Trouble Reports taken from Physics Logs and MCR Logs 10-01 thru 10-07-01

Monday: 10-01-01

15:30:01- Beam Abort, 4b-time.A dropped Blue Quench
15:30:01- Quench Link Interlock in Blue ring, 4b-time.A dropped first
(15:29:56) qpa faults; b4-dhx-qp Crow,
qpa alarms; B3QDQ8_VT tq= -23, post mortems; nothing unusual

(comment by...Angelika -- Blue is bailing out around 4000 A - George suspects the lead for the snakes (?!). George is changing the lead flow by a factor of 3 and we'll try it once more. After that we resume oeration with beam. - comment by...TJS -- Y'know, the title says "GreenMainDQ.mon" but this is getting ridiculous! Anyways, it should be noted that this blue QLI is within 50 A of the location that it occurred during the ramps on Saturday.)

16:08:07- Beam Abort, 10a-ps3.A dropped Blue Quench
16:08:08- Quench Link Interlock in Blue ring, 10a-ps3.A dropped first
(16:08:00), found 4b-time.A first
qpa faults; b4-dhx-qp Crow, qpa alarms; B3QDQ8_VT tq= -23
post mortems look okay
comment by...Angelika -- Blue bailed out at the exact same current as before

Shift Summary: We had 2 stores (1151 and 1153) during this shift. The first (very short) one was dumped because cryo needed access. 1153 was voted down and was cleanly dumped after one vernier scan in PHENIX and some (somewhat successful) gap cleaning in both rings :). This was followed by 2 beta* squeeze ramps with George watching from 1004. Both ramps ended with a blue QLI around 4000 A. We'll try to resume 55 bunch/collision operation for the next shift. Angelika

Tuesday: 10-02-01

01:20:57- Beam Abort, 4b-time.A dropped {Loss Monitor 2}
01:21:22- Quench Link Interlock in Blue ring, 4b-time.A dropped first
(01:21:20) qpa faults; b4-dhx-qp Crow
qpa alarms; no neg tq's, post mortems look okay
(comment by...Jim J. -- A loss in Yellow just before the second to last stone (19) seems to have generated a BLM permit interlock at 4b-blm2. Shortly after all of the beam was dumped, we had a Blue QLI starting from 4b-time.A. Sounds like a real quench.)

0241: Setup off. yi7-sxd continues to trip at 15-18A. J. Drozd is coming in.
Joe had them cycle to p.s. to off and it seemed to work. Trying several different ramp rates, it would trip on quench, QPA had no faults. MCR contacted G. Ganetis and found that the new RHIC ramp20 had been commissioned for the last few hours unwittingly (since midnight?). yi7-sxd does not ramp beyond 13A in ramp19. There is also a beam loss related to a tune resonance just before the permit interlock when using ramp20. This turned out to be an Operations error ***(Wrong Ramp Factor)!***

0630: bi4-tq6 has tripped, causing a small amount of Blue Ring beam loss.
Looking at the QDPlots, it appears the voltage on B4TQ6 VT (RAW) dropped before t=0 causing BI4-TQ6-PS (RAW) to rise, tripping the supply.
A real quench???

11:28:35- Beam Abort, 12a-ps1.A dropped Yellow Quench
11:28:35- Quench Link Interlock in Yellow ring, 12a-ps1.A dropped first
(11:28:28) qpa faults: off, qpa alarms; Y12DRDO_DO tq= -23
post mortems; y12-dho-ps noise at 16amps on iref & current
George said qdplots showed spike on 4-20ma so we changed the buffer card.

Trouble Reports taken from Physics Logs and MCR Logs 10-01 thru 10-07-01

1310: Power Dip; Blue Ring Quench Link Interlocked; permit.2b-ps1 was pulled
13:10:15- Beam Abort, 2b-ps1 dropped Blue Quench
13:10:16- Quench Link Interlock in Blue ring, 2b-ps1 dropped first
(13:10:08) qpa faults; none, blue off qpa alarms; no negative tq's
post mortems; bo2-qd3-ps Iref drop before T=zero however, error, current & voltage began to drop before Iref. Alsobo2-qd1 & bo2-qf2-ps had fluctuations before T=zero Probable cause, we had a power dip!

