2010-05-12 Wednesday Morning Summary

Wednesday, May 12, 2010
7:16 AM

Stacking

- Corrected <stack rate> = 26.6 mA/hr
- <Production> = 27

Issues

- DRF1-1 phase drifting
- D:EKIK module #2 timing drift
  - New parameter D:EKTUNE
- D:IKIK module #3 drifting

Transfers

- Unstacked 563e10 in 65 transfers over 21 sets with an average efficiency of 94.6%

Studies

- Stacktail Phasing with 30e10 - looking for opportunistic non-stacking time
- Stacktail tank moving - parasitic

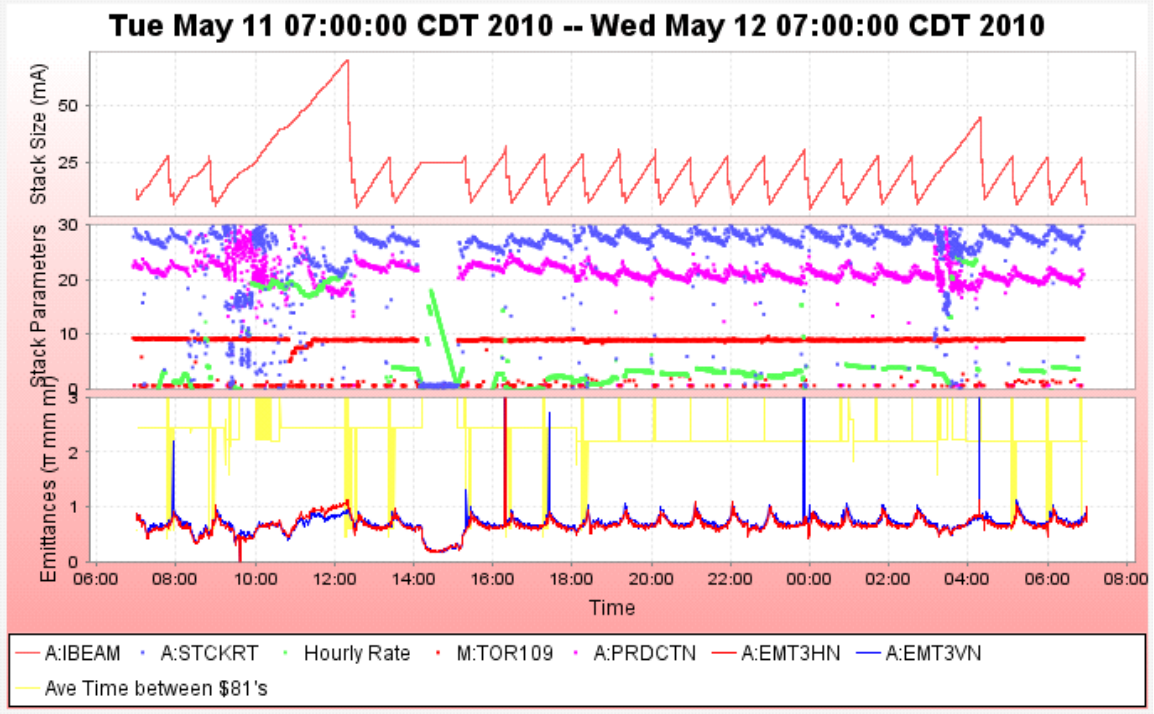
Column 1 Number_0_Pbar Transfer Shot #	Column 4 Number_3_Transfer Time		Column 21 Number_20_A:IBEAMB sampled on $91 (A:BEAM7), E10	Column 22 Number_21_A:IBEAMB sampled on $94 (A:BEAM9), E10	Unstacked (mA)	Column 23 Number_22_R:BEAMS (R:BEAME0[0]) pre xfer E10	Column 24 Number_23_R:BEAM (R:BEAME0[1]) post xfer, E10	Stashed	Acc to RR Eff	Acc to MI Eff	Acc to MI2 Eff	Transfers	Sets	Column 5 Number_4_Acc Horizontal Emittance	Column 6 Number_5_Acc Vertical Emittance	Column 8 Number_7_Acc Longitudinal Emittance
	Totals =>				563.85			533.51	94.62%	97.24%	97.52%	65	21	6.4518	6.6257	1.9361
18994	Wednesday, May 12, 2010	6:52	26.72	6.50	22.95	88.09	109.87	21.84	95.16%	96.34%	96.74%	3	1	6.499	6.654	1.957
18993	Wednesday, May 12, 2010	6:00	27.08	6.30	23.47	65.96	88.23	22.31	95.05%	96.65%	96.87%	3	1	6.556	6.736	1.96
18992	Wednesday, May 12, 2010	5:06	27.15	5.84	23.98	43.40	66.07	22.81	95.10%	97.80%	96.99%	3	1	6.301	6.653	1.927
18991	Wednesday, May 12, 2010	4:18	44.24	8.42	38.32	7.76	43.52	35.88	93.62%	97.76%	98.28%	3	1	7.168	7.037	1.898
18990	Wednesday, May 12, 2010	2:35	27.29	6.18	23.82	359.83	382.08	22.52	94.53%	97.51%	97.91%	3	1	6.612	6.883	1.96
18989	Wednesday, May 12, 2010	1:42	27.23	6.21	23.75	338.62	360.94	22.50	94.75%	96.10%	95.27%	3	1	6.643	6.855	1.962
18988	Wednesday, May 12, 2010	0:48	26.37	5.89	23.18	317.66	339.55	22.20	95.78%	97.65%	98.29%	3	1	6.581	6.955	1.936
18987	Tuesday, May 11, 2010	23:53	30.35	4.26	27.40	292.54	318.46	26.08	95.18%	97.19%	97.27%	3	1	5.689	5.451	1.851
18986	Tuesday, May 11, 2010	22:51	27.39	5.83	24.02	270.36	293.23	23.07	96.05%	97.59%	98.61%	3	1	6.289	6.581	1.931
18985	Tuesday, May 11, 2010	21:55	27.56	6.15	24.10	247.88	270.86	23.11	95.92%	97.07%	97.49%	3	1	6.505	6.788	1.958
18984	Tuesday, May 11, 2010	20:59	26.95	5.75	23.86	225.68	248.42	22.89	95.97%	97.22%	97.26%	3	1	6.528	6.707	1.918
18983	Tuesday, May 11, 2010	20:06	27.97	5.96	24.45	202.70	226.10	23.48	96.03%	97.82%	98.79%	3	1	6.517	6.509	1.895
18982	Tuesday, May 11, 2010	19:12	28.19	6.67	24.25	180.08	203.12	23.14	95.44%	97.81%	97.41%	3	1	6.75	6.995	1.975
18981	Tuesday, May 11, 2010	18:16	28.56	6.87	24.29	157.50	180.49	23.12	95.18%	96.97%	97.98%	3	1	6.472	6.725	1.999
18980	Tuesday, May 11, 2010	17:17	28.26	6.47	24.55	134.50	157.72	23.32	94.99%	98.24%	98.50%	3	1	6.661	6.728	1.954
18979	Tuesday, May 11, 2010	16:20	29.98	6.71	25.90	110.14	134.64	24.62	95.04%	97.71%	97.95%	3	1	6.199	6.511	1.864
18978	Tuesday, May 11, 2010	15:19	27.40	6.98	23.01	88.37	110.29	22.02	95.67%	97.07%	98.28%	3	1	5.85	6.404	1.961
18977	Tuesday, May 11, 2010	13:23	27.03	6.83	22.97	66.93	88.61	21.72	94.56%	97.92%	98.41%	3	1	6.288	6.768	1.971
18976	Tuesday, May 11, 2010	12:20	69.72	4.85	69.07	5.00	67.15	62.55	90.57%	95.57%	95.71%	5	1	7.302	6.717	1.892
18975	Tuesday, May 11, 2010	8:51	25.18	5.55	22.32	367.55	388.44	21.21	95.02%	97.93%	98.15%	3	1	5.826	5.995	1.947
18974	Tuesday, May 11, 2010	7:48	27.75	6.35	24.20	346.13	368.91	23.13	95.56%	98.95%	98.71%	3	1	6.252	6.487	1.943

