2/19/2008

TPC tasks from Run 8 shutdown to start of Run 9

Shutdown after Run 8:

1. Purge TPC with N2, sign the blue sheet when purged
2. Shutdown gas system and establish summer maintenance N2 flow.
3. Monitor LAr tank and order refill when needed
4. If STAR doesn't roll, nothing else to do for gas system.
5. If STAR rolls, make sure TPC gets N2 during roll and in assembly building.
6. When (if) STAR rolls back, put up gas pipes to wall.
7. Shutdown platform crates and breakers - everything off except interlock system.
8. Remove pulser and put in office (plug it in!)

TPX work over summer:

1. Contact Danny and Bob Sheetz - offer assistance for FEE testing etc
2. Supervise removal of old electronics - help in "GO" decision for removal.
3. Supervise installation of new FEEs, RDOs and grounding cards.
4. Supervise (help) installation of new cables - new fiber optics from platform to TPC face and from platform to DAQ room.
5. Supervise (help) installation of new LVPS (138 new power supplies in existing boxes) Test slow controls of new LVPS and interlocks.
6. Supervise (help) installation of new DAQ PCs in DAQ room.
7. As new electronics is installed on TPC start testing with pulser and pad monitor.
8. Do R&D on new Alice prototype gated grid driver - initiate construction if needed.

Other summer projects:

9. Work with Creighton on slow controls migration from Solaris to Linux. Also possible replacement of some VME processors with PC based controls - test any new software.
10. If work is done in the IFC, make sure to test for shorts.

RUN 9 startup:

1. When Leonid comes in the fall, turn on gas system racks and PC.
2. Calibrate methane analyzers, pressure transducers, reconstitute purifier and dryer, test system leak rate.
3. Calibrate and test interlocks for gas room Pioneer methane system (3 sensors) and gap methane sensor.
4. Make sure Bob calls for maintenance on the gas room 3 phase UPS.

5. Work with CAD during certification of STAR global interlock system - confirm actions sent to TPC interlock system.
6. Turn on all platform racks and crates - reinstall pulser.
7. Perform TPC checklist - see separate sheets.
8. Confirm with Alexei the laser status - is a site visit by SpectraPhysics needed?
9. Perform pulser run - check with pad monitor. Give Danny list of bad channels for replacement.

RUN 9 Physics:

1. Three days before "start of physics", start Ar purge of TPC (typically 6 volumes = 2 days).
2. If blue sheet is signed and shift crews are in place, start P10 purge of TPC - 2 volumes.
3. Start gas system recirculation - all alarms active, all interlocks green.
4. Turn HV on chamber and make laser run - check the position of the membrane flash to check drift velocity.

Good Luck!

Checklist for TPC after long shutdown:

All tasks to be performed BEFORE pole tips are inserted.

CABLES

1. Check all cable connections on TPC face that were uncabled for maintenance work:
   - Check labels ____
   - Check ground sleeves ____

ANODES

1. Both VME processors boot and ARCNET OK ____
2. Both serial sessions OK ____
3. Ramp HV to 100 V (N2 in chamber) ____
4. All channels draw ~500 nA on ramp up? ____
5. No channels trip ____
6. Check DC current at 100 V – any new high currents? ____
7. Check hardware trip limit for all cards:
   - Inner = 1210 V ____
   - Outer = 1500 V ____
8. Test interlock from PLC

CATHODE & FIELD CAGE

1. Field cage current and voltage read out by Kiethley? ____
2. Remote power switch turns Glassman on/off? ____
3. Glassman turns on remotely? Slow controls) ____
4. Ramp Glassman to 1000V (N2 in chamber) ____
5. Check field cage currents and voltages. ____
6. Test interlock from PLC

GATED GRID

1. Both crates (control & driver) OK? ____
2. Check capacitance for each cable/sector – pin to pin & pins to ground ____

2A. Check cable ground braid to platform ground ____

3. Turn on GG – download setpoints ____
4. Pulse GG with pulser – check monitor out for all sectors ____
5. Calibrate outputs if needed. ____
6. Check that ground sleeves in back of rack are in place. ____
7. When done, ensure trigger cable from TCD is plugged in ____
8. Test interlock from PLC ____

GROUND PLANE PULSER

1. Wavetek on and downloaded pulse selected? ____
2. Downloaded pulse looks ok? (Parameters stored correctly?) ____
3. Rate limiter plugged in? ____

4. Check that rate limiter is working before plugging into fanouts ____
5. Trigger Wavetek with pulser – check all outputs from fanouts ____
6. Replace bad fanout modules. ____
7. Make sure trigger cable from TCD plugged into Wavetek ____
8. Check PLC interlock ____

FEES & MWC FEES

1. Check that all blowers in rack row 2B are running ____
2. Turn on VME crate and boot processor ____
3. Make sure all manual switches on LVPS are in remote position ____
4. Turn on all FEEs and MWC FEEs remotely. ____
5. Turn off TPC water skid – do all FEEs go off? ____
6. TPCTEMP computer running and updating? ____

LASER

1. Power on both lasers – locally ____
2. Beams aligned? ____
3. Photodiode signal ok to TCD and cathode TDC? ____
4. Check remote on/off of lasers (slow controls) ____
5. Check remote viewing of lasers ____
6. Test PLC interlock ____

TPC & GLOBAL INTERLOCKS

1. Check inner field cage air blower – on & flow switch ok? ____
2. Wet, in turn, east and west TPC Tracetek – alarm & skid stops? ____
3. Platform methane sniffer ok? Contact CAS if not ____

GAS SYSTEM

1. Close SV18 and do leak rate test with N2 ____
2. Calibrate and test trips of Pioneer methane system ____
3. Calibrate and test trip of gap methane detector ____
4. Calibrate CAI methane analyzers ____
5. Check limits and test hardware & PC alarms. ____
6. Bake out dryer & purifier ____
7. Check two big compressors ____
8. Test all gas pipe clamps and tighten ____

ELECTRONICS

1. Do a geometry run – compare to baseline ____
2. Do a pulser run – compare to baseline ____
3. Do a full pedestal run – check RMS offline _____