20:20:45- Beam Abort, 2b-ps1 dropped Blue Quench
20:20:46- Quench Link Interlock in Blue ring, 2b-ps1 dropped first
(20:20:36) qpa faults: b2-dhx-qp Crow,
qpa alarms: 2b-qd1 (B2/1DX_DX tq= -20) post mortems; nothing unusual, QDPlots showed trouble before T=zero (see next paragraph)

G. Ganetis called from home and is looking at some data before they attempt to ramp.
No beam losses, At the time, MCR could not time find which power supply was reacting with the "negative time". They suspected the OLD "GOOD" DX magnet again at one o'clock side (where the DX ion pump showed an increase of the current). Thomas pointed out that if the cryo temperature at that magnet went UP they might need to put back the angle at BRAMS.dejan

Shift Summary After the ramp was lost due to the DX magnet quench it took a while to recover the CRYO system. George Ganetis confirmed the DX magnet quench but this time on the 1 o'clock side not the 2 o'clock!!!!!! After the recovery the next try-out was again unsuccessful due to the control problem with the FEC 5c-ps1. dejan

Wednesday: 10-03-01

0030: The beam in both RHIC Rings was lost at the beginning of the ramp without any permit interlocks. A "no heartbeat" alarm for cfe-5c-ps1 came up shortly afterward. Found bad power supply in chassis, replaced cfe-5c-ps1 with a spare VME chassis.

0632: Development off. Both RHIC Rings have had Quench Link interlocks. The 12 o'clock DX heaters have fired. The links were pulled first from 12a-ps1.
06:33:00- Beam Abort, 12a-ps1.A dropped Blue Quench
06:33:01- Quench Link Interlock in Blue ring, 12a-ps1.A dropped first
06:33:02- Quench Link Interlock in Yellow ring, 12a-ps1.A dropped first
(06:33:52) qpa faults; none, all blue & yellow off, qpa alarms; no negative tq's also no data for 12a-qd2 blue or yellow, post mortems; bi12-qf1-ps and yo12-qdq1-ps show a voltage spike and error change before T=zero. They are at low current 1.25amps, could this be caused by the 12 O'clock DX heaters firing?

11:09:32- Beam Abort, 12a-ps1.A dropped Blue Quench
11:09:33- Quench Link Interlock in Blue ring, 12a-ps1.A dropped first
11:11:46- Quench Link Interlock in Yellow ring, 12a-ps1.A dropped first
(MCR: At 11am stopped injection activity. In order to be able to ramp George needs to reload the quench protection software for FECs 12a-qd1 & 12a-qd2, Estimated time is 30-45 minutes. 1150: finished reloading the software for the qd FECs. He suspects that the UPS for the 12a-qd1 & -qd2 FECs is bad and also notes that UPS for the 7 o'clock qd FECs needs to be replaced too; Running the Quench Recovery Program to bring the links back up

Trouble Reports taken from Physics Logs and MCR Logs 10-01 thru 10-07-01

17:39:06- Beam Abort, 5e-ps2.A dropped {Loss Monitor 1}
17:39:09- Quench Link Interlock in Yellow ring, 5b-ps1 dropped first
Comment from MCR: It appears the Yellow dump kicker was not charged and beam was still in yellow when we ramped down

17:51:57- Quench Link Interlock in Blue ring, 12a-ps1.A dropped first

22:03:41- Beam Abort, 12a-ps1.A dropped Blue Quench
22:03:42- Quench Link Interlock in Blue ring, 12a-ps1.A dropped first

22:17:43- Beam Abort, 10a-ps3.A dropped Blue Quench
22:17:44- Quench Link Interlock in Blue ring, 10a-ps3.A dropped first
(22:17:32) qpa faults: none, qpa alarms: none

22:31:55- Beam Abort, 12a-ps1.A dropped Blue Quench
22:31:55- Quench Link Interlock in Blue ring, 12a-ps1.A dropped first

22:42:09- Beam Abort, 12a-ps1.A dropped Blue Quench
22:42:10- Quench Link Interlock in Blue ring, 12a-ps1.A dropped first

(Note: For the above 12a-ps1-A drops from 17:51:57 thru 22:42:10, read next paragraph)
C. Schultheiss helped MCR determine that the 12a-qd1 quench detector may have a problem. He, traced the problem to two stuck channels in 12a-qd1. and suggests we contact G. Ganetis who is working to fix the 12a-qd1 problem from home. G. Ganetis would like the planned 12 o'clock UPS replacement done now rather than wait until tomorrow. He will set up the software on 12a-qd1 and qd2 after this is done. Contacting specialist D. Oldham who came in and replaced the UPS for both 12 o'clock Quench Detector.

