

Stacking

- Horizontal band 2 trombone drifting. We made a 70 psec change and another 35psec change after the 9am meeting. The cooling system was wandering so far out of tune that it was actually heating the beam, driving up the emittances.
 - Further investigation found that the TWT helix power supply was wandering.
 - The supply was replaced and the cooling system became more stable.
 - Analog alarm limits were setup on this supply to alert us of future problems.
- Core 4-8GHz TWTs started another bout of tripping. Controls experts changed out the TWTPM.
 - None of the Unit Select, Micro-p Fault or Power Supply Fault lights were lit on the TWTPM#1 crate. After the power to the TWTPM crate was cycled, the Unit Select returned and the control of the TWT power supplies appeared to return to normal.
 - The status and control of A:CMTW03 & A:CMTW04 looked normal until about 18:00 when it went crazy again.
 - Replaced the TWTPM#1 crate with one from my test system. A:CMTW03 & A:CMTW04 looks good again. Pasted from <<http://www-bd.fnal.gov/cgi-mach/machlog.pl?nb=pbar09&action=view&page=last&frame=2&anchor=&hilite=&load=>>
- Stacking Numbers
 - We stacked 483mA over the last 24 hours. We have not had a stacking day above 500mA since the start of the shutdown.
 - <stack rate> = 23.2 mA/hr
 - <production> = 23 e-6/p
 - <beam on target> = 6.6 E12

Transfers

- We unstacked 465mA in 47 transfers over 22 sets.
 - <efficiency> = 92-93%
- Something went wrong with transfer 13965 at 7:51. The horizontal extraction position out of the Accumulator was about 8mm off. This could really only be caused by A:EKIK, but the lumberjack of D:EKIK shows that it was at the correct current at sample time.

Studies

Requests

- Tony Leveling
 - Brief interruption in stacking to look at lens LCW auto-fill problem.
- Water Cage Access
 - Isolate the water cooled target water circuit to reduce radiation levels in and around the AP0 water cage. One hour of radiation cooling time and less than 1/2 hour are required to complete this job. We will want to put the lines in dry layup when some longer access opportunity presents itself. (http://www-ad.fnal.gov/cgi-worklist/worklist_form.pl?id=10721)
 - Replace collection lens conductivity meters. Meter outputs are dropping out low periodically and with increasing frequency. This is electrical work; no RAW system work is required. - 4 hours (http://www-ad.fnal.gov/cgi-worklist/worklist_form.pl?id=10720)
 - Test collection lens makeup water circuit. Determine cause of low lens

supply/return flow. Requires 1 hour of cool down time and up to 4 hours to make a system modification. - 5 hours (

http://www-ad.fnal.gov/cgi-worklist/worklist_form.pl?id=10719)

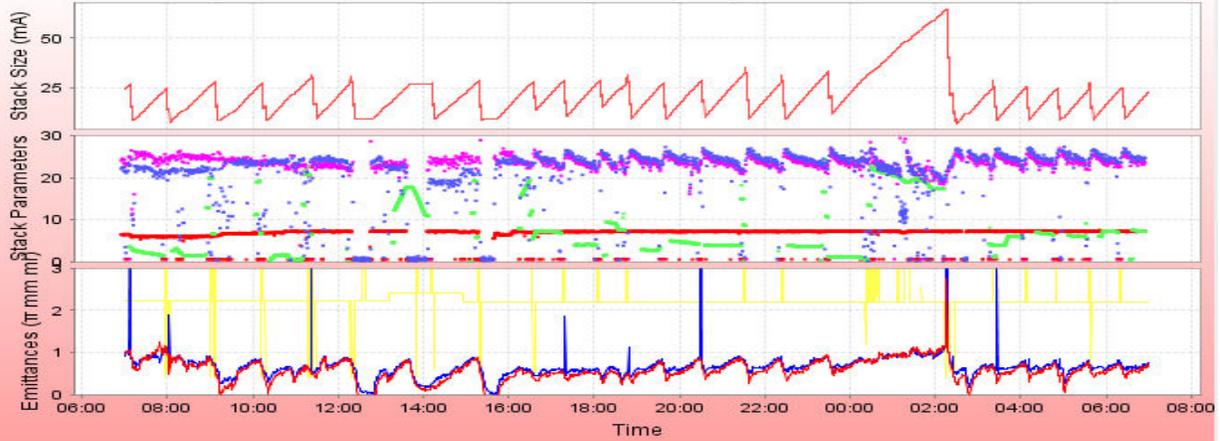
- 4-8GHz tune-up
 - DVM would like to tune-up the 4-8GHz momentum
- Full check-out of all cooling systems
 - Need stacking pulses available
 - Very destructive to stacking
 - At least two shifts. Can be broken into two or four hour chunks.
 - Maybe we can wait to line this up with other downtime.

