

# 2010-05-20 Thursday Morning Notes

Thursday, May 20, 2010  
7:00 AM

## Stacking

- Stacking Numbers
  - <stacking rate> = 25.8 mA/hr
  - <production> = 19.8 pbar/Mp
  - <beam on target> = 8.18 Tp
- We reported yesterday that M:Q107 had its output drop by about 10A, out of 160A. The flattop of the ramp was sloped.
  - Bernie found that the output voltage waveform for M:Q107 showed that some of the SCRs were not firing.
  - A quick inspection of similar supplies showed that M:Q105I had the same problem, just not as bad.
  - Took 30 minutes downtime to investigate.
  - Replaced two SCR Gate Firing modules from M:Q107
  - Replaced one SCR Gate Firing module for M:Q105I
  - The power supply settings were adjusted to get the correct current.
- On the owl shift M:Q105I started tripping on phase imbalance and the waveform was sloped at flattop.
  - Bernie came in and replaced the Gate Firing board again.
  - He also found another bad board in M:Q107 and replaced it.
- **Notes from Bernie**
  - **M:Q105I** - Yesterday the top SCR Gate Firing board was replaced, because 2 out of its 6 SCRs were not firing. Today the top SCR Gate Firing board was replaced, because 2 different SCRs were not firing due to a burnt transformer.
  - **M:Q107** - Yesterday the top and bottom SCR Gate Firing boards were replaced, because 5 out of 12 SCRs were not firing. Today the top SCR Gate Firing board was replaced, because 2 SCRs were not firing due to a overheated transformer.
  - I was unable to find an external cause of the failures, but it may be just a bad batch of replacement SCR Gate Firing boards were installed. These SCR Gate Firing boards will be tested in the shop, to see if there is a reason why these boards are failing.
- Pasted from <<http://www-bd.fnal.gov/cgi-mach/machlog.pl?nb=pbar10&action=view&page=148&frame=2&scroll=true&load=>>
- Have some plotting issues. Discovered ramped AP1 supplies have the parameters for power supply output and reference point to the same MADC channel.
  - M:Q10\* - supply
  - M:Q10\*RF - reference
  - For example,
    - M:Q107 - Crate 82, slot 22, channel 10
    - M:Q107RF - Crate 82, slot 22, channel 10.
- Pbar dry engine work is done for today. The good news is the frig is running and appears to have some margin. The bad news is the frig is not completely healthy. Cryo will be requesting an additional four hour frig maintenance period in the near future that will include a flywheel and cold valve change. This work requires that the frig be off for on the order of 15 minutes, so it will not be as "transparent" to operations as the previous work
- Pasted from <<http://www-bd.fnal.gov/cgi-mach/machlog.pl?nb=pbar10&action=view&page=147&frame=2&anchor=&hilite=&load=>>
- Debuncher 10 house BPMs did not resume updating after the M:Q105I work on the owl shift.
  - Followed the telnet reboot procedure [http://www-bdnew.fnal.gov/pbar/documents/Eng\\_Info/DebBPMReset.htm](http://www-bdnew.fnal.gov/pbar/documents/Eng_Info/DebBPMReset.htm).

- Issuing a "HI" command to restore local bus communication did the trick.

## Transfers

- We unstacked 324 mA in 39 transfers over 13 sets with an average efficiency of 96%.
- There were difficulties getting reverse protons during one set of transfers on the owl shift . The problems getting reverse protons to the Accumulator last night were caused by M:Q107. The supply was putting out 114A when it should have been around 6A on the bad transfers. 160A is the stacking value. With all of the SCR problems for this supply, it is hard to blame the ramp card. We will watch this.

Pasted from <<http://www-bd.fnal.gov/cgi-mach/machlog.pl?nb=pbar10&action=view&page=last&frame=2&anchor=&hilite=&load=>>

