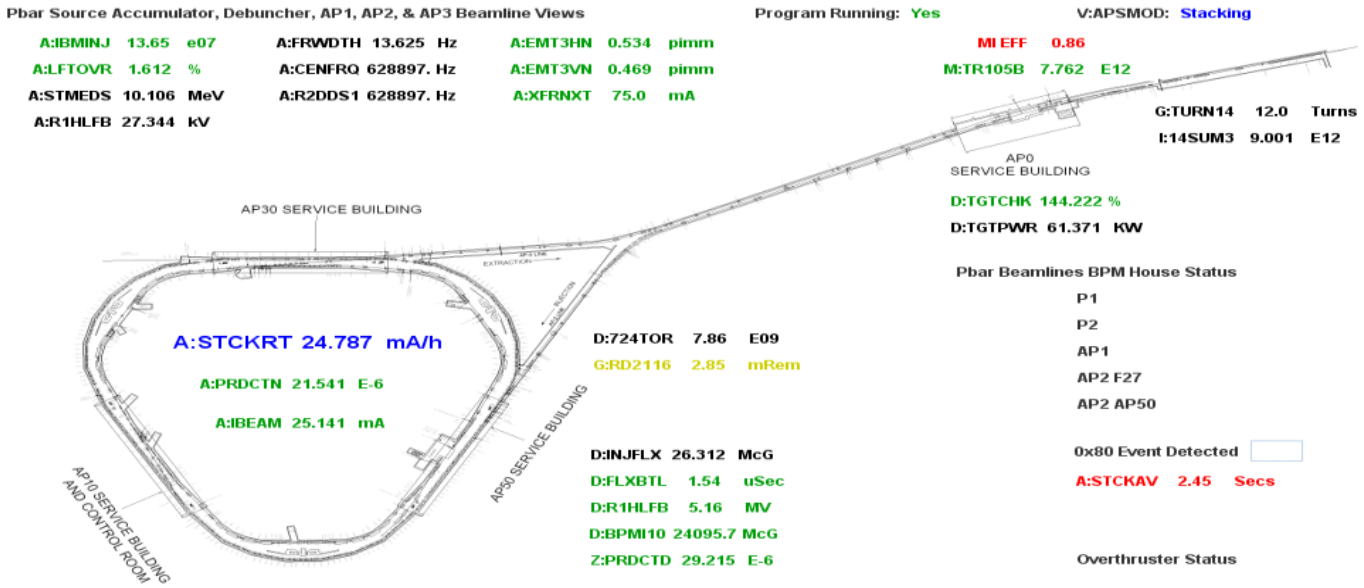

Mon Apr 11 07:00:00 CDT 2011 -- Tue Apr 12 07:00:00 CDT 2011
Stack Size (mA)
Stack Parameters