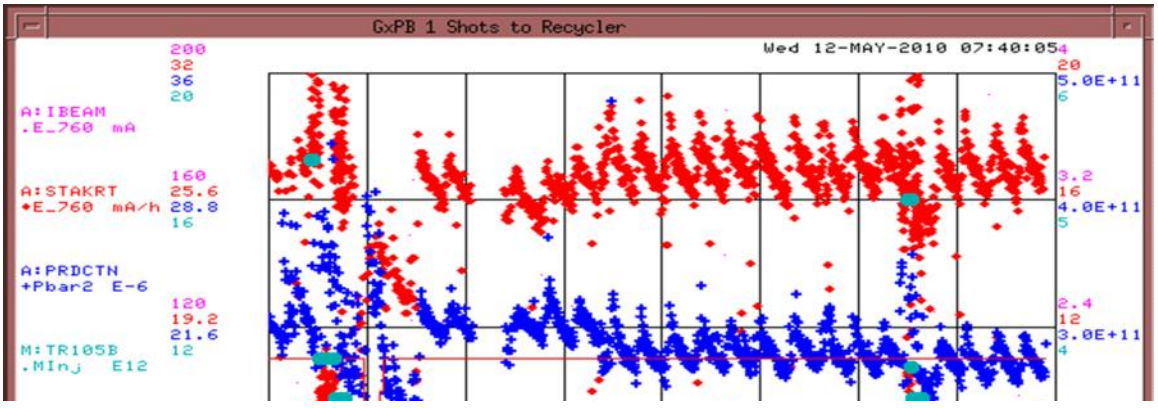
The Numbers

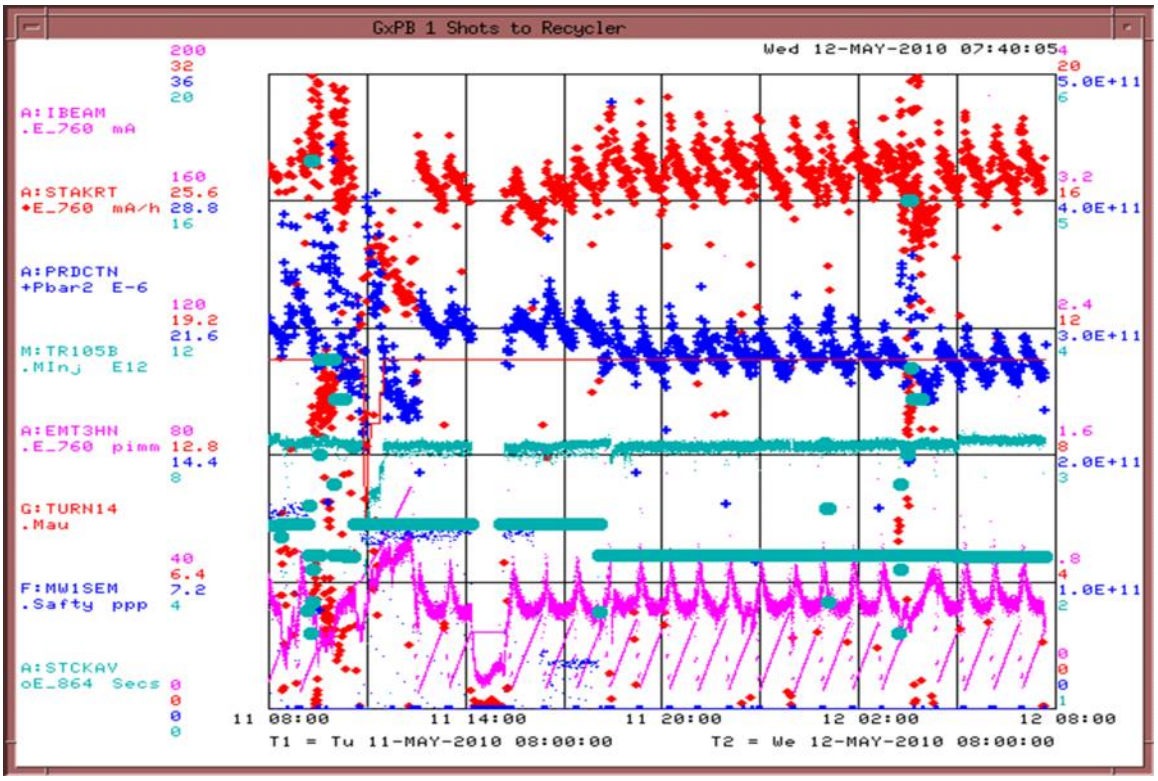
- Al's Numbers
  - Stacking
    - Pbars stacked: 568.07 E10
    - Time stacking: 22.81 Hr
    - Average stacking rate: 24.91 E10/Hr

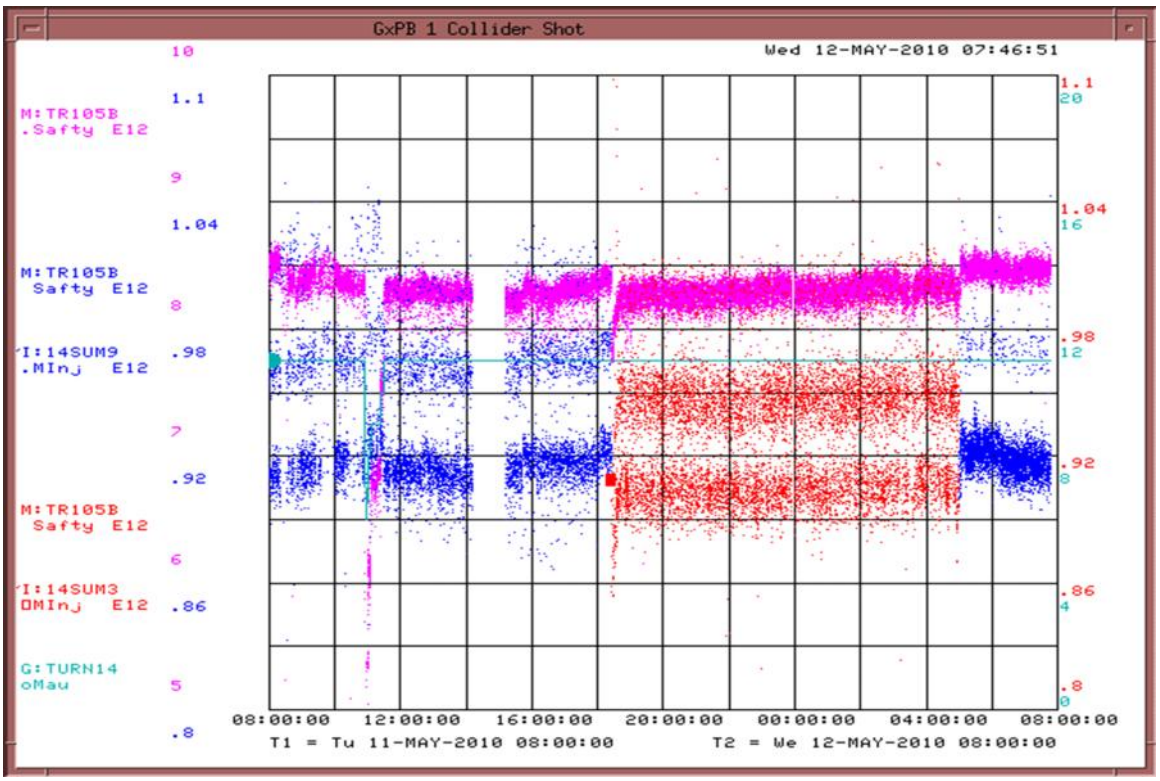
- Uptime
  - Number of pulses while in stacking mode: 34985
  - Number of pulses with beam: 33076
  - Fraction of up pulses was: 94.54%
- The uptime's effect on the stacking numbers
  - Corrected time stacking: 21.56 Hr
  - Possible average stacking rate: 26.34 E10/Hr
  - Could have stacked: 600.86 E10/Hr
- Recycler Transfers
  - Pbars sent to the Recycler: 567.16 E10
  - Number of transfers : 66
  - Number of transfer sets: 21
  - Average Number of transfer per set: 3.14
  - Time taken to shoot including reverse proton tuneup: 00.23 Hr
  - Transfer efficiency: 94.60%
- Other Info
  - Average POT : 8.29 E12
  - Average production: 20.72 pbars/E6 protons