## Studies

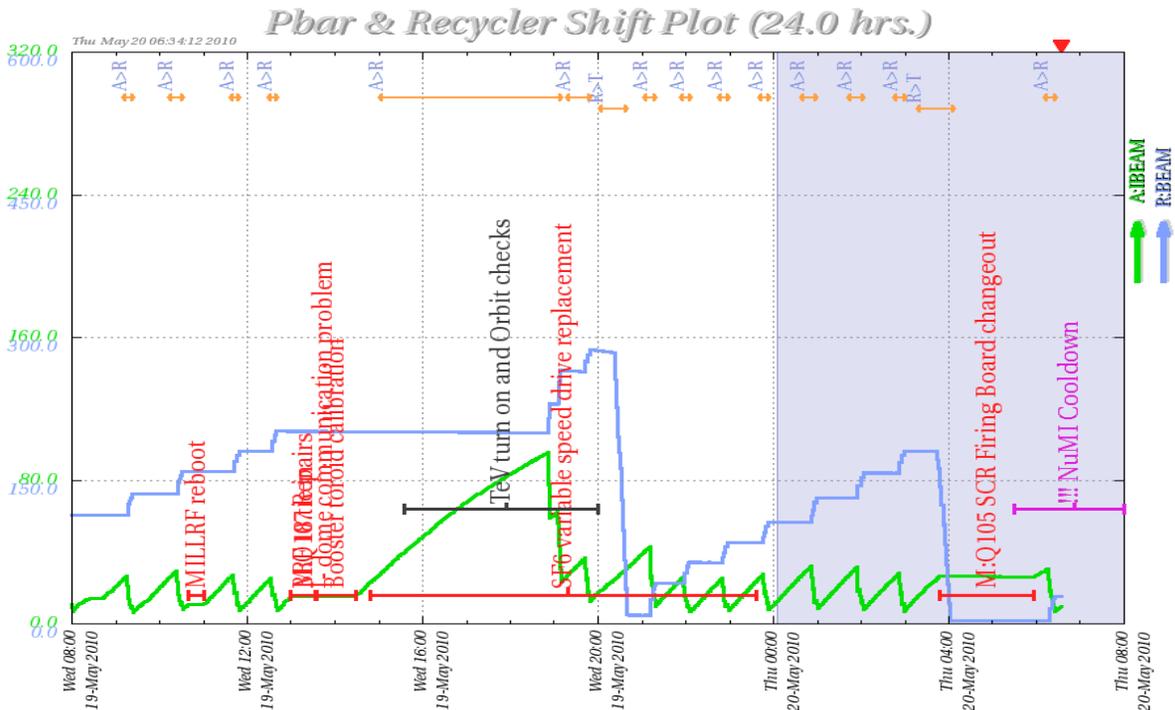
- Stacktail Phasing with 30e10 - looking for opportunistic non-stacking time
- Stacktail tank moving - parasitic
- Jim Morgan would like to change beamline C204 limits based on calculations using the model. We will be doing one plane of one beamline at a time.