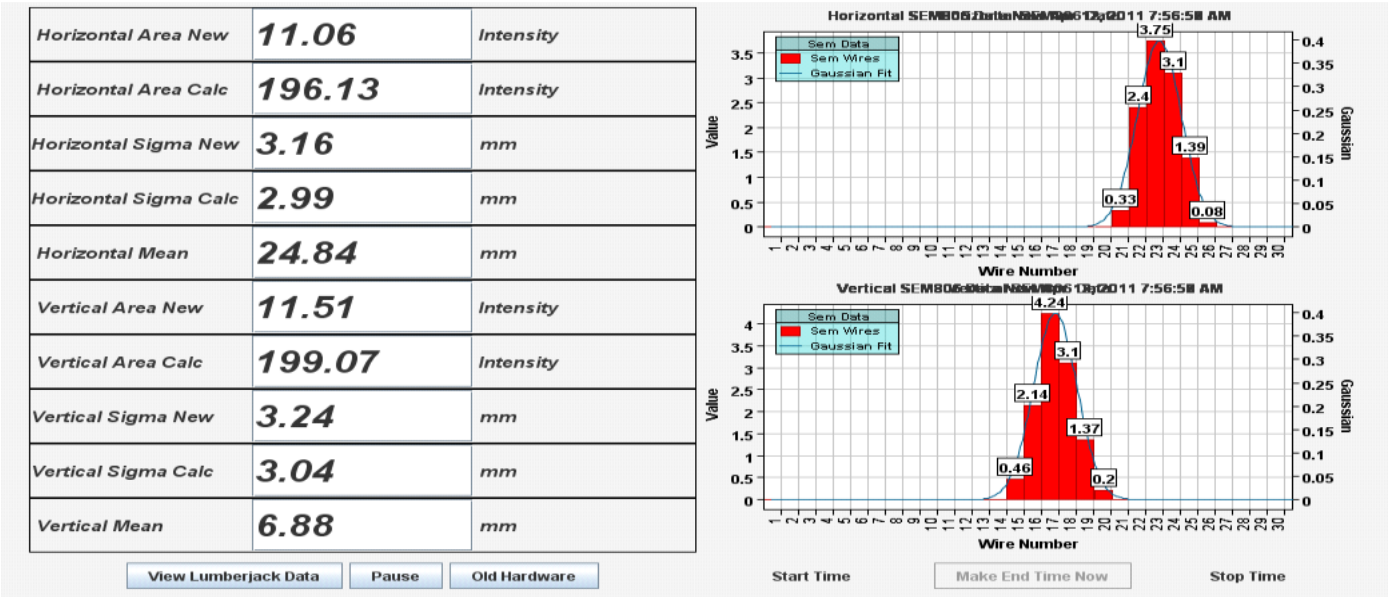

Mon Apr 11 07:00:00 CDT 2011 -- Tue Apr 12 07:00:00 CDT 2011
Stack Size (mA)
Stack Parameters
Emittances (π mm mr)
Time
A:IBEAM
A:STCKRT
Hourly Rate
M:TOR109
A:PRDCTN
A:EMT3HN
A:EMT3VN
Ave Time between $81's


GxPA 1 Stacking
Tue 12-APR-2011 08:09:48
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
11 08:15
11 14:13
11 20:11
12 02:09
12 08:07
T1 = Mo 11-APR-2011 08:15:00
T2 = Tu 12-APR-2011 08:07:07