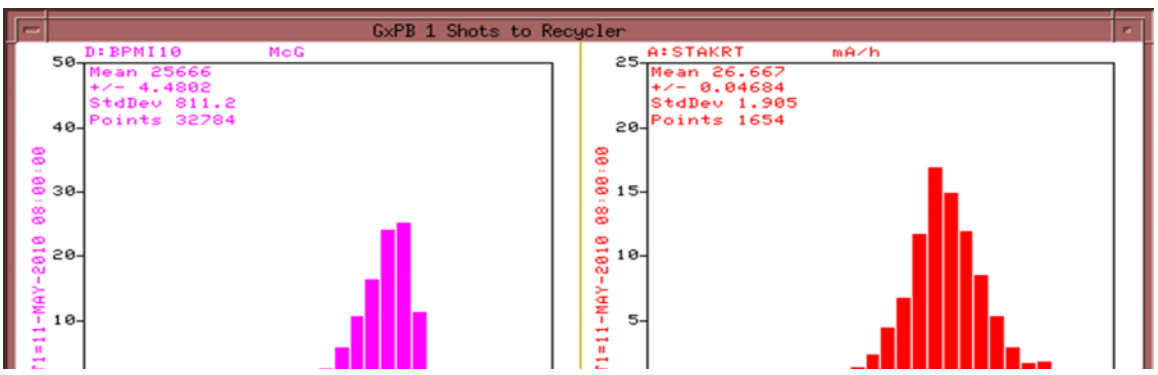
Plots

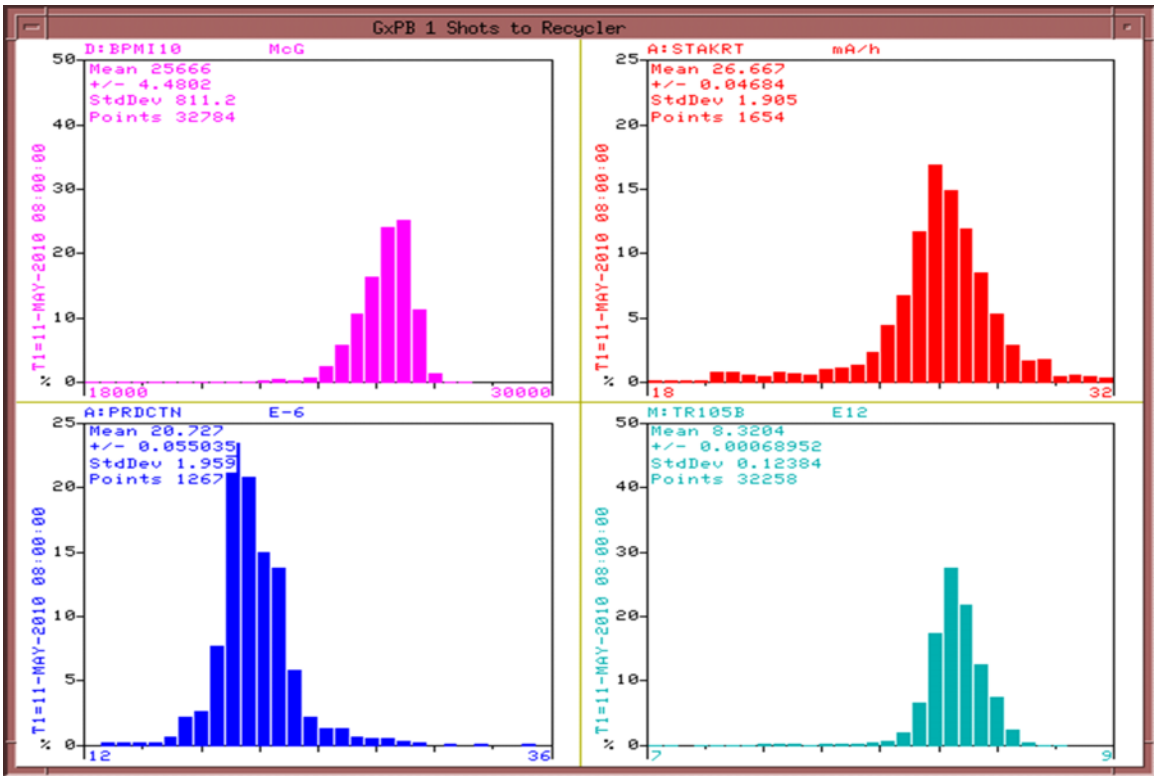


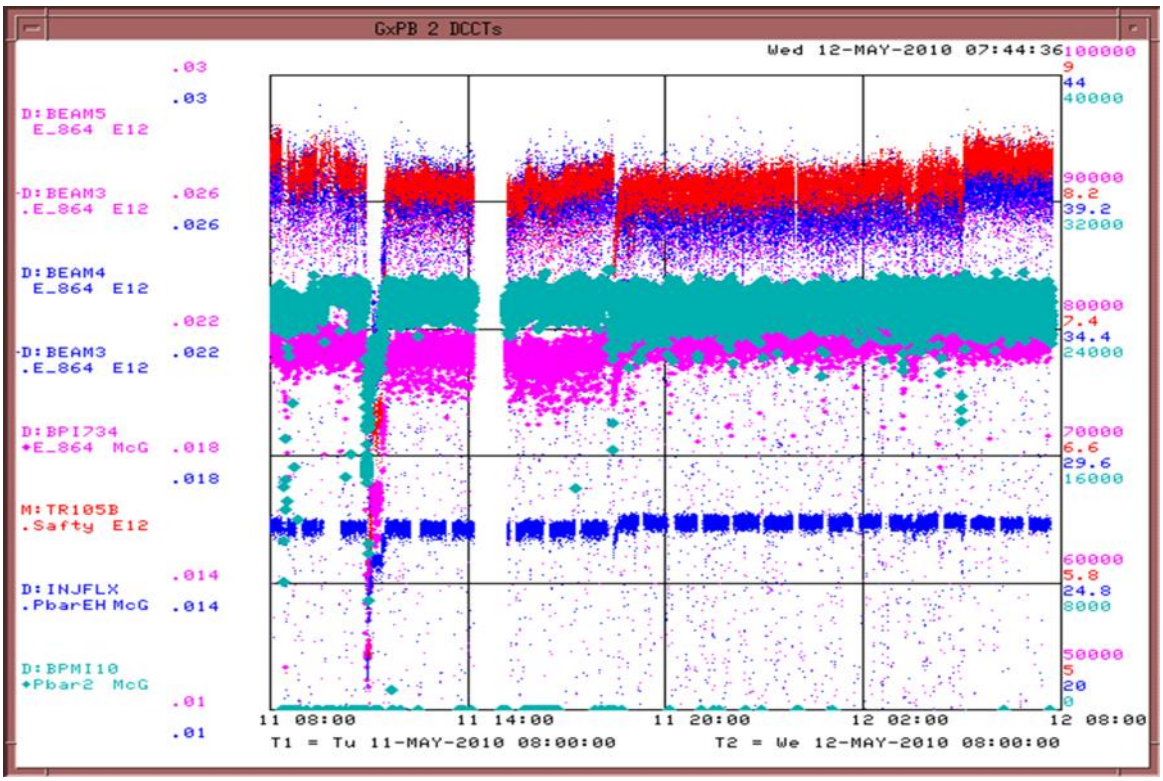


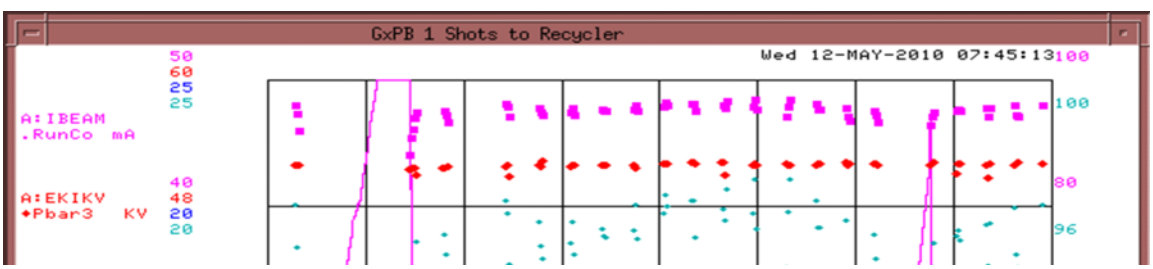

GxPB 1 Shots to Recycler
Wed 12-MAY-2010 07:40:05
A:IBEAM
.E_760 mA
A:STAKRT
+E_760 mA/h
A:PRDCTN
+Pbar2 E-6
M:TR105B
.MInj E12
A:EMT3HN
.E_760 pimm
G:TURN14
.Mau
F:MW1SEM
.Safty ppp
A:STCKAV
oE_864 Secs
11 08:00
11 14:00
11 20:00
12 02:00
12 08:00
T1 = Tu 11-MAY-2010 08:00:00
T2 = We 12-MAY-2010 08:00:00