## Access & Maintenance

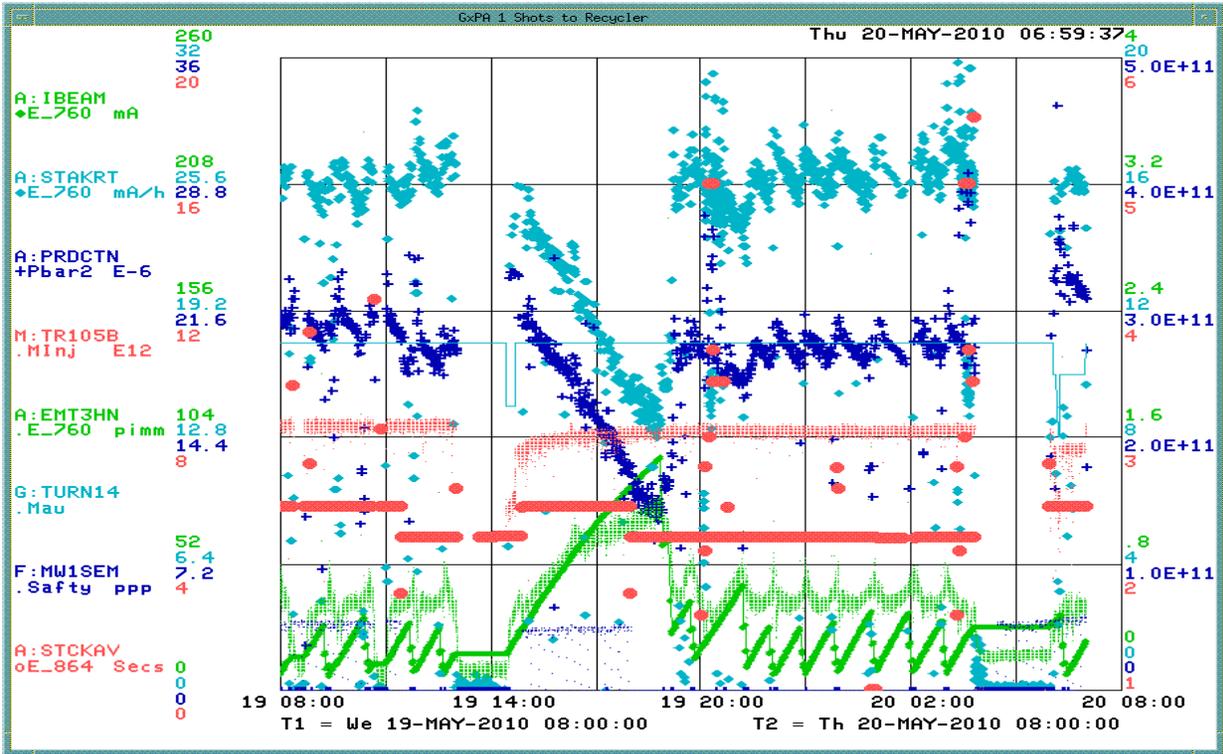
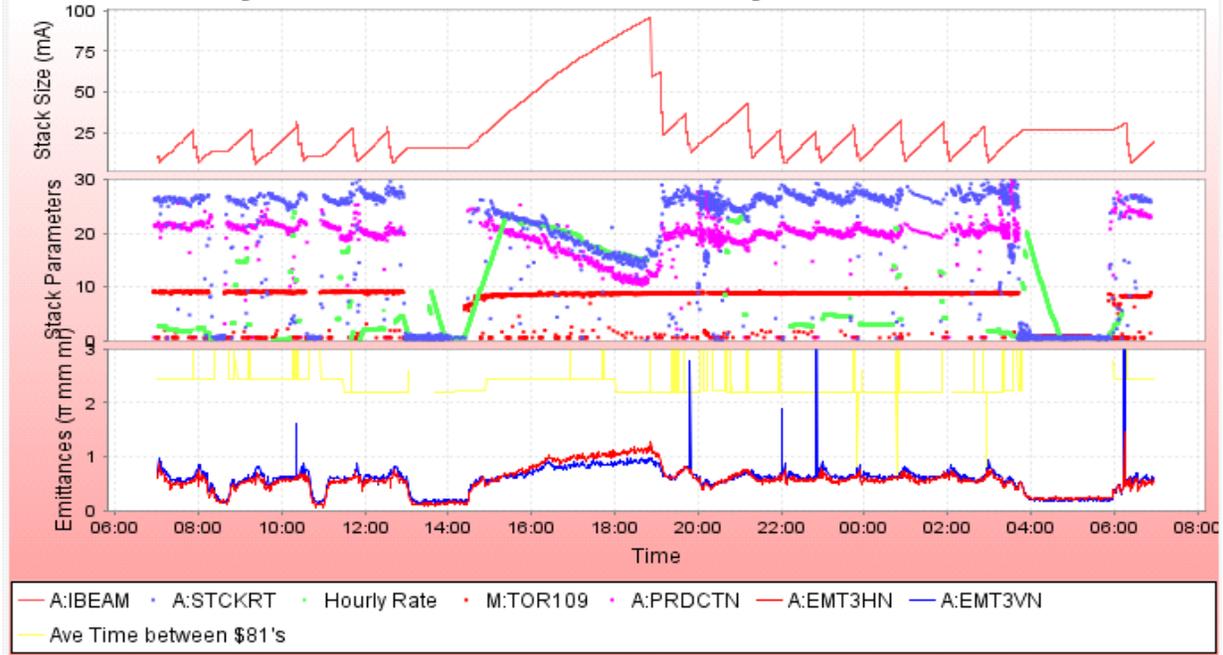
- Pbar Dry Engine maintenance - Cryo needs to change the flywheel, which is a two hour job. We will try to complete this job today.
- Increase power in 4-8 GHz TWTs by 10 W each. Requires tunnel measurements.
- Repair D:POTMF
- D:H1AL1 regulator replacement ([http://www-bd.fnal.gov/cgi-worklist/worklist\\_form.pl?id=11905](http://www-bd.fnal.gov/cgi-worklist/worklist_form.pl?id=11905))
- Ralph, Wes and Pete not available until after Thursday.