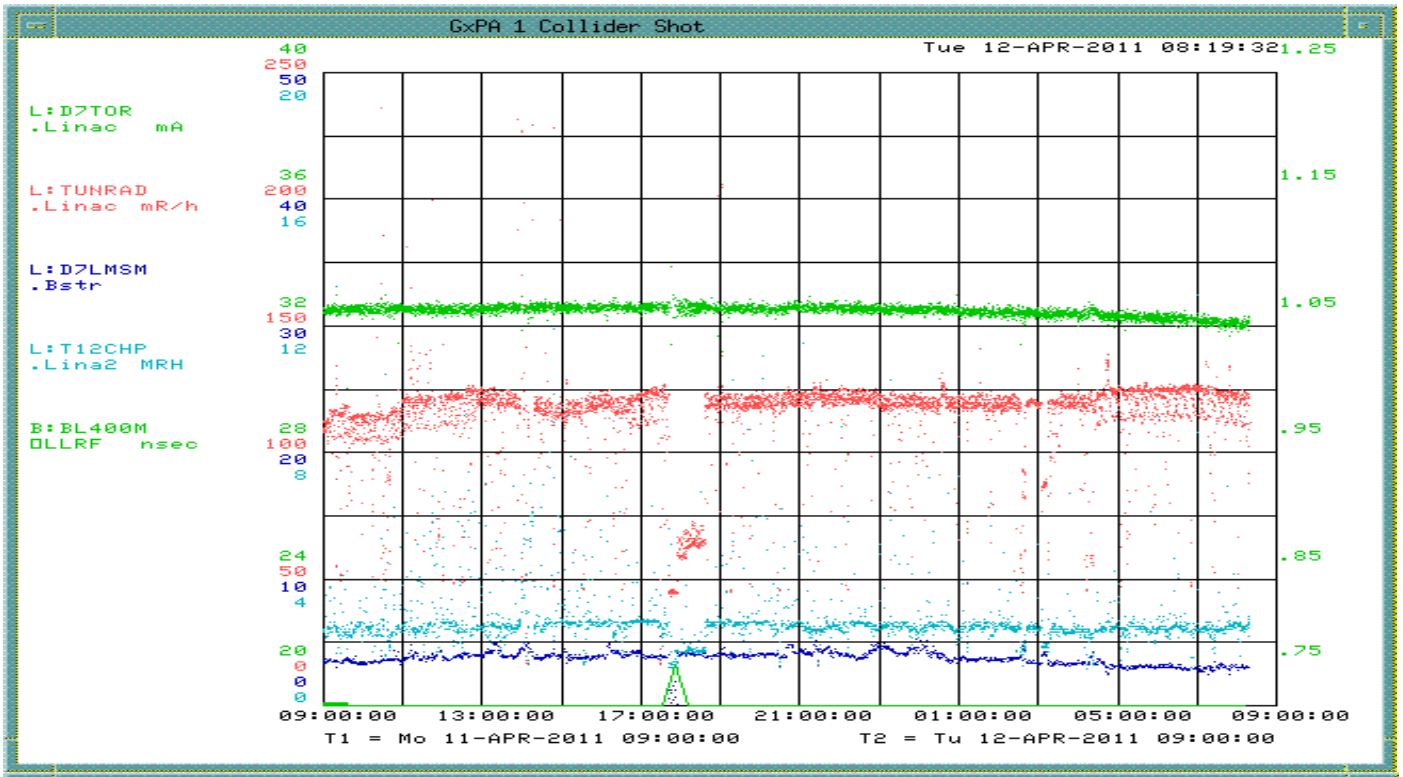

GxPA 1 Shots to Recycler
Tue 12-APR-2011 08:10:47
A:IBEAM
+E_760 mA
A:STAKRT
+E_760 mA/h
A:PRDCTN
+Pbar2 E-6
M:TR105B
.MInj E12
G:E09TOT
oEventC ont
G:E21TOT
OEventC ont
G:TURN14
oMau
A:STCKAV
oE_864 Secs
11 08:15
11 14:13
11 20:11
12 02:09
12 08:07
T1 = Mo 11-APR-2011 08:15:00
T2 = Tu 12-APR-2011 08:07:07

