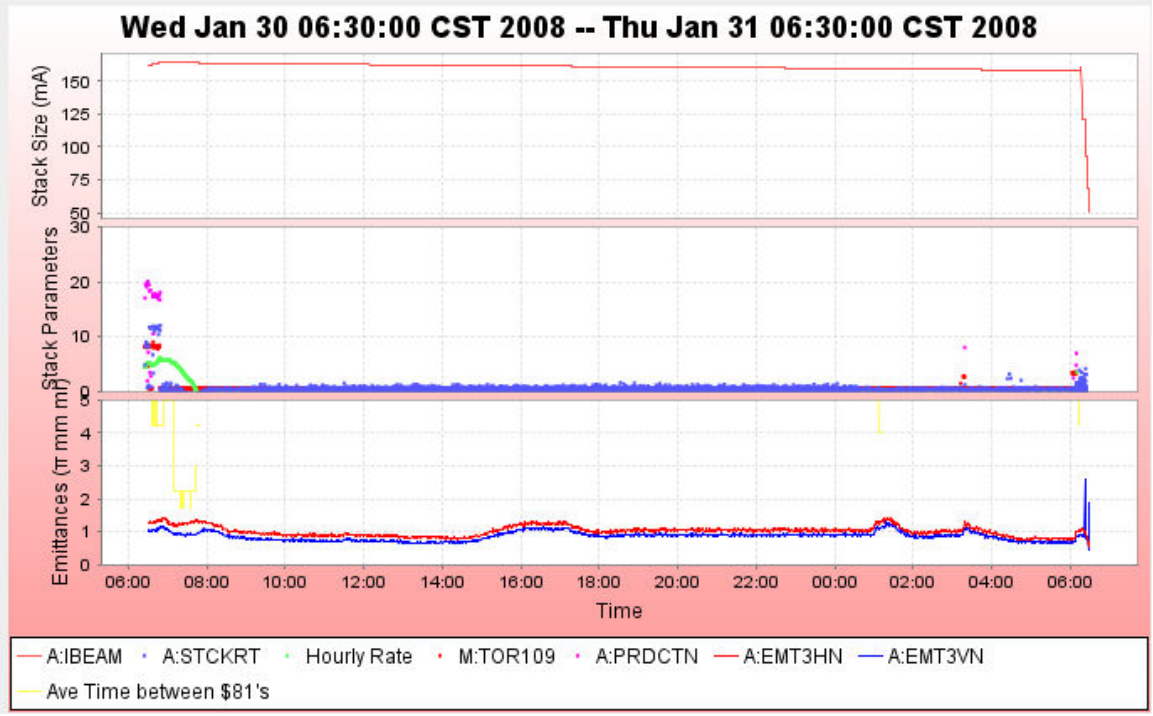
2008-01-31 Thursday Morning Pbar Notes

Wednesday, January 30, 2008
3:44 PM

Stacking

- We held onto our large stack during the long MI access period.
- We ran the flusher and fine tweeked it's settings
  - Increasing the ARF2 voltage from 16V to 55V improved emittances.
  - Had one instance of the ARF2 voltage readback jumping from 55V to 80V, with no setting change.
  - When we lowered voltage so the readback was again 55V, the emitances grew.
  - The change was put back and emittances remained under control.
  - We had a very stable period from 6pm to midnight.
  - During that time, lifetimes were about 690 hours for a 160mA stack



At 07:17:37 we lost Pbar stack due to A:BS103 shunt failure in tunnel. An access was made to repair the shunt.

Pbar Rings Access to Repair A:BS103

ID	Requestor	Title	Location	Type
7440	Drendel, Brian	A:10EFOX was replaced.	Pbar Rings A10 Location	ES&H / Interlocks
7476	Drendel, Brian	Lost stack due to a:BS103 failure. An access was made to replace the shunt. This was the driving force of the access.	A1B3 location in Pbar Rings	Power Supply
7478	Drendel, Brian	A water leak was repaired on A:QT power supply. It was a lose hose clamp, but the water was dripping on the transformers. Extra time was taken to dry out the inside of the supply before turning on.	AP10	Power Supply
7405	Gollwitzer, Keith	Inspection of Pbar Rings was completed and there were no surprises.	Rings enclosure	Misc
Total Requests: 4				
Grand Total 4				

Wednesday Main Injector Access Work

- Camac 183 card added to Pbar crate $72 at AP0
  - D:PBKRST will interrupt 120 VAC to the PBKICK PC for 6 seconds.
  - PBKICK then reboots and restarts the sweeping system control function
- The power supply over current trip circuitry, in septum D:ESEP, was repaired today. The protection circuitry then passed a simulated overcurrent condition.
- The phase balance relays were replaced in Dynapower PS's, D:Q702 and D:Q715.

1-30-08 Pbar Work during MI Access

The below jobs were approved and worked on during today's Main Injector Access period.