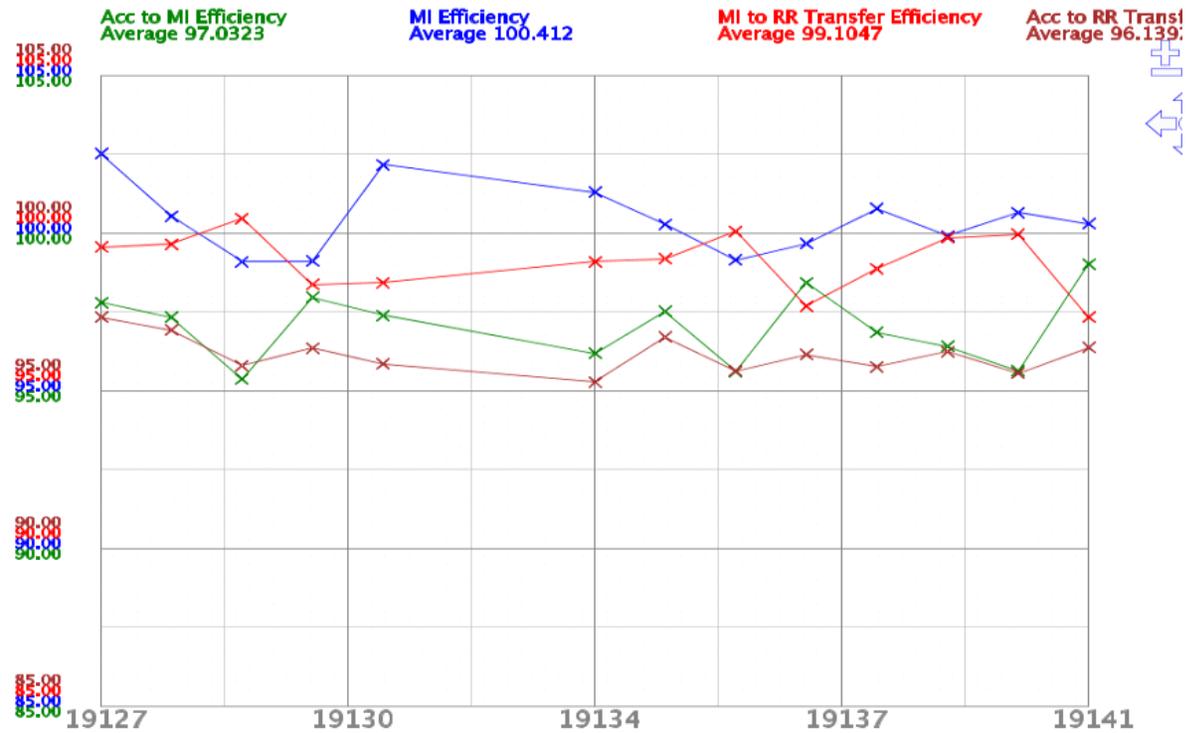
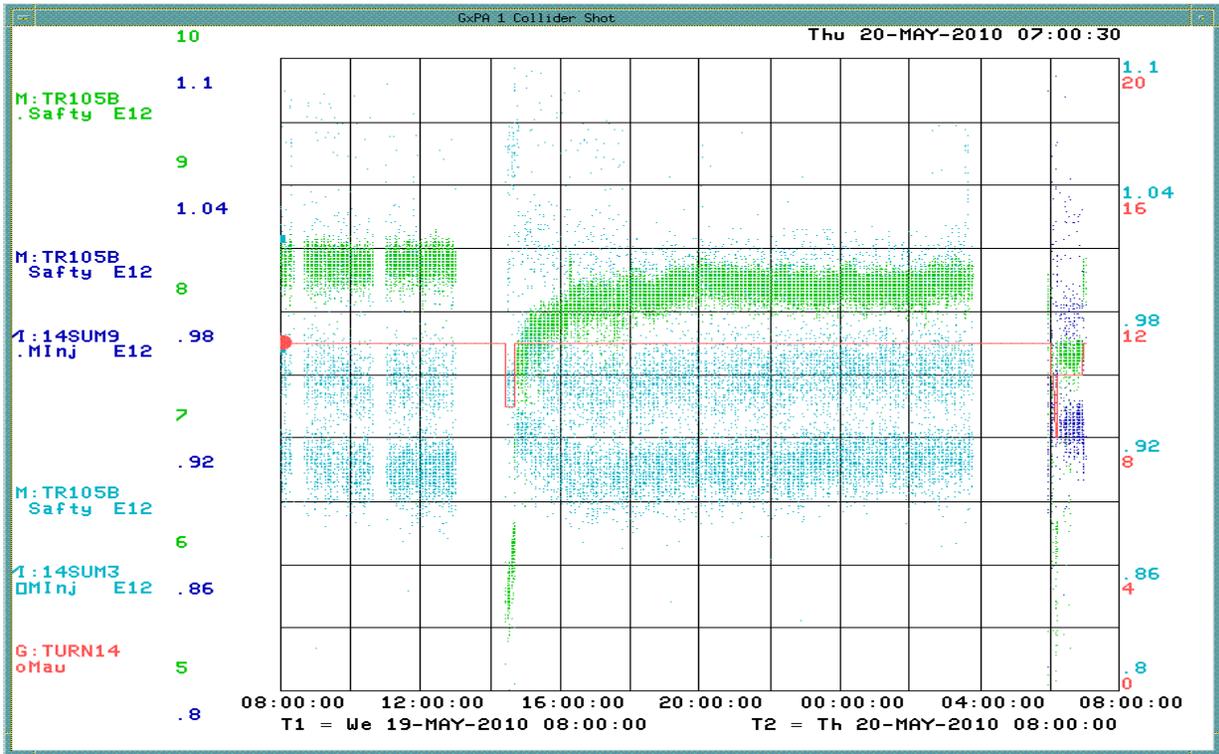
## The Numbers