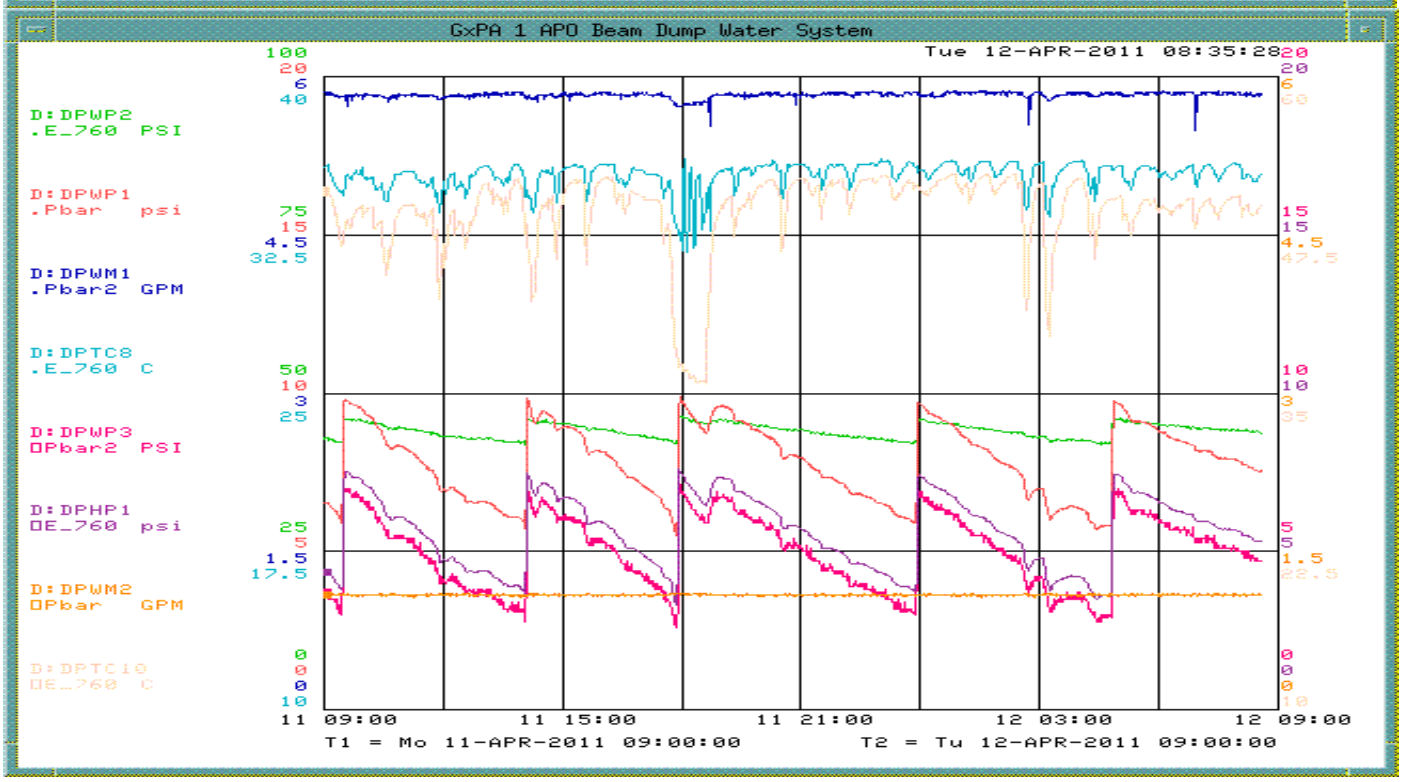

GxPA 1 Shots to Recycler
D:BPMI10 McG
Mean 24543
+/- 3.914
StdDev 700.28
Points 32011
A:STAKRT mA/h
Mean 25.328
+/- 0.044977
StdDev 1.7291
Points 1478
A:PRDCTN E-6
Mean 20.765
+/- 0.052634
StdDev 1.8429
Points 1226
M:TR105B E12
Mean 7.8933
+/- 0.00074927
StdDev 0.13441
Points 32178
% T1=11-APR-2011 09:00:00