The Numbers

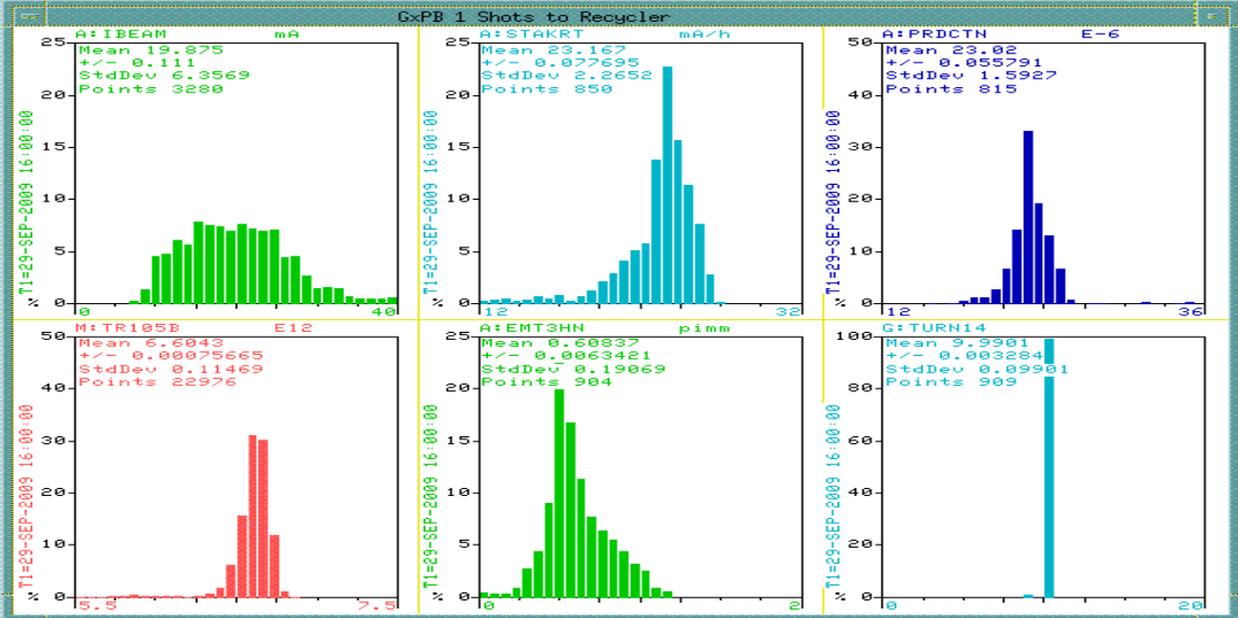
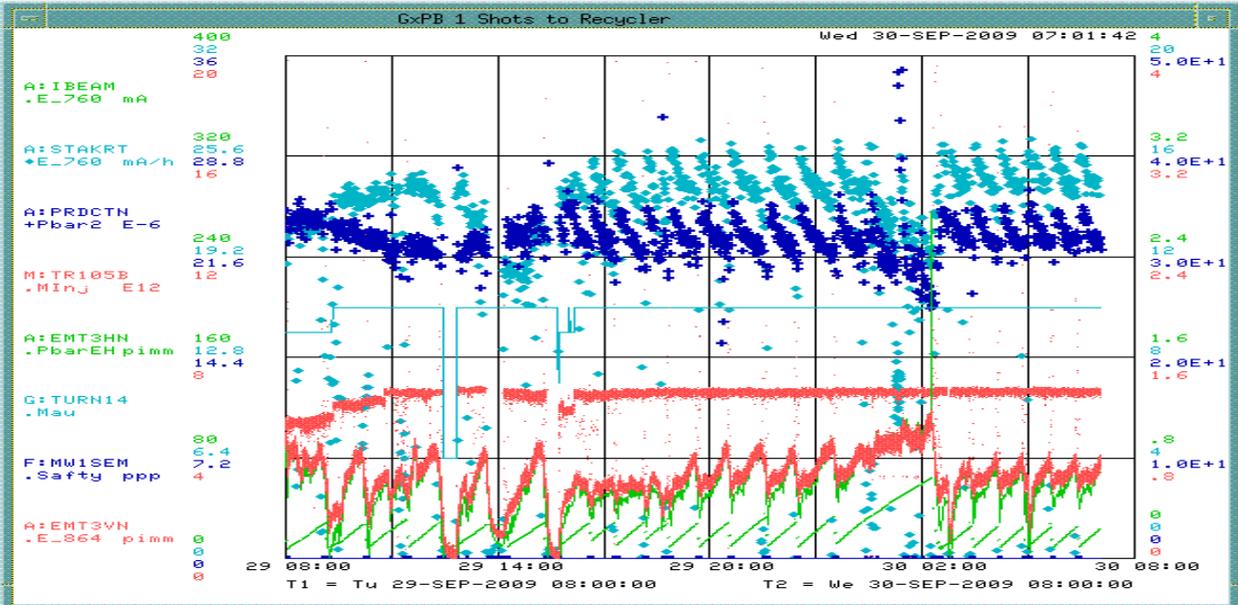
- Stacking
 - Pbars stacked: 483.73 E10
 - Time stacking: 23.24 Hr
 - Average stacking rate: 20.82 E10/Hr
- Uptime
 - Number of pulses while in stacking mode: 37111
 - Number of pulses with beam: 33857
 - Fraction of up pulses was: 91.23%
- The uptime's effect on the stacking numbers
 - Corrected time stacking: 21.20 Hr
 - Possible average stacking rate: 22.82 E10/Hr
 - Could have stacked: 530.22 E10/Hr
- Recycler Transfers
 - Pbars sent to the Recycler: 484.98 E10
 - Number of transfers : 49
 - Number of transfer sets: 23
 - Average Number of transfer per set: 2.13
 - Time taken to shoot including reverse proton tuneup: 00.19 Hr
 - Transfer efficiency: 92.66%
- Other Info
 - Average POT : 6.44 E12
 - Average production: 22.19 pbars/E6 protons
- * Missed one or more A:IBEAM7 events somewhere in the middle of the user selected time span. Calculated time shot using 13 secs per transfer.
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Plots