## The Plots

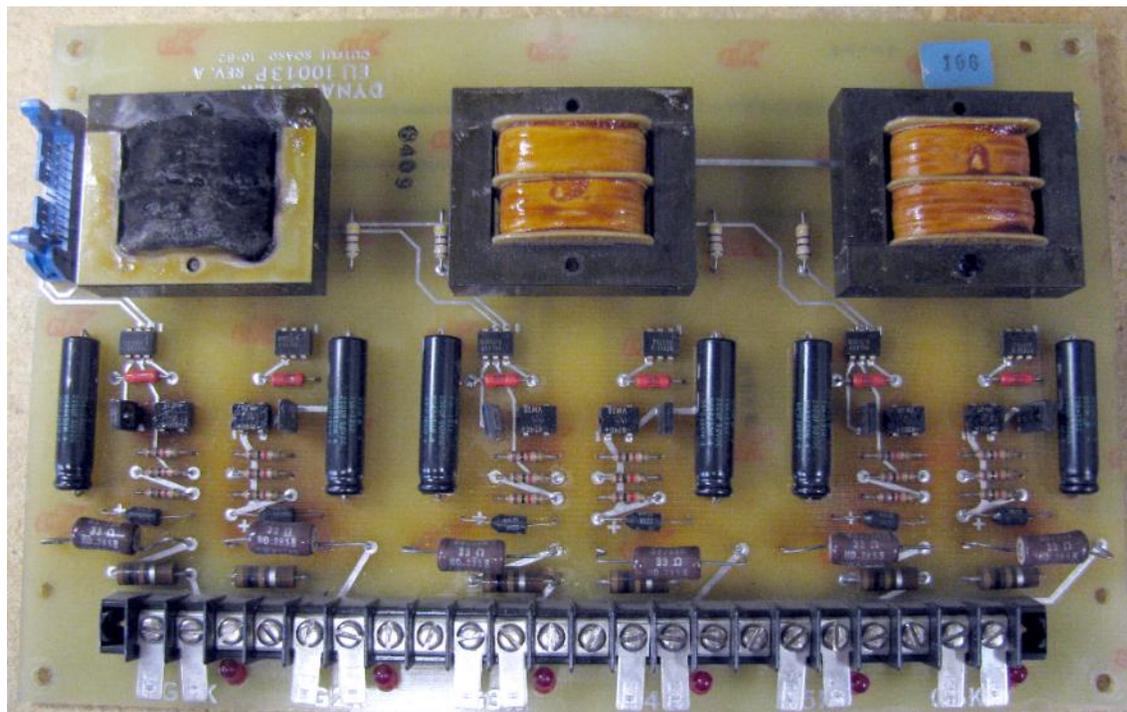


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Column 1 Number _0_Pbar Transfer Shot #	Column 4 Number_3_Transfer Time	Column 21 Number _20_A:I BEAMB sampled on \$91 (A:BEA M7), E10	Column 22 Number _21_A:I BEAMB sampled on \$94 (A:BEA M9), E10	Unstacked (mA)	Column 23 Number _22_R: BEAMS (R:BEA ME0[0]) pre sfer E10	Column 24 Number _23_R: BEAM (R:BEA ME0[1]) post sfer, E10	Stashed	Acc to RR Eff	Acc to MI Eff	Acc to MI2 Eff	Trans fers	Set s	Column 5 Number _4_Acc Horizontal Emittanc e	Column 6 Number _5_Acc Vertical Emittanc e	Column 8 Number _7_Acc Longitu dinal Emittanc e	
<b>Totals =&gt;</b>				<b>323.76</b>			<b>310.98</b>	<b>96.06%</b>	<b>97.16%</b>	<b>97.50%</b>	<b>39</b>	<b>13</b>	<b>5.5782</b>	<b>6.0209</b>	<b>1.9161</b>	
19141	Thursday, May 20, 2010	6:17	31.02	6.25	26.54	3.01	28.56	25.59	96.41%	98.66%	98.84%	3	1	4.377	4.905	1.865
19140	Thursday, May 20, 2010	2:52	28.30	6.77	24.14	158.12	181.03	23.02	95.34%	95.91%	96.23%	3	1	5.753	6.123	1.922
19139	Thursday, May 20, 2010	1:55	31.84	7.60	27.49	132.13	158.34	26.39	96.00%	96.72%	96.50%	3	1	6.031	6.292	1.9