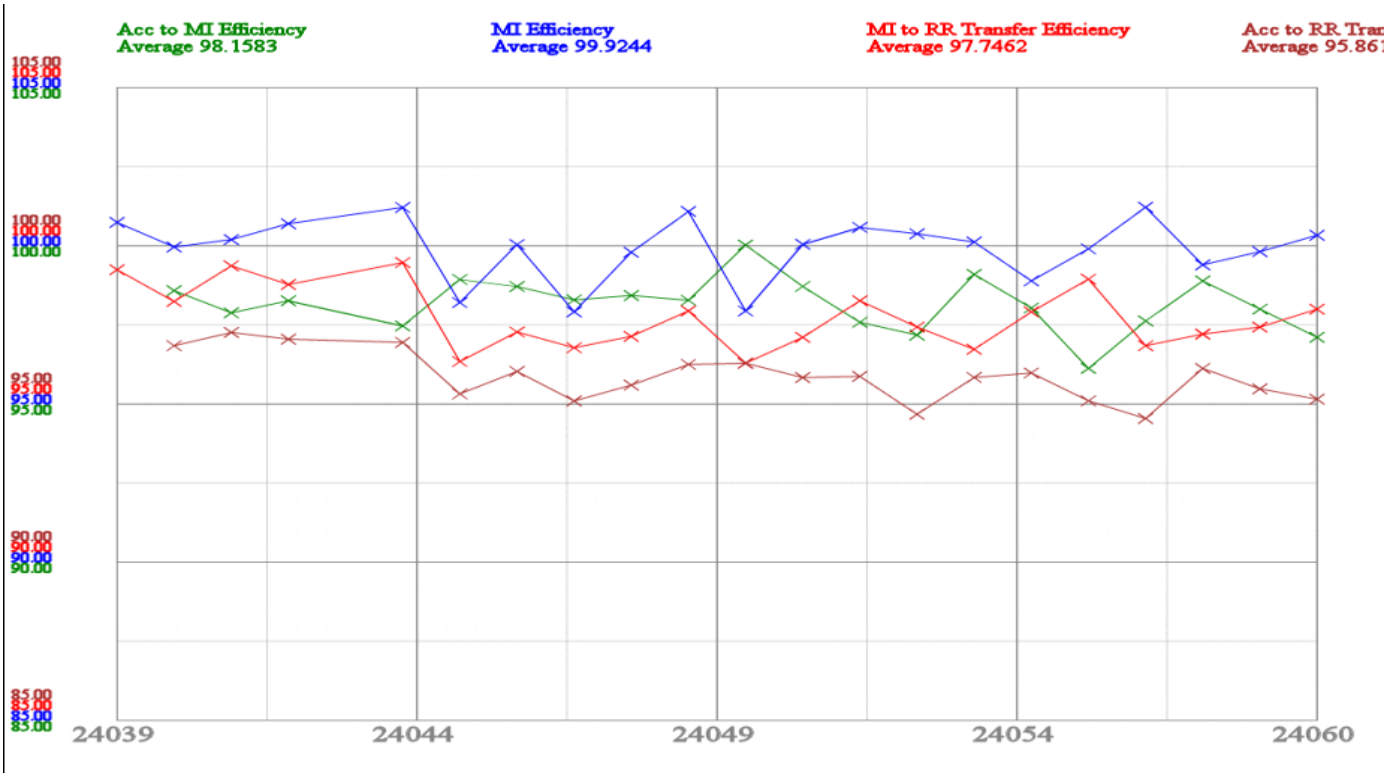




Horizontal Area New	11.06	Intensity
Horizontal Area Calc	196.13	Intensity
Horizontal Sigma New	3.16	mm
Horizontal Sigma Calc	2.99	mm
Horizontal Mean	24.84	mm
Vertical Area New	11.51	Intensity
Vertical Area Calc	199.07	Intensity
Vertical Sigma New	3.24	mm
Vertical Sigma Calc	3.04	mm
Vertical Mean	6.88	mm


GxPA 1 Collider Shot
Tue 12-APR-2011 08:19:32
L:D7TOR
.Linac mA
L:TUNRAD
.Linac mR/h
L:D7LMSM
.Bstr
L:T12CHP
.Lina2 MRH
B:BL400M
OLLRF nsec
09:00:00 13:00:00 17:00:00 21:00:00 01:00:00 05:00:00 09:00:00
T1 = Mo 11-APR-2011 09:00:00
T2 = Tu 12-APR-2011 09:00:00


GxPA 1 APO Beam Dump Water System
Tue 12-APR-2011 08:35:28
D:DPWP2
.E_760 PSI
D:DPWP1
.Pbar psi
D:DPWM1
.Pbar2 GPM
D:DPTC8
.E_760 C
D:DPWP3
OPbar2 PSI
D:DPHP1
OE_760 psi
D:DPWM2
OPbar GPM
D:DPTC10
OE_760 C
11 09:00 11 15:00 11 21:00 12 03:00 12 09:00
T1 = Mo 11-APR-2011 09:00:00
T2 = Tu 12-APR-2011 09:00:00