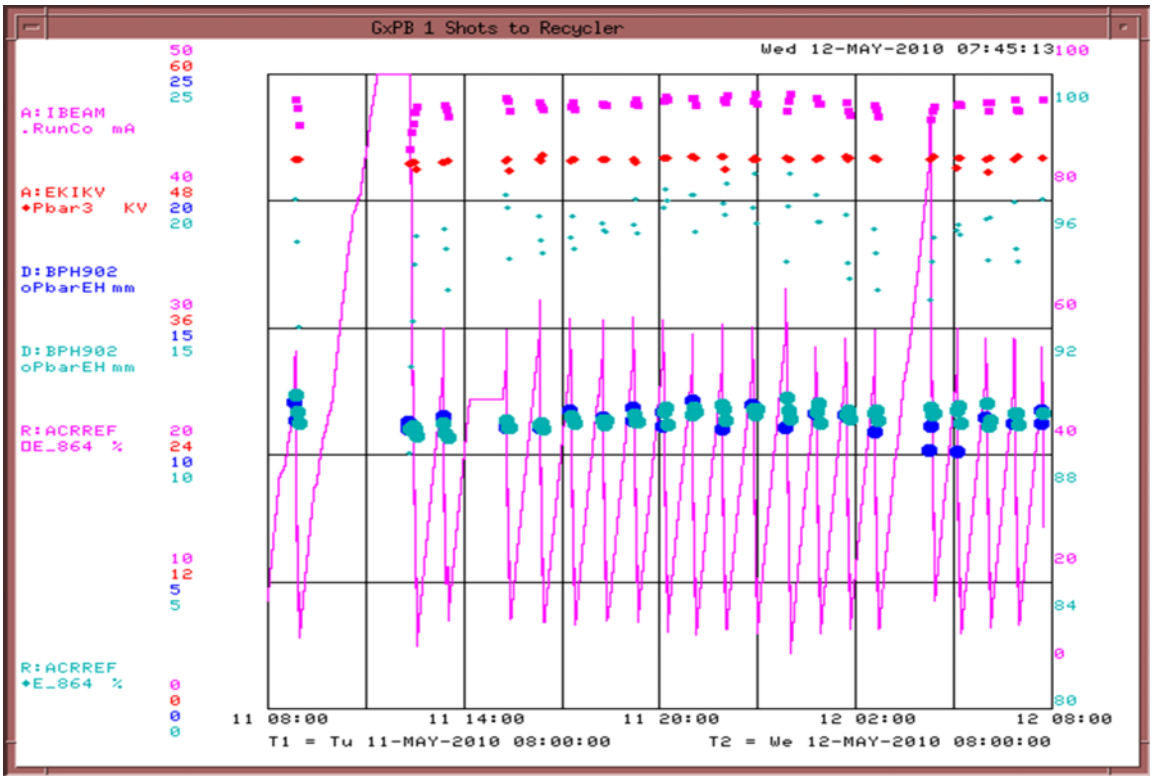

GxPB 1 Collider Shot
Wed 12-MAY-2010 07:46:51
M:TR105B
.Safty E12
M:TR105B
Safty E12
I:14SUM9
.MInj E12
M:TR105B
Safty E12
I:14SUM3
MInj E12
G:TURN14
oMau
08:00:00
12:00:00
16:00:00
20:00:00
00:00:00
04:00:00
08:00:00
T1 = Tu 11-MAY-2010 08:00:00
T2 = We 12-MAY-2010 08:00:00

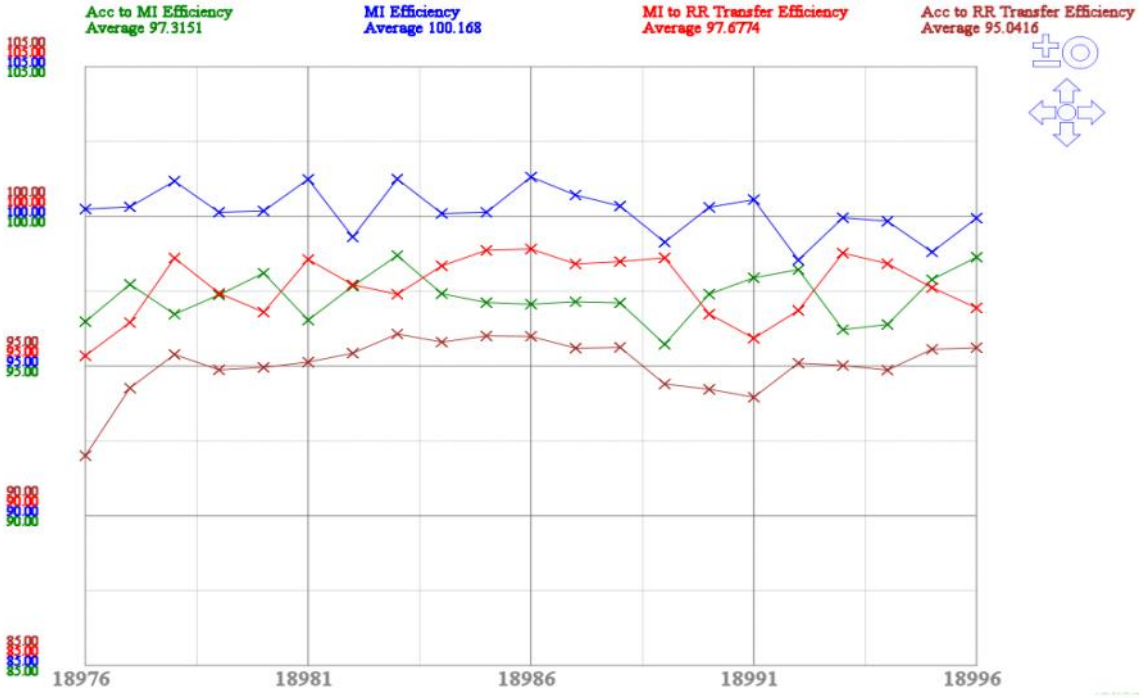

GxPB 1 Shots to Recycler
D:BPMI10 MeG
Mean 25666
+/- 4.4802
StdDev 811.2
Points 32784
A:STAKRT mA/h
Mean 26.667
+/- 0.04684
StdDev 1.905
Points 1654
T1=11-MAY-2010 08:00:00

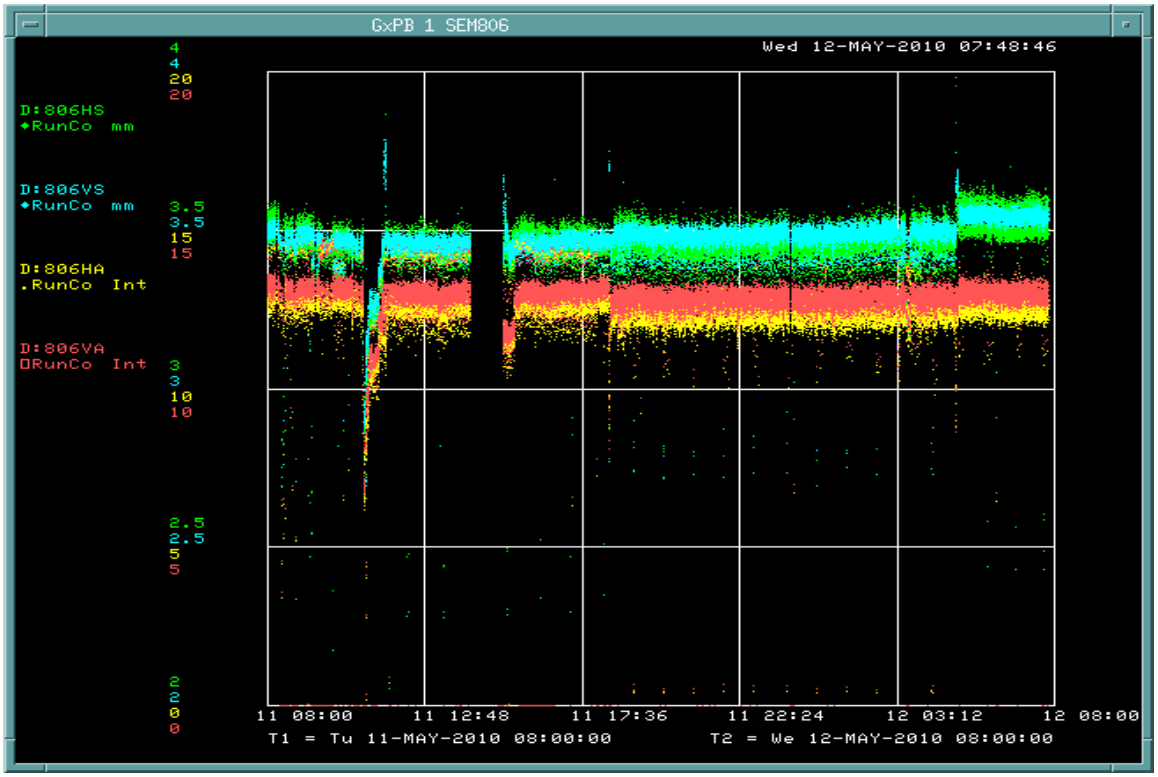

GxPB 1 Shots to Recycler
D:BPMI10 McG
Mean 25666
+/- 4.4802
StdDev 811.2
Points 32784
A:STAKRT mA/h
Mean 26.667
+/- 0.04684
StdDev 1.905
Points 1654
A:PRDCTN E-6
Mean 20.727
+/- 0.055035
StdDev 1.955
Points 1267
M:TR105B E12
Mean 8.3204
+/- 0.00068952
StdDev 0.12384
Points 32258
T1=11-MAY-2010 08:00:00