19138	Thursday, May 20, 2010	0:52	32.33	7.84	26.95	106.66	132.32	25.74	95.50%	96.91%	97.18%	3	1	6.097	6.199	1.926
19137	Wednesday, May 19, 2010	23:46	27.59	7.46	22.76	85.00	106.79	21.89	96.16%	98.40%	98.19%	3	1	5.514	6.131	1.954
19136	Wednesday, May 19, 2010	22:50	25.65	6.50	21.79	64.32	85.08	20.83	95.58%	95.73%	95.33%	3	1	5.818	5.912	1.921
19135	Wednesday, May 19, 2010	21:57	26.35	6.20	22.72	42.55	64.39	21.98	96.74%	97.43%	97.62%	3	1	5.498	6.198	1.932
19134	Wednesday, May 19, 2010	21:11	43.10	9.48	35.89	8.89	42.74	34.09	94.99%	96.46%	97.62%	3	1	6.306	6.575	1.842
19131	Wednesday, May 19, 2010	12:33	25.83	6.39	21.83	181.23	202.14	21.01	96.21%	97.69%	99.66%	3	1	5.223	5.805	1.91
19130	Wednesday, May 19, 2010	11:41	27.70	7.51	22.78	159.61	181.50	21.97	96.41%	97.69%	96.72%	3	1	5.89	6.035	1.955
19129	Wednesday, May 19, 2010	10:24	29.60	7.30	24.90	136.15	159.97	23.87	95.89%	95.82%	95.49%	3	1	5.646	6.334	1.951
19128	Wednesday, May 19, 2010	9:16	26.68	5.84	23.45	113.77	136.36	22.71	96.84%	98.04%	98.23%	3	1	5.226	5.879	1.898
19127	Wednesday, May 19, 2010	7:53	26.29	6.39	22.53	92.19	113.99	21.93	97.34%	98.10%	100.08%	3	1	5.137	5.884	1.933