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 =>				494.30			472.29	95.55%	98.13%	98.09%	96.26%	61	20	5.7746	4.1928	1.9824
	Daily Average =>				494.30			472.29					61	20			
24060	Tuesday, April 12, 2011	7:18	31.29	7.77	26.03	184.37	208.57	24.69	94.87%	97.24%	97.46%	94.77%	3	1	5.743	4.296	1.979
24059	Tuesday, April 12, 2011	6:11	27.45	6.99	23.11	163.44	185.06	22.05	95.40%	98.04%	98.39%	96.46%	3	1	5.763	4.404	1.982
24058	Tuesday, April 12, 2011	5:10	27.10	5.82	23.44	142.27	164.21	22.48	95.93%	98.95%	98.59%	97.55%	3	1	5.334	3.74	1.972
24057	Tuesday, April 12, 2011	4:07	53.88	7.21	49.35	98.48	143.33	46.26	93.75%	97.56%	98.45%	96.05%	4	1	6.461	4.434	1.914
24056	Tuesday, April 12, 2011	1:45	26.04	6.72	21.81	454.76	474.56	20.79	95.35%	96.61%	96.11%	92.85%	3	1	5.776	4.197	2.004
24055	Tuesday, April 12, 2011	0:54	26.36	7.12	21.84	437.40	457.56	20.97	96.02%	98.15%	97.58%	95.78%	3	1	6.019	4.342	1.986
24054	Tuesday, April 12, 2011	0:03	25.99	7.23	21.40	419.79	439.63	20.49	95.79%	98.64%	98.51%	97.18%	3	1	5.921	4.457	2.038
24053	Monday, April 11, 2011	23:15	33.30	8.37	27.38	396.52	421.55	25.87	94.48%	97.35%	98.05%	95.45%	3	1	6.408	4.879	1.984
24052	Monday, April 11, 2011	22:05	27.20	6.43	23.04	377.64	398.90	22.01	95.54%	97.48%	98.35%	95.87%	3	1	5.724	4.329	1.98
24051	Monday, April 11, 2011	21:10	24.85	6.89	20.59	360.12	379.36	19.76	95.95%	99.20%	99.04%	98.25%	3	1	5.942	4.519	2.009
24050	Monday, April 11, 2011	20:20	27.64	7.48	22.77	339.94	361.32	21.90	96.17%	99.51%	97.60%	97.12%	3	1	6.311	4.429	2.005
24049	Monday, April 11, 2011	19:27	28.75	7.57	23.74	318.73	341.11	22.85	96.25%	98.40%	99.31%	97.72%	3	1	5.884	4.387	1.983
24048	Monday, April 11, 2011	17:29	28.06	5.96	24.05	299.23	321.39	22.85	94.99%	98.60%	97.73%	96.37%	3	1	5.334	4.044	1.956
24047	Monday, April 11, 2011	16:29	27.01	6.45	23.00	279.25	300.36	21.76	94.63%	98.38%	97.39%	95.81%	3	1	6.022	4.058	2.006
24046	Monday, April 11, 2011	15:32	29.09	5.72	24.87	257.21	280.28	23.75	95.48%	98.60%	98.93%	97.55%	3	1	5.072	3.828	1.976
24045	Monday, April 11, 2011	14:31	28.41	8.02	23.13	237.05	258.36	21.93	94.84%	98.67%	97.30%	96.01%	3	1	5.998	4.425	1.994
24044	Monday, April 11, 2011	13:21	27.80	7.05	23.27	215.80	237.96	22.53	96.82%	97.56%	98.20%	95.80%	3	1	5.654	3.993	1.97
24042	Monday, April 11, 2011	11:19	26.98	6.74	22.90	173.85	195.81	22.24	97.09%	97.97%	98.05%	96.06%	3	1	5.456	3.779	1.982
24041	Monday, April 11, 2011	10:16	27.64	6.40	23.88	151.39	174.32	23.20	97.14%	97.80%	98.11%	95.95%	3	1	5.207	3.622	1.948
24040	Monday, April 11, 2011	9:16	29.31	6.91	24.71	128.20	151.82	23.91	96.75%	98.71%	98.25%	96.98%	3	1	5.463	3.693	1.98