Thursday: 10-04-01

00:11:33- Quench Link Interlock in Yellow ring, 12a-ps1.A dropped first (due to UPS change at 12 O'clock quench detector *See paragraph above*)

0130: The Blue QLI has been cleared. bo6-tq6 tripped during the process.

0144: The Yellow QLI has been cleared. bo6-tq6 has tripped again. The MCR will try to reset it again. After several attempts, bo6-tq6 has stayed on.

03:54:57- Beam Abort, 10a-ps3.A dropped Blue Quench
03:54:58- Quench Link Interlock in Blue ring, 10a-ps3.A dropped first
(03:54:52) qpa faults; QPO7-R10ABQF3-bo10-qd3-qp CROW, bi9-dhx-qp CROW
qpa alarms; no neg tq's, post mortems; lots of action? Bo10-qd7 Iref dropped before T=zero

04:03:22- Quench Link Interlock in Yellow ring, 3b-ps1 dropped first
(04:03:20) qpa faults; b4-dhx-qp crow, qpa alarms; 1b-qd1 Y3DSA2_A1VT tq= -23
post mortems: nothing unusual

11:56:53- Beam Abort, 3b-ps1 dropped Yellow Quench
11:56:54- Quench Link Interlock in Yellow ring, 3b-ps1 dropped first
(11:56:44) qpa faults; none, qpa alarms; 3b-qd1 Y3DSA3_A2VT tq= -24
post mortems; nothing unusual

Trouble Reports taken from Physics Logs and MCR Logs 10-01 thru 10-07-01

12:03:12- Quench Link Interlock in Blue ring, 3b-ps1 dropped first
12:03:12- Quench Link Interlock in Blue ring, 3b-ps1 dropped first
qpa faults; none, qpa alarms, no data, post mortems; b4-dhx & b4-dho shows voltage and error to be unstable, however, because the supplies are near zero current this is normal?
(12:07:18 comment by...leif -- this qli not part of the plan, but George is out there preparing some software for the 2m beta* ramps, which are next on the list.)

1250: PLCs - 11B, 1B, 3B, 6B, 7B, 7C, 9A, & 9B were reset
12:54:44- Beam Abort, 6b-ps1 dropped Blue Quench
12:54:45- Quench Link Interlock in Blue ring, 6b-ps1 dropped first
This was the result of resetting PLC-6B

16:18:06 (yo9-tv3-ps tripped off) comment by...leif -- ok. so Vadim is successful!!, we get to top, now surely with a machine with larger vertical aperture. At the top very low collision rates and y09-tv3 tripped off. Brian tries to bring on, rates improve but then supply trips at about -2 amps. Vadim resteering to compensate - not nice.

1624: Cryo lead flow interlock, causing the correctors in the 10 o'clock area to trip.
(cfe-9a-ps1 was reset The correctors in 10 o'clock have been turned back on after being turned off by Cryo's lead-flow interlock in the same location)

Note from MCR: a cryo PLC communications problem; 10/11 o'clock correctors all ramped to zero during a store without pulling the permit, causing beam loss (singles rates in STAR up to 3+ MHz!) before loss monitors pulled the permit. No experiments reported suffering serious impacts from this event. Comment by...TJS -- The lesson to be learned here is that if they are not already, the PLC corrector interlocks should be connected to the permit as well. The PLC interlock pulled all correctors in this region down, which created serious beam loss for several seconds around the ring as the orbit was perturbed -- and so were we.

16:50:46- Permit is down due to 4b-time.A, which is lead flows from cryo

17:51:02- Beam Abort, 3b-ps1 dropped Yellow Quench
17:51:02- Quench Link Interlock in Yellow ring, 3b-ps1 dropped first
(17:5:56) qpa faults; none, qpa alarms; 3b-qd1 Y3DSA3_A2VT tq= -23
post mortems: Yellow Main Dipole noisy

18:34:30- Beam Abort, 3b-ps1 dropped Yellow Quench
18:34:30- Quench Link Interlock in Yellow ring, 3b-ps1 dropped first
(18:34:24) qpa faults; none, qpa alarms; 3b-qd1 Y3DSA3_A2VT tq= -23
post mortems: Yellow Main Dipole noisy (*see following comments below*)

(Yellow ring quench link interlocked on the down leg of the hysteresis ramp, just before injection; permit.3b-ps1 was pulled; G. Ganetis is being contacted.)

(comment by...Johannes -- Exactly same place a QLI happened at 1pm.)