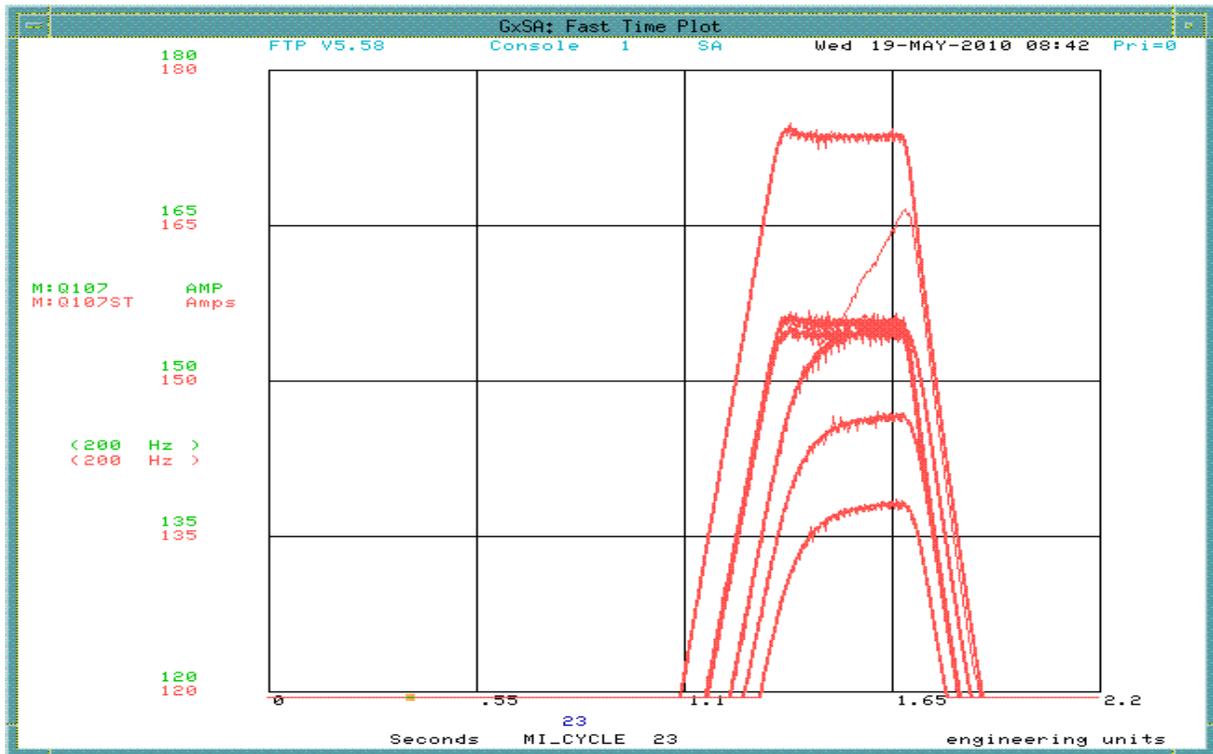
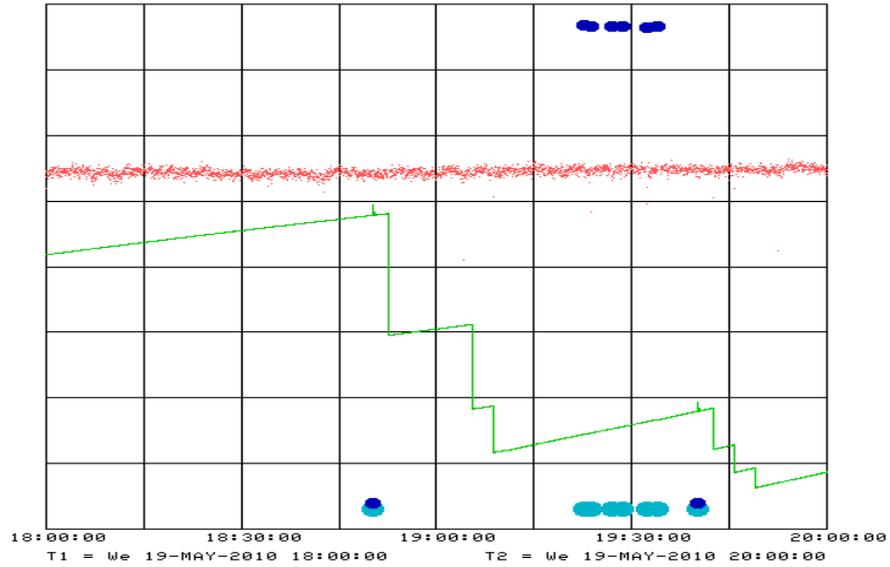