Accumulator to Recycler Transfer Table - Units E10

Accumulator to Recycler Summary Pbar Transfer Shot: 24039 Recycler Shot: 22803

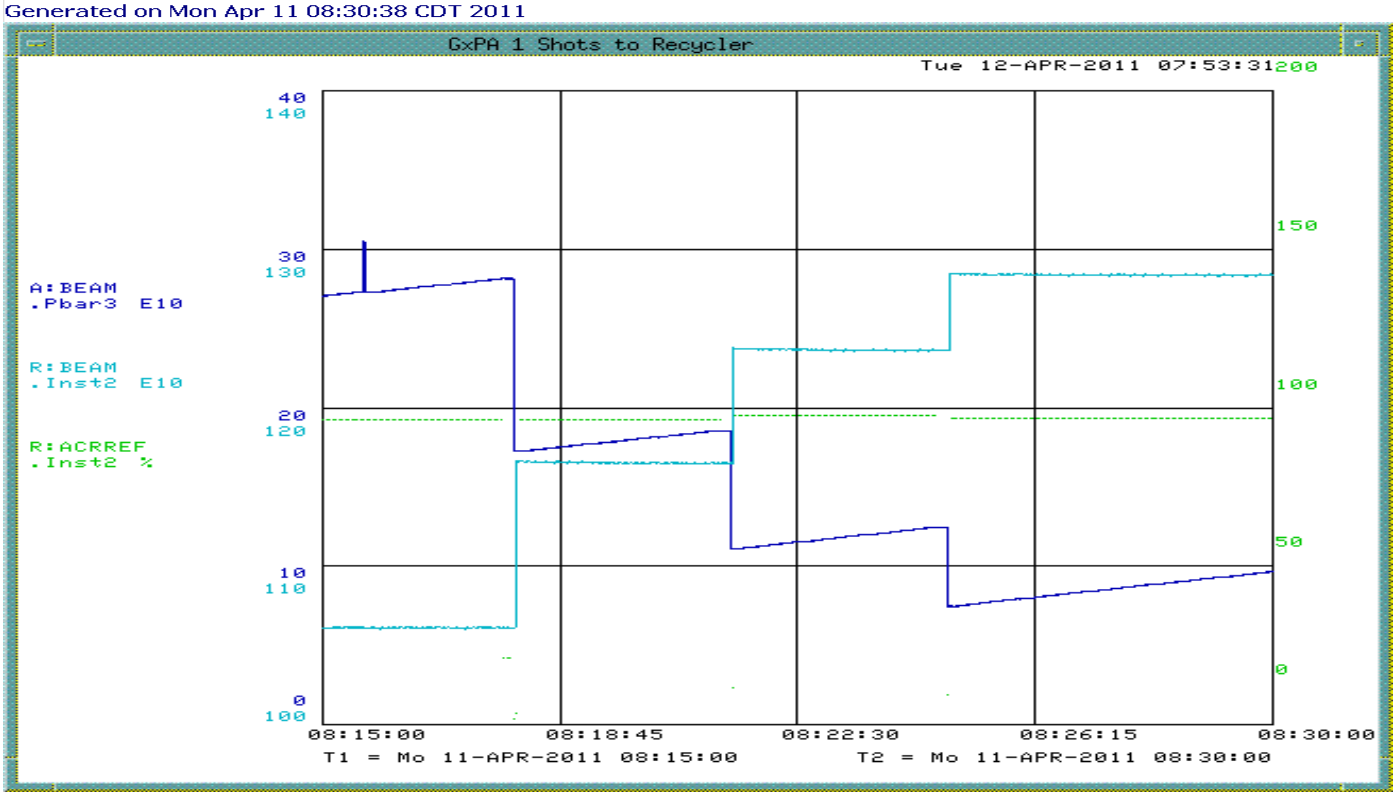
Pbar View

Description	Transfer 1	Transfer 2	Transfer 3	Sum / Average	Units
A:IBEAMB sampled on $91 (A:BEAM7)	28.175	18.568	12.477		E10
A:IBEAMB sampled on $94 (A:BEAM9)	17.244	11.139		E10	
Pbars unstacked (transfer)	java.lang.RuntimeException: different length of args: 3, 2	?	E10		
MI DCCT SMALL BEAM (I:BEAM2D[0])	10.730	7.301	4.793	22.824	E10
I:BEAM2D[5]	10.787	7.360	4.834		E10
R:BEAMS (R:BEAME0[0]) pre xfer	106.135	116.500	123.612		E10
R:BEAM (R:BEAME0[1]) post xfer	116.654	123.740	128.430		E10
Rec. Delta	10.518	7.240	4.818	22.577	E10
Accumulator to MI Transfer Efficiency at Injection	java.lang.RuntimeException: different length of args: 3, 2	?	%		
MI Efficiency	100.531	100.811	100.865	100.736	%
MI to RR Transfer Efficiency	98.032	99.160	100.532	99.241	%
Accumulator to Recycler transfer eff	java.lang.RuntimeException: different length of args: 3, 2	?	%		
Fractional xfer loss in MI	-.057	-.059	-.041	-.158	E10
Loss between xfers in RR		.153	.129	.282	E10

Summary

Description	Value	Units	Comments
Pbars unstacked (sum)	?	E10	(A:BEAM7 - A:BEAM9) Sum over Sets
Pbars received by RR (beg-end)	22.295	E10	R:BEAME0[1] @ Last Set - R:BEAME0[0] @ First Set
Total transfer efficency	?	%	Pbars received by RR / Pbars unstacked

Generated on Mon Apr 11 08:30:38 CDT 2011



Transfer with missing SDA data