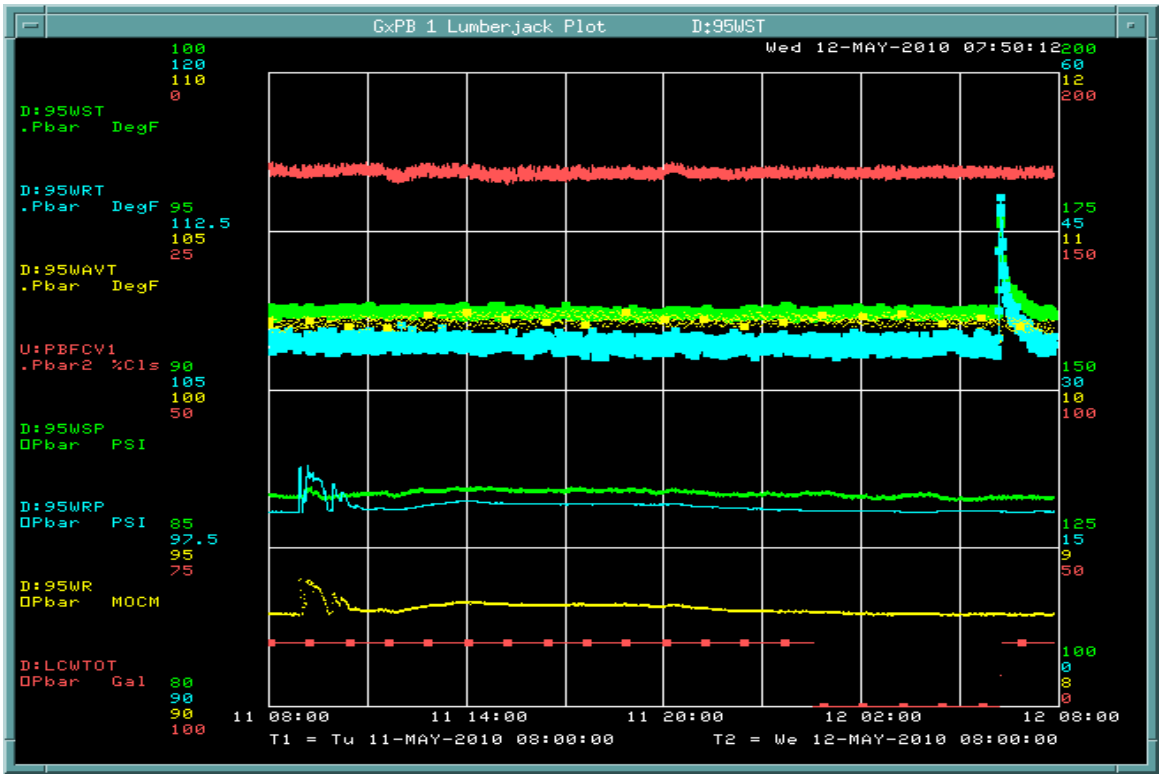

GxPB 2 DCCTs
Wed 12-MAY-2010 07:44:36
D:BEAM5 E_864 E12
D:BEAM3 .E_864 E12
D:BEAM4 E_864 E12
D:BEAM3 .E_864 E12
D:BPI734 *E_864 McG
M:TR105B .Safty E12
D:INJFLX .PbarEH McG
D:BPMI10 *Pbar2 McG
11 08:00
11 14:00
11 20:00
12 02:00
12 08:00
T1 = Tu 11-MAY-2010 08:00:00
T2 = We 12-MAY-2010 08:00:00

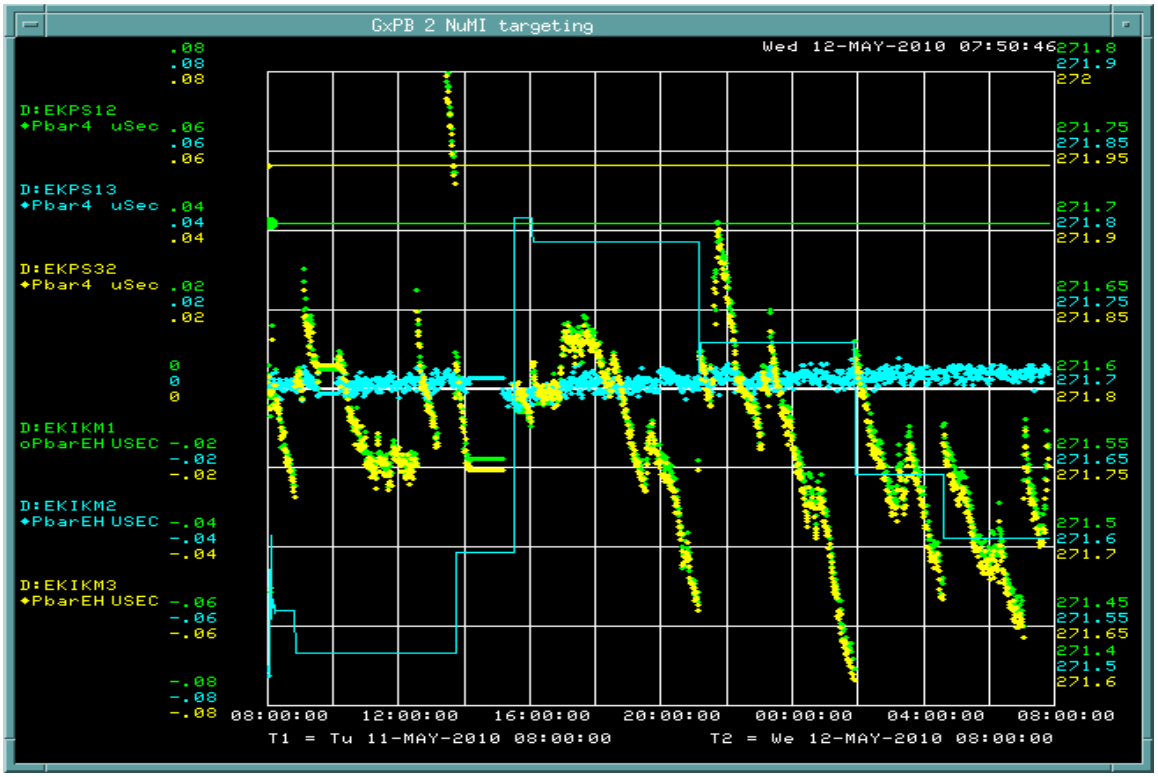

GxPB 1 Shots to Recycler
Wed 12-MAY-2010 07:45:13
A:IBEAM .RunCo mA
A:EKIKV *Pbar3 KV