ID	Requestor	Title	Location	Type
7362	Leveling, Anthony	This is part of FESS's annual requirement for planned maintenance on AC units.	AP0 service building	FESS / Utilities
7427	Leveling, Anthony	The target air blower oil change and air filter change.	AP0 service building	Target Station
7444	Leveling, Anthony	A CAMAC 183 card was installed in PBAR crate 72 slot 23. This was originally advertised going into Pbar Crate 70, slot 20, but crate 70 has the three Pbar CDCs, Q926, H926 and the sweeper magnet controls. Crate 72 was chosen since it has less critical items onboard. The purpose of this 183 card is to enable remote power cycling of the sweeping system front end PBKICK. A reset command from D:PBKRST will interrupt 120 VAC to the PBKICK PC for 6 seconds. PBKICK then reboots and restarts the sweeping system control function.	AP0 service building	Target Station
7468	Peterson, David	Checked the cryo power distribution block after yesterday's fuse failure. It was found that the circuits for these boards and other like boards were drawing 2.7A, an only had 3.0A fuses. Fuses were replaced with 10A fuses, which still will provide sufficient protection to the system.	AP10 Debuncher PLC	Stochastic Cooling
7006	Sheahan, Patrick	The driver tubes for DRF1-1 was drawing twice the current of DRF1-8. These two adiabatic stations share the same drive and should draw the same current. The high driver current has caused intermittent faults which trip the ENIs. Driver tubes were replaced. Experts completed the general tune-up without beam, and will finish the fine tuning in the morning after beam has been established. There is still a chance that DRF1-1 may need future tunnel work.	DRF1-1	High Level RF
7394	White, Dale	Sump samples	Pre-Vault	ES&H / Interlocks
7358	Wisner, Bernard	The power supply over current trip circuitry, in septum D:ESEP, was repaired today. The protection circuitry then passed a simulated over-current condition.	AP10	Kicker Systems
7359	Wisner, Bernard	The phase balance relays were replaced in Dynapower PS's D:Q702 and D:Q715. Relay modules were getting old and similar modules were starting to fail. This is part of an effort to replace these modules via preventive maintenance. D:QT606 still needs this work done.	AP0, AP10, F27	Power Supply

Total Requests: 8

Transfers

- We transferred 142mA to the Recycler in 8 transfers over 1 set.
  - Accumulator to MI efficiency was 97%.
  - Accumulator to Recycler efficiency was 93%.

Column 1 Pbar Transfer Shot #	Column 2 Recycler Shot #	Column 4 Transfer Time		Column 21 A:IBEAMB sampled on $91 (A:IBEAM1), E10	Column 22 A:IBEAMB sampled on $94 (A:IBEAM2), E10	Unstacked (mA)	Column 23 R:BEAMS (R:BEAM E0[0]) pre xfer E10	Column 24 R:BEAM (R:BEAM E0[1]) post xfer, E10	Stashed	Acc to RR Eff	Column 27 MI DCCT SMALL BEAM (I:BEAMS), E10	Column 28 MI Before Extraction (I:BEAM6), E10	Acc to MI Eff	Acc to MI2 Eff	Transfers	Sets
		1/31/2008	7:00:00 AM			141.199			131.07	0.93	137.128	137.416	97.12%	97.32%	8	1
7011	4475	Thursday, January 31, 2008	6:16:43 AM	157.587	16.388	141.199	-0.139	130.932	131.07	0.93	137.128	137.416	97.12%	97.32%	8	1

Studies

Requests

Other Notes

- Paul's Numbers
  - Most in an hour: 5.50 mA at Wed Jan 30 06:53:02 CST 2008
  - Best: 25.19 mA on 30-Jan-08
  - Average Production 17.36 e-6/proton Best: 23.53 e-6/proton on 11/11/2007
  - Average Protons on Target 7.02 e12 Best: 8.77 e12 on 07/24/2007
  - Largest Stack .00 mA Best: 271.01 mA on 11/14/2007
- Al's Numbers
  - Stacking
    - Pbars stacked: 02.63 E10
    - Time stacking: 00.33 Hr
    - Average stacking rate: 07.88 E10/Hr
  - Uptime
    - Number of pulses while in stacking mode: 614
    - Number of pulses with beam: 447
    - Fraction of up pulses was: 72.80%
  - The uptime's effect on the stacking numbers
    - Corrected time stacking: 00.24 Hr
    - Possible average stacking rate: 10.82 E10/Hr
  - Recycler Transfers
    - Pbars sent to the Recycler: 141.94 E10
    - Number of transfers : 8
    - Number of transfer sets: 0
    - Average Number of transfer per set: 0.00
    - Time taken to shoot: 00.42 Hr
    - Time per set of transfers: 00.00 min
    - Transfer efficiency: ∞%
  - Other Info
    - Average POT : 2.83 E12
    - Average production: 20.77 pbars/E6 protons