Tue Sep 29 07:00:00 CDT 2009 -- Wed Sep 30 07:00:00 CDT 2009



— A:IBEAM
 • A:STCKRT
 • Hourly Rate
 • M:TOR109
 • A:PRDCTN
 — A:EMT3HN
 — A:EMT3VN
— Ave Time between \$81's



Column 1 Number _0_Pbar Transfer Shot #	Column 4 Number_3 Transfer Time	Column 21 Number _20_A:1 BEAMB sampled on \$91 (A:BEA M7), E10	Column 22 Number _21_A:1 BEAMB sampled on \$94 (A:BEA M9), E10	Unstacked (mA)	Column 23 Number _22_R: BEAMS (R:BEA ME0[0]) pre fer E10	Column 24 Number _23_R: BEAM (R:BEA ME0[1]) post fer, E10	Stashed	Acc to RR Eff	Acc to MI Eff	Acc to MI2 Eff	Trans fers	Set s	Column 5 Number_ 4_Acc Horizont al Emittanc e	Column 6 Number _5_Acc Vertical Emittanc e	Column 8 Number _7_Acc Longitu dinal Emittanc e	
Totals =>				465.56			432.67	92.93%	96.49%	96.43%	47	22	5.1719	5.6973	1.855	
13963	Wednesday, September 30, 2009	6:22	25:13	9:14	17.16	128.86	145.01	16.27	94.80%	97.09%	96.17%	2	1	5.247	5.923	1.839
13962	Wednesday, September 30, 2009	5:38	24:85	8:88	17.15	112.63	128.98	16.44	95.85%	99.24%	98.72%	2	1	5.145	5.588	1.828
13961	Wednesday, September 30, 2009	4:51	24:71	8:81	17.10	96.83	112.89	16.18	94.65%	96.83%	97.40%	2	1	5.27	6.141	1.838
13960	Wednesday, September 30, 2009	4:08	25:48	8:97	17.74	80.20	97.00	16.83	94.90%	97.42%	97.39%	2	1	5.387	6.093	1.898
13959	Wednesday, September 30, 2009	3:23	25:66	8:86	18.00	63.20	80.34	17.12	95.11%	97.03%	97.17%	2	1	4.744	5.811	1.775
13958	Wednesday, September 30, 2009	2:16	64:77	7:10	62.04	7.81	63.41	55.86	90.04%	94.66%	95.03%	5	1	6.428	6.595	1.862
13957	Tuesday, September 29, 2009	23:30	33:29	11:68	22.75	336.43	356.97	20.65	90.76%	94.08%	94.01%	2	1	6.595	7.146	1.817
13956	Tuesday, September 29, 2009	22:25	28:57	9:38	20.26	319.21	337.95	18.88	93.19%	95.23%	94.47%	2	1	5.463	5.886	1.867
13955	Tuesday, September 29, 2009	21:34	33:05	9:63	24.15	298.12	320.41	22.41	92.77%	96.13%	97.25%	2	1	5.298	5.942	1.858
13954	Tuesday, September 29, 2009	20:31	28:96	10:14	19.80	281.05	299.47	18.52	93.55%	95.13%	95.51%	2	1	5.976	6.189	1.717
13953	Tuesday, September 29, 2009	19:37	27:56	9:19	19.54	264.02	282.13	18.22	93.27%	96.71%	97.38%	2	1	5.495	5.958	1.886
13952	Tuesday, September 29, 2009	18:48	28:16	9:38	19.63	246.33	264.86	18.68	95.18%	97.94%	96.42%	2	1	3.962	4.238	1.898
13951	Tuesday, September 29, 2009	18:08	28:79	15:55	14.10	233.64	247.00	13.44	95.32%	98.37%	98.73%	2	1	3.624	4.536	2.004
13950	Tuesday, September 29, 2009	17:18	28:83	10:70	19.30	216.17	234.26	18.15	94.07%	95.16%	95.56%	2	1	3.905	4.527	1.902
13949	Tuesday, September 29, 2009	16:34	28:09	13:96	15.31	202.23	216.65	14.53	94.89%	98.90%	98.11%	2	1	3.758	4.388	1.935
13948	Tuesday, September 29, 2009	15:18	28:68	8:88	20.85	183.95	203.10	19.27	92.46%	97.45%	98.07%	2	1	5.561	6.078	1.831
13947	Tuesday, September 29, 2009	14:12	27:52	9:33	19.08	166.41	184.50	18.21	95.40%	98.38%	96.70%	2	1	2.227	2.725	1.863
13946	Tuesday, September 29, 2009	12:20	28:49	9:42	20.18	148.45	167.09	18.72	92.75%	96.50%	95.43%	2	1	5.369	6.541	1.863
13945	Tuesday, September 29, 2009	11:25	30:40	9:20	22.35	127.96	148.90	20.97	93.83%	98.37%	98.06%	2	1	4.507	5.037	1.859
13944	Tuesday, September 29, 2009	10:14	27:34	8:46	20.02	109.46	128.33	18.88	94.30%	97.99%	96.85%	2	1	4.428	5.132	1.842
13943	Tuesday, September 29, 2009	9:07	28:28	8:42	20.77	90.44	109.66	19.27	92.78%	97.02%	96.80%	2	1	5.278	5.578	1.845
13942	Tuesday, September 29, 2009	7:59	24:74	7:50	18.30	75.60	90.64	15.18	82.91%	92.66%	94.70%	2	1	10.115	9.289	1.783
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