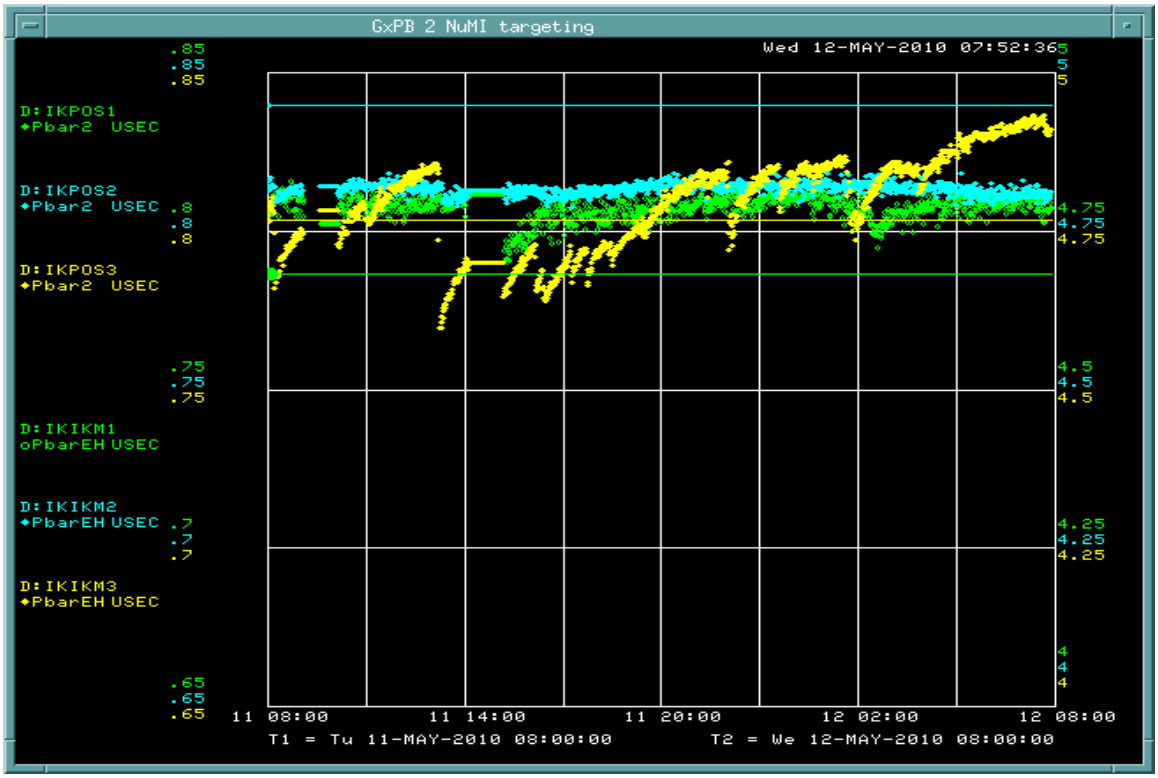

GxPB 1 Shots to Recycler
Wed 12-MAY-2010 07:45:13
A:IBEAM
.RunCo mA
A:EKIKV
•Pbar3 KV
D:BPH902
oPbarEH mm
D:BPH902
oPbarEH mm
R:ACRREF
DE_864 %
R:ACRREF
•E_864 %
11 08:00
11 14:00
11 20:00
12 02:00
12 08:00
T1 = Tu 11-MAY-2010 08:00:00
T2 = We 12-MAY-2010 08:00:00

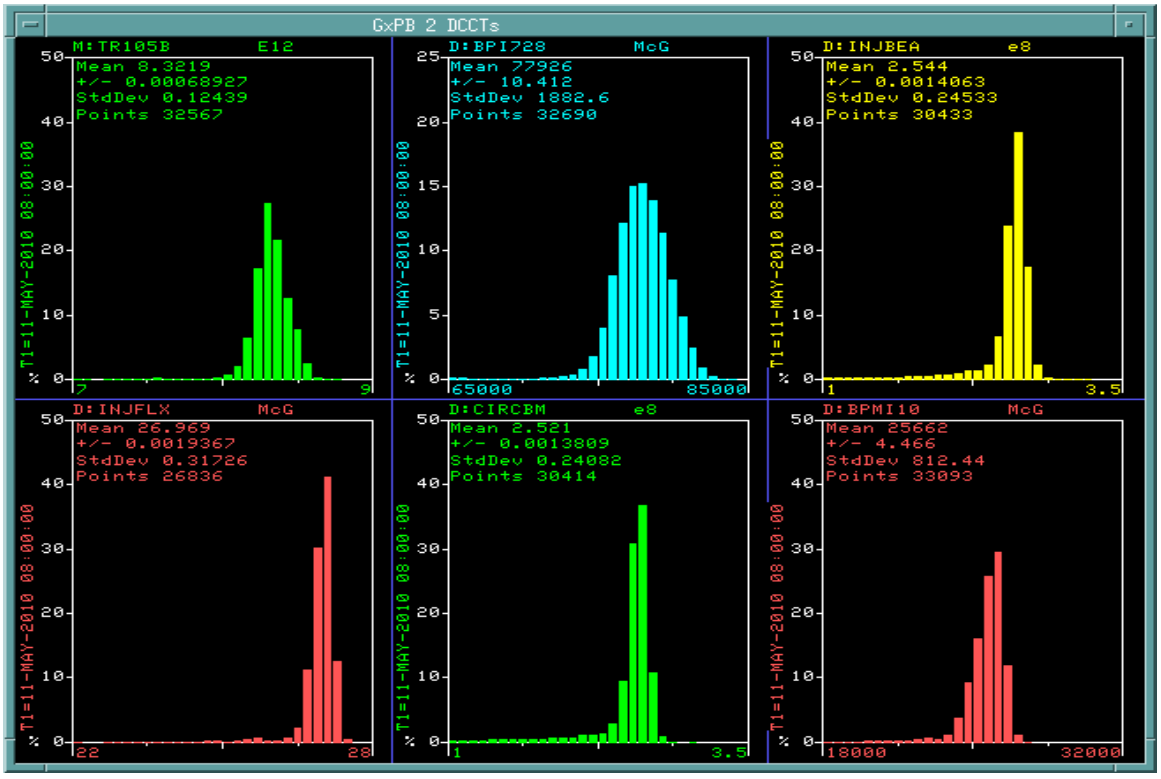

Acc to MI Efficiency
Average 97.3151
MI Efficiency
Average 100.168
MI to RR Transfer Efficiency
Average 97.6774
Acc to RR Transfer Efficiency
Average 95.0416
18976
18981
18986
18991
18996

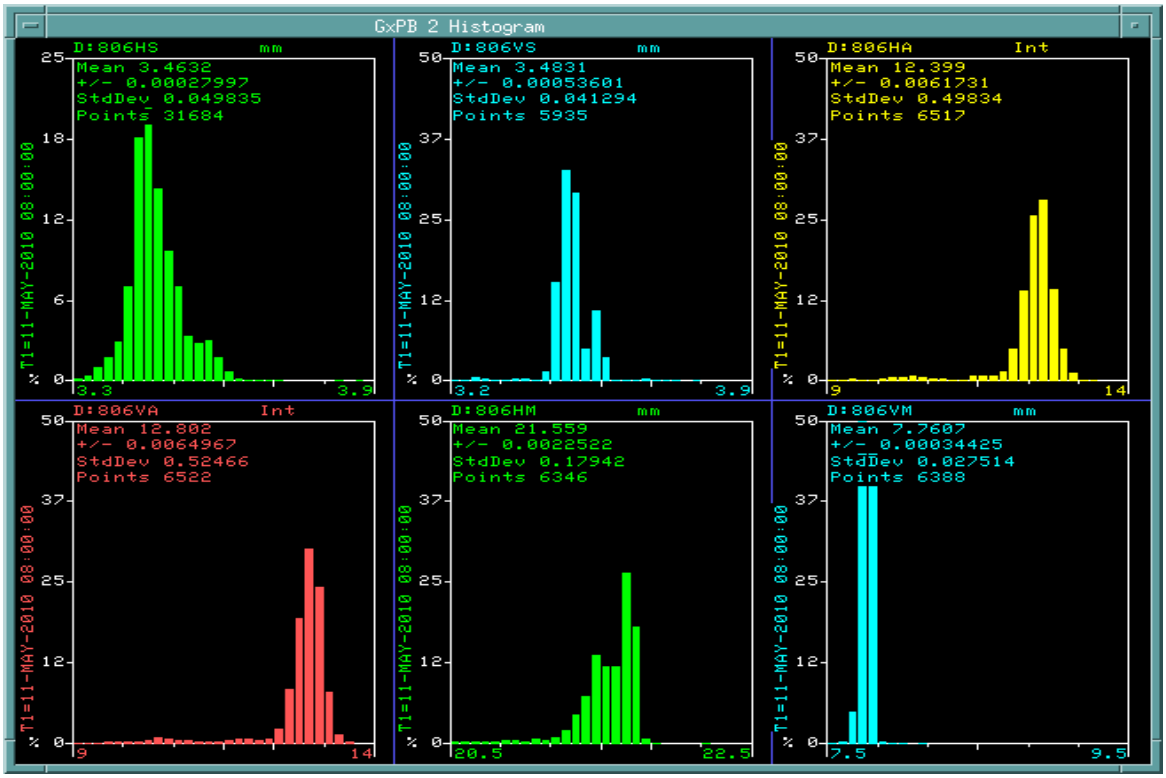

GxPB 1 SEM806
Wed 12-MAY-2010 07:48:46
D:806HS
RunCo mm
D:806VS
RunCo mm
D:806HA
RunCo Int
D:806VA
RunCo Int
11 08:00
11 12:48
11 17:36
11 22:24
12 03:12
12 08:00
T1 = Tu 11-MAY-2010 08:00:00
T2 = We 12-MAY-2010 08:00:00

