
Summer Shutdown at CDF

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for the CDF Operations Group

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Shutdown Notes/Motivation

- Electron Cooling installation will drive the length of this shutdown.
 - NUMI/Minos also has a long list of jobs to do - they expect to be running in FY05!
 - One thing that is different between this long shutdown and last is that they can not start up the injector chain ahead of time.
 - Tevatron Department has a long list of alignment jobs to do as well as a variety of maintenance items
 - Shutdown scheduled to begin August 23rd, beam off sometime on August 22nd
 - Official length of shutdown is still 13 weeks - startup over Thanksgiving. Subject to change
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Shutdown Philosophy

- We will not allow work to fill entire time shutdown - significant time will be reserved for calibrations/cosmic ray running/Level-2 torture tests to ensure we are as ready for beam as possible
- Therefore, we will aim to end most jobs early in week 12 and start closing up and checking things out.
- Most of our jobs can be stopped on ~1 week timescale. Even if we run into installation issues, we will not be driving the length of the shutdown
- CPR Installation will be CDF's highest priority job

Whats on our "Honey Do" list?

➤ General Maintenance/Repair in the Collision Hall

- Rework Solenoid Watt Can Vacuum System
 - COT Maintenance
 - Isolate Silicon/COT "baggies" so that silicon can remain cold during COT work
 - Install hardware to remotely power cycle all calorimeter power supplies
 - Refurbish linear power supplies
 - Install new support system for low beta quad magnets
 - Install "deep rod monuments" in CDF Collision hall to facilitate alignment in the future
 - Recalibrate ODH/Flam gas heads
 - Rework building florescent lights
 - Calorimeter sourcing
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Whats on our "Honey Do" list?

➤ General Maintenance outside Collision Hall

- DAQ/online computer Maintenance/upgrades
 - Database maintenance
 - Silicon Chiller maintenance/installation of portable heat load
 - Installation of second COT Recirculation pump for on-line spare
 - Upgrade PC's and software for slow controls system - installing a web interface for remote access
 - HVAC Maintenance
 - Motor Generator Maintenance
 - Rebuild cryo expansion engines
 - Put a subset of on-line computers on diesel generator
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Whats on our "Honey Do" list?

- Run 2B installation projects
 - EM Timing Installation on the central calorimeter
 - Calorimeter Crack/Preradiator installation
 - 1 crate test of new TDC's (temporary)
 - Fiber Installation for XFT

Schedule

- Microsoft project file for the shutdown.
- Many of the jobs we have done before so estimates are solid
- The calorimeter/preradiator job has substantial uncertainty.
 - Based on our best knowledge, the complete installation fits with about 2 weeks of contingency
 - There are natural decision points where we can decide whether to take on the next Arch's worth of installation or whether to hold
 - This is not like installing a silicon detector (for instance) where once you start, you are committed to finish it.

Calorimeter modules will be installed so that we remain symmetric in η no matter where we have to stop

Notes about Collision Hall Access...

- First Week

- IMU Steel, N/S muon walls, open immediately
- Plugs may be unbolted but will remain closed all week
- Miniskirts split to access lower notch
- Solenoid powered down for Watt can work
- Access to CMX Keystone available first few days - then it will be tough until late in the shutdown
- SE Central Arch pulled back - this will make it impossible to touch SE COT electronics racks. Also, impossible to go from east to west of collision hall on south side....
- COT switched to nitrogen
- Need to remove "Rick's counters" early in the week
- Alignment will do "As found" of low beta's on thurs/fri. Will restrict access. Toroids will close for the day that the alignment guys are working
- Plug Sourcing - As early as possible on day 1

Second Week of Shutdown

- CMX Arches pulled back
 - End plugs open for COT work
 - Isolate silicon/cot gas volume
 - Install new faraday cages on SL6, SL8
 - Grounding work
 - Access to SE COT crates impossible first 3 weeks, Access to SW COT Crates impossible weeks 4-6
 - Would like to turn off ALL Flammable gas to muon systems this week
 - Back of central arches are busy and will remain so...
 - EM timing installation underway for ALL Central arches
 - Rework of crack/preradiator electronics on SOUTH side only...
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More Notes