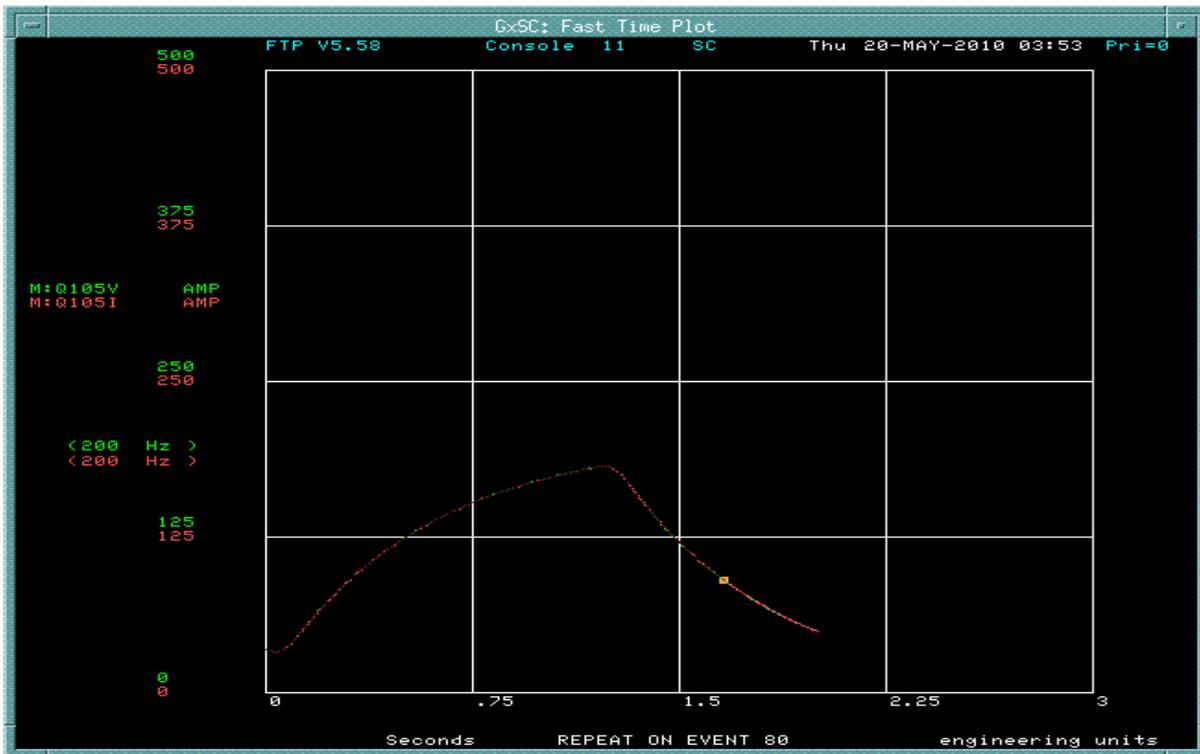
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160
120
120
12
A: IBEAM
.RunCo mA 140
105
105
10.5
M: Q105RP
oPbar3 AMPS 120
90
90
9
M: Q107RP
oPbar3 Amps 100
75
75
7.5
M: TR105B
.E_864 E12
80
60
60
6
45
45
4.5
40
38
30
30
3
20
15
1.5
0
0
0
0

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Thu 20-MAY-2010 07:08:23





PA S53 DIGITAL STATUS

S53 DIGITAL STATUS ♦Pgm\_Tools♦ AGG CONTRL

parm \*SC+ X-A/D X=TIME Y=M:Q105V M:Q105I M:Q107 M:Q107I \*RESET

\*save BL-- Eng-U I= 0 I= 0 0 0 \*ON

r\_80 AUTO F= 3 F= 500 500 500 1200 \*OFF

.global .linac.. booster ..mi... ..tev... ..sy... .p-bar... .misc... collider

M:Q105I PQ5A&B 500A/100V QUAD -See Alarm Log-

CONTROL POWER	ON	1	0	*On
LOCAL/REMOTE CONTROL	LOCAL	0	0	*Off < *
GROUND FAULT	NO	1	0	*Reset< T
EXTERNAL REFERENCE	PRESENT	1	0	.....
DOOR INTERLOCKS	OK	1	0	.....
SCR TEMPERATURE	NORMAL	1	0	Local L
TRANSF. TEMPERATURE	NORMAL	1	0	Alarm is
P.S. WATER TEMPERATURE	NORMAL	1	0	ALARMING
PHASE UNBALANCE	TROUBLE	1	0	Speech is
DC OVER CURRENT	OK	0	0	BYPASSED
SAFETY SYSTEM INTERLOCK	OK	1	0	Edit
MAGNET TEMPERATURE	NORMAL	1	0	
15V P.S. NORMAL	OK	1	0	
EXTERNAL INTERLOCKS	OK	1	0	
INTERLOCKS COMPLETE	OPEN	0	0	
DC ON/OFF	OFF	0	0	

Messages