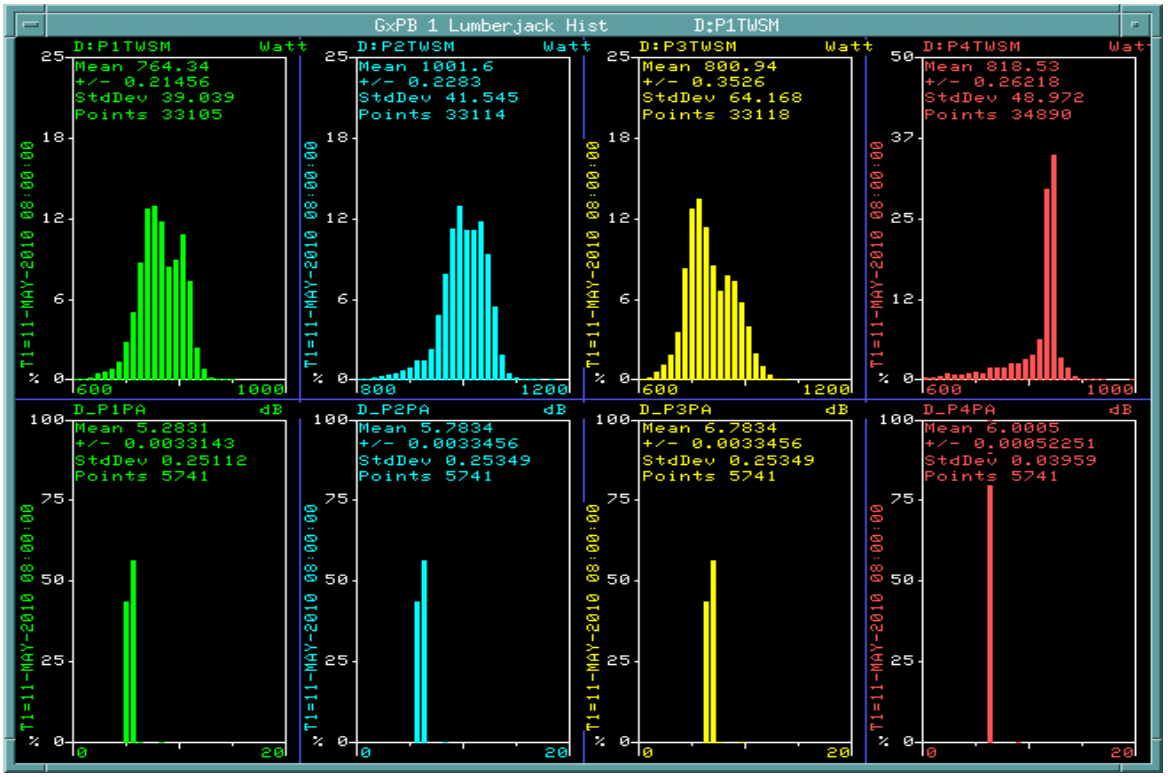

GxPB 1 Lumberjack Plot
D:95WST
Wed 12-MAY-2010 07:50:12
D:95WST
Pbar DegF
D:95WRT
Pbar DegF
D:95WAVT
Pbar DegF
U:PBFCV1
Pbar2 %Cls
D:95WSP
Pbar PSI
D:95WRP
Pbar PSI
D:95WR
Pbar MOCM
D:LCWTOT
Pbar Gal
11 08:00
11 14:00
11 20:00
12 02:00
12 08:00
T1 = Tu 11-MAY-2010 08:00:00
T2 = We 12-MAY-2010 08:00:00

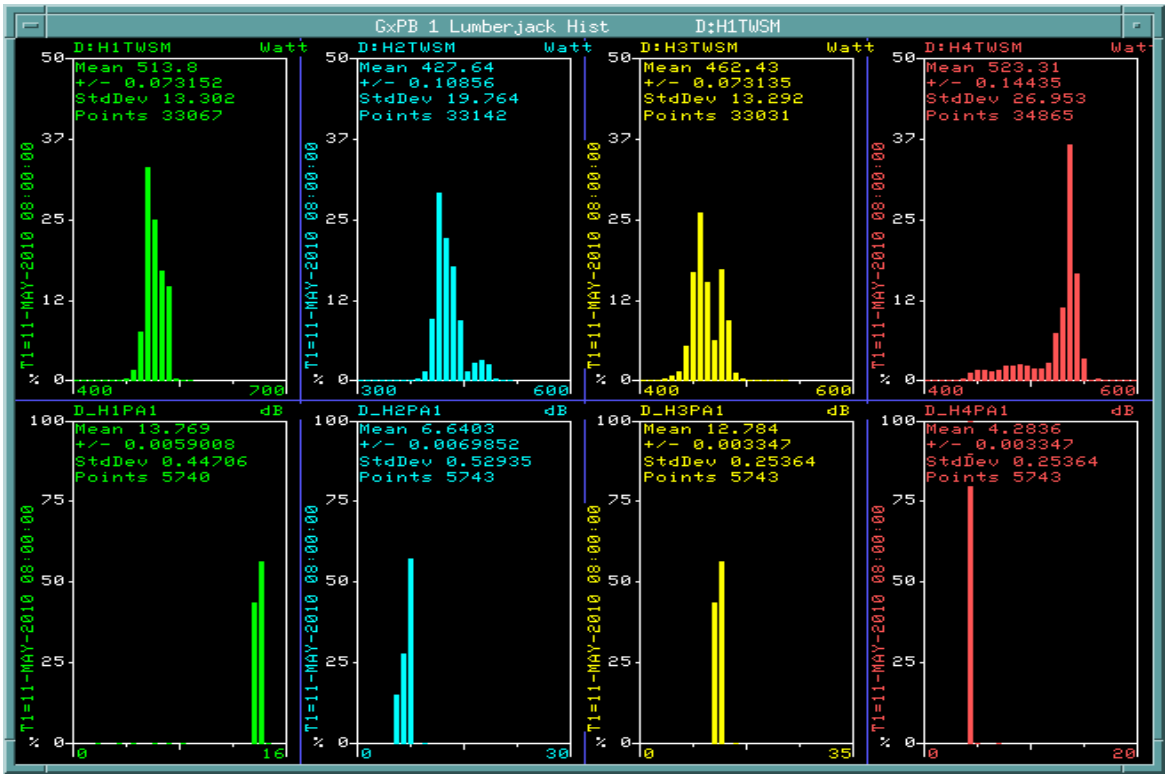

GxPB 2 NuMI targeting
Wed 12-MAY-2010 07:50:46
D:EKPS12
◆Pbar4 uSec
D:EKPS13
◆Pbar4 uSec
D:EKPS32
◆Pbar4 uSec
D:EKIKM1
oPbarEH USEC
D:EKIKM2
◆PbarEH USEC
D:EKIKM3
◆PbarEH USEC
08:00:00 12:00:00 16:00:00 20:00:00 00:00:00 04:00:00 08:00:00
T1 = Tu 11-MAY-2010 08:00:00
T2 = We 12-MAY-2010 08:00:00

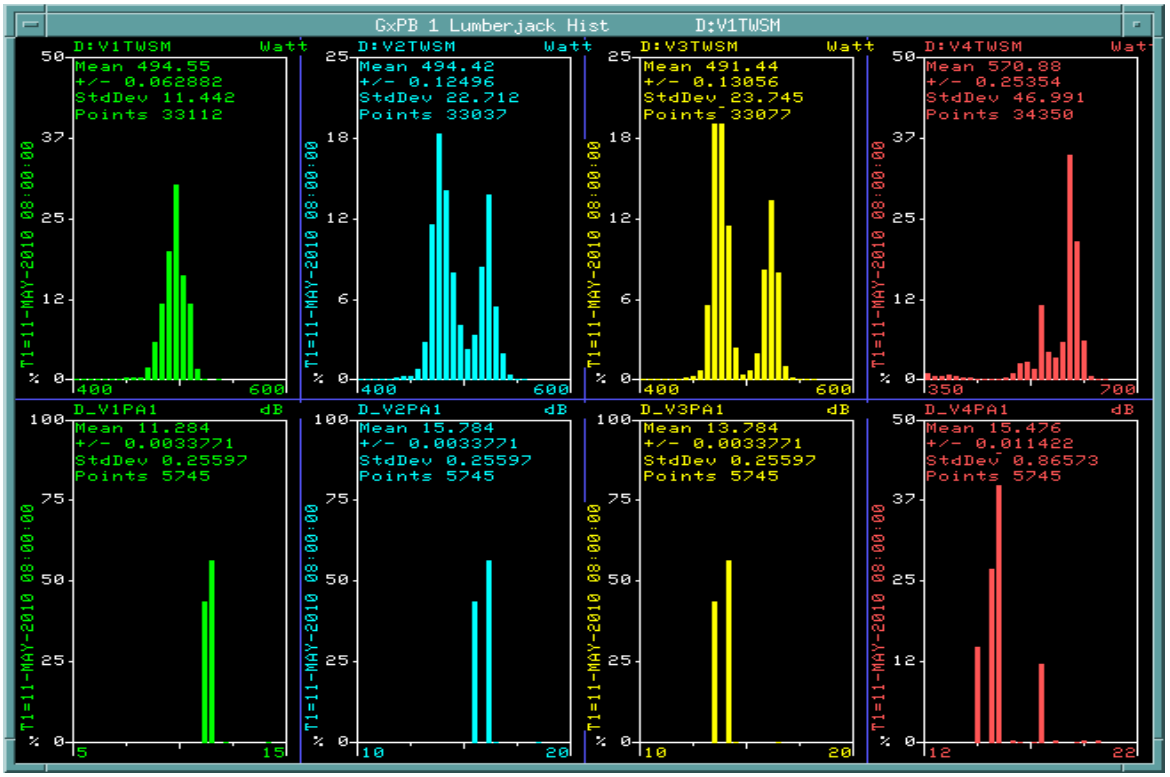

GxPB 2 NuMI targeting
Wed 12-MAY-2010 07:52:36
D:IKPOS1
◆Pbar2 USEC
D:IKPOS2
◆Pbar2 USEC
D:IKPOS3
◆Pbar2 USEC
D:IKIKM1
oPbarEH USEC
D:IKIKM2
◆PbarEH USEC
D:IKIKM3
◆PbarEH USEC
11 08:00 11 14:00 11 20:00 12 02:00 12 08:00
T1 = Tu 11-MAY-2010 08:00:00
T2 = We 12-MAY-2010 08:00:00