- CPR installation is suppose to take 3 weeks/arch. So every 3 weeks, a new arch will be pulled out.
- Since we want CPR to be phi symmetric, will decide on how aggressive to be on north side once south side is complete
- Endplugs will close in mid to late October AND remain closed for the duration of the shutdown...
- Currently, low beta quad support work to begin in early November. When this starts, torroid will be closed and no access to that side of the collision hall.
 - This is what drives the closing of endplugs
- Flammable gas to muon chambers back on in mid to late october (off August 31)

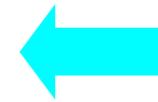
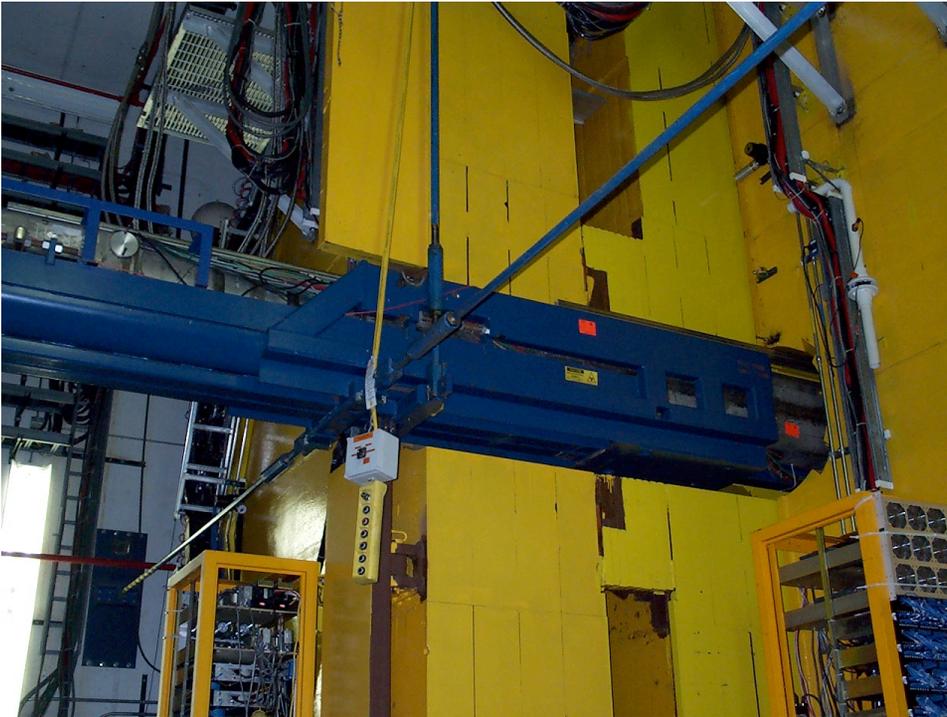
Manpower

- Technicians are all being pulled off shift for the duration of the shutdown.
 - No coverage overnight OR weekends
- Shift Coverage on day/evening shift only
 - Sci-co and DAQ ace only

Power Outages

- September 11th - down for 24 hours as FESS rebuilds our oil switch. This means trailers too. Our diesel generator will remain up. Cryo will go on a second diesel for this period
- September 13th - 30 min one to take us off master substation
- September 24th - 30 min to put us back on master sub.
 - Also on this date, BA compressor house (feeder 46b) will go down for an extended period which means we will transfer our He load to the main tevatron header
- This may change in the next few days

Low Beta Quad Magnets (A Side)



Low beta quads,
cradle and invar
bar supports

Concept of
Support Structure 



Calorimeter Preshower and Crack Detector Installation

- The installation will be done in the Collision hall
- Limits access and degree of parallelism
- Requires new work platforms that can be installed in this constricted environment