(comment by...TJS -- Call from George re the yellow 17:50 QLI near injection current. He suggests that there may be either a serious yellow main dipole power supply or ground fault developing that's making this problem get worse. A subtle problem, requiring possibly a long time to seriously diagnose in situ -- up to a couple of days, perhaps. He has desensitized this quench detector to the limit of comfort, but the 25 Hz oscillations in the voltage before the quench are indicative of a possible serious problem.)

20:56:42- cfe-11a-ps1 became unpingable; it was reset without incident, and WFGs were reinitialized yadda yadda yadda. TJS

Trouble Reports taken from Physics Logs and MCR Logs 10-01 thru 10-07-01

Friday: 10-05-01

00:08: bi4-tq6 has tripped.
MCR will dump beam and return to injection to reset the tripped p.s. and a
2 O'clock PLC. TJS

11:41:00- MCR had trouble bringing the current down in the supplies after store. The init WFG's failed requiring the reseting of the two FEC's: cfe-9a-ps1and cfe-9a-ps3. After correcting the FEC's, the magnets ramped down.

Saturday: 10-06-01

02:31:51- Beam Abort, 6b-ps1 dropped Blue Quench
02:31:51- Quench Link Interlock in Blue ring, 6b-ps1 dropped first
The post mortem plots showed that the voltage was railed for the bi5-tq6 supply before the link was pulled. G. Ganetis was contacted and reported that the supply needs to be replaced. It had pulled the blue quench link due to cross talk in the quench detector.

02:54:12 comment by...jak -- The bi5-tq6 supply had tripped to standby-error and indicated quench and FET faults. J. Decicco from Support investigated and smelled burnt electrical components. T. Nolan called in and found housekeeping p.s. had a bad -15v reg and the lower FET control card was pulling down the +15v reg. Entire p.s. was replaced.

06:15:47- filled the machine and the prep failed due to cfe-5b-ps1. rebooted the FEC, but it still complained about error for two wfgs. MCR had accidentally sent an AC reset, instead of a reset, so both quench links were pulled.

09:10:17- Beam Abort, 10a-ps3.A dropped Yellow Quench
09:10:17- Quench Link Interlock in Yellow ring, 10a-ps3.A dropped first

09:13:15- Beam Abort, 10a-ps3.A dropped Yellow Quench
09:13:16- Quench Link Interlock in Yellow ring, 10a-ps3.A dropped first

09:45 The QLI recovery script halts on ans FEC error although there are no FEC alarms. G. Genetis is called at home to investigate.

09:45:17- Beam Abort, 10a-ps3.A dropped Yellow Quench
09:45:18- Quench Link Interlock in Yellow ring, 10a-ps3.A dropped first

09:45:18- Quench Link Interlock in Blue ring, 1b-ps1 dropped first

10:37:02- Problems with QLI recovery. George is helping us from home.

11:31:34- Beam Abort, 10a-ps3.A dropped Yellow Quench
11:31:35- Quench Link Interlock in Yellow ring, 10a-ps3.A dropped first

14:46:37- Beam Abort, 2a-bcm1 dropped {Loss Monitor 1}
14:46:38- Quench Link Interlock in Blue ring, 2b-ps1 dropped first
Cryogenic confirms that two magnet string temperatures elevated above the set point. The two strings in sector 12-1 are, Blue outlet temp in Dx and the qx recooler.

16:34:59 bi4-tv6 tripped when the blue losses started

2318 -- The bo7-tv7 supply has tripped and will not come on.

Trouble Reports taken from Physics Logs and MCR Logs 10-01 thru 10-07-01

Sunday: 10-07-01

0414 -- cfe-5c-ps1 was reset.

08:38:28- yi2-qs3 could not be turned on originally but after like 10 minutes mcr was able to turn it on. J. Wilke is called at home, and he informs that the power supply may have to be replaced. Since the repair requires a ring entry, MCR will attempt the ramp without it.

22:44:09- Down ramp to injection failed. Two FEC's: cfe-11b-ps2 and cfe-3c-ps1 needed to be rebooted.

23:22:17- Beam Abort, 11b-ps1 dropped Blue Quench
23:22:19- Quench Link Interlock in Blue ring, 11b-ps1 dropped first
The Cryo Control Room reports that they have several problems related to the latest QLI.

23:26:49- Cryo has reported several interlocks and is starting recovery.

23:32:36- cfe-3c-ps1 went down at the time of the interlock and needed to be reset. The permit was also lost due to a 12a-blm1 interlock, and a Blue Vacuum interlock due to a trip of ion pump bo11-ip-pw3.1.

23:49:22- Resting cfe-11b-ps1