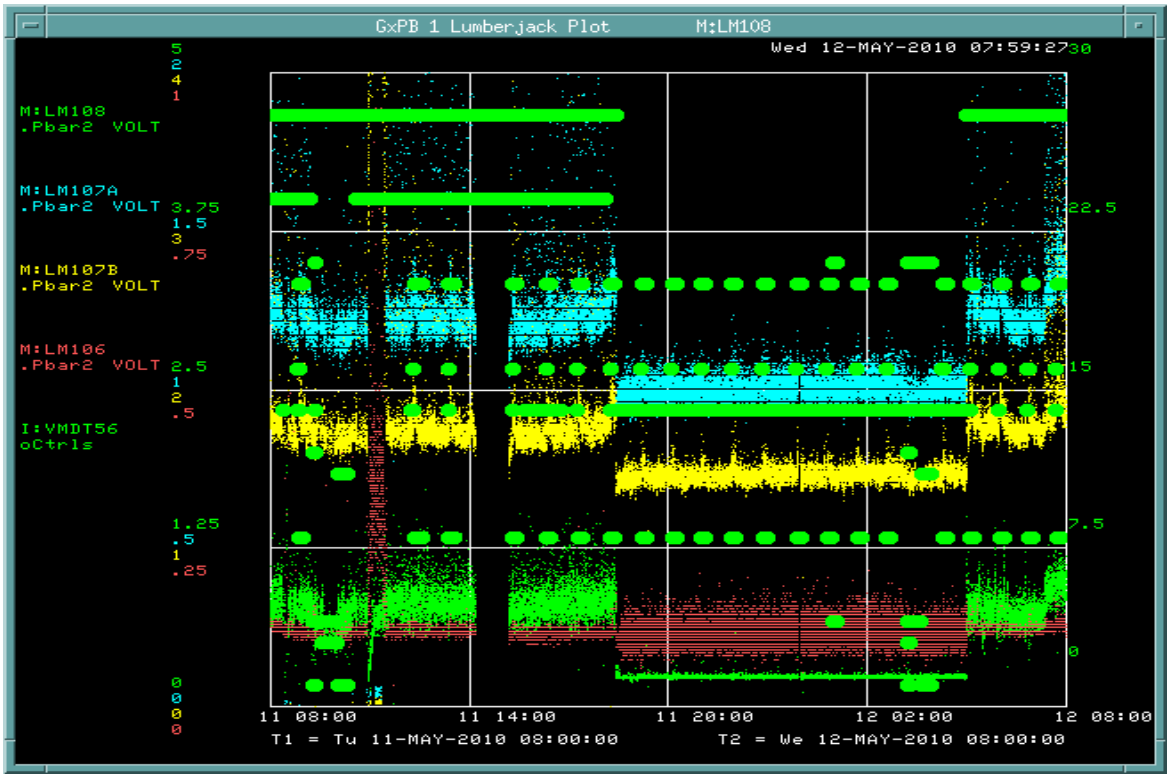

GxPB 2 DCCTs
M:TR105B E12
Mean 8.3219
+/- 0.00068927
StdDev 0.12439
Points 32567
D:BPI728 McG
Mean 77926
+/- 10.412
StdDev 1882.6
Points 32690
D:INJBEA e8
Mean 2.544
+/- 0.0014063
StdDev 0.24533
Points 30433
D:INJFLX McG
Mean 26.969
+/- 0.0019367
StdDev 0.31726
Points 26836
D:CIRCBM e8
Mean 2.521
+/- 0.0013809
StdDev 0.24082
Points 30414
D:BPMI10 McG
Mean 25662
+/- 4.466
StdDev 812.44
Points 33093
T1=11-MAY-2010 08:00:00


GxPB 2 Histogram
D:806HS mm
Mean 3.4632
+/- 0.00027997
StdDev 0.049835
Points 31684
D:806VS mm
Mean 3.4831
+/- 0.00053601
StdDev 0.041294
Points 5935
D:806HA Int
Mean 12.399
+/- 0.0061731
StdDev 0.49834
Points 6517
D:806VA Int
Mean 12.802
+/- 0.0064967
StdDev 0.52466
Points 6522
D:806HM mm
Mean 21.559
+/- 0.0022522
StdDev 0.17942
Points 6346
D:806VM mm
Mean 7.7607
+/- 0.00034425
StdDev 0.027514
Points 6388
T1=11-MAY-2010 08:00:00


GxPB 1 Lumberjack Hist D:P1TWSM
D:P1TWSM Watt
Mean 764.34
+/- 0.21456
StdDev 39.039
Points 33105
D:P2TWSM Watt
Mean 1001.6
+/- 0.2283
StdDev 41.545
Points 33114
D:P3TWSM Watt
Mean 800.94
+/- 0.3526
StdDev 64.168
Points 33118
D:P4TWSM Wat
Mean 818.53
+/- 0.26218
StdDev 48.972
Points 34890
D_P1PA dB
Mean 5.2831
+/- 0.0033143
StdDev 0.25112
Points 5741
D_P2PA dB
Mean 5.7834
+/- 0.0033456
StdDev 0.25349
Points 5741
D_P3PA dB
Mean 6.7834
+/- 0.0033456
StdDev 0.25349
Points 5741
D_P4PA dB
Mean 6.0005
+/- 0.00052251
StdDev 0.03959
Points 5741
T1=11-MAY-2010 08:00:00


GxPB 1 Lumberjack Hist D:H1TWSM
D:H1TWSM Watt
Mean 513.8
+/- 0.073152
StdDev 13.302
Points 33067
D:H2TWSM Watt
Mean 427.64
+/- 0.10856
StdDev 19.764
Points 33142
D:H3TWSM Watt
Mean 462.43
+/- 0.073135
StdDev 13.292
Points 33031
D:H4TWSM Wat
Mean 523.31
+/- 0.14435
StdDev 26.953
Points 34865
D_H1PA1 dB
Mean 13.769
+/- 0.0059008
StdDev 0.44706
Points 5740
D_H2PA1 dB
Mean 6.6403
+/- 0.0069852
StdDev 0.52935
Points 5743
D_H3PA1 dB
Mean 12.784
+/- 0.003347
StdDev 0.25364
Points 5743
D_H4PA1 dB
Mean 4.2836
+/- 0.003347
StdDev 0.25364
Points 5743
T1=11-MAY-2010 08:00:00


GxPB 1 Lumberjack Hist D:V1TWSM
D:V1TWSM Watt
Mean 494.55
+/- 0.062882
StdDev 11.442
Points 33112
D:V2TWSM Watt
Mean 494.42
+/- 0.12496
StdDev 22.712
Points 33037
D:V3TWSM Watt
Mean 491.44
+/- 0.13056
StdDev 23.745
Points 33077
D:V4TWSM Wat
Mean 570.88
+/- 0.25354
StdDev 46.991
Points 34350
D_V1PA1 dB
Mean 11.284
+/- 0.0033771
StdDev 0.25597
Points 5745
D_V2PA1 dB
Mean 15.784
+/- 0.0033771
StdDev 0.25597
Points 5745
D_V3PA1 dB
Mean 13.784
+/- 0.0033771
StdDev 0.25597
Points 5745
D_V4PA1 dB
Mean 15.476
+/- 0.011422
StdDev 0.86573
Points 5745
T1=11-MAY-2010 08:00:00


GxPB 1 Lumberjack Plot M:LM108
Wed 12-MAY-2010 07:59:2730
M:LM108
.Pbar2 VOLT
M:LM107A
.Pbar2 VOLT
M:LM107B
.Pbar2 VOLT
M:LM106
.Pbar2 VOLT
I:VMDT56
oCtrls
11 08:00
11 14:00
11 20:00
12 02:00
12 08:00
T1 = Tu 11-MAY-2010 08:00:00
T2 = We 12-MAY-2010 08:00:00