End Week 25 (June 27th 2010) – Status of Accelerators

Steady running, reduced intensities from LINAC2 (RFQ problem) over the weekend.

ISOLDE (Emiliano Piselli)

GPS:

Beam to GLM and ISOLTRAP without any problem till Thursday, when we have changed target.

On Friday we did setup the separator with stable beam.

HRS:

Target change done on Tuesday. Stable beam tuning done on Wednesday and Thursday morning. Beam to users from Thursday afternoon.

From Saturday early morning isolde can't take high beam since there is a problem in the RF of LINAC2.

HRS run is for WITCH experiment, who takes beam from Isolde through REXTrap. The run is going well, without any problem from the machine point of view.

PS (Yannis Papaphilippou)

The PS had a very good week with only minor faults. We delivered regularly all EAST beams, the NTOF beam, the AD beam, the high-intensity beams for SPS (with limited intensity during the week-end due to the linac2 RFQ problem) and single bunch variants for the LHC (PROBE and INDIV). Some setting up was done on the LHC 150ns beam and a single batch LHC beam (injecting a H2 +1 type PSB bucket in the PS).

The events of the week:

On Monday afternoon, there were several trips of the CT bumpers power supply (PE.BFA9P "pedestal") and the specialist solved the problem by first changing the pulsed resonant power supply charging the PFN and some additional retuning (~1.5h without SFTPRO/CNGS).

On Tuesday, it was confirmed that the replacement of the TOF transformer could not take place before week 35, since a vacuum chamber has to be manufactured. In this respect, and as the dedicated MD was cancelled on Wednesday, NTOF proceeded to measurements for cross-calibrating a wall current monitor in the experimental area with encouraging results. This may be the solution for raising the intensity above 700E10, pending some logging issues for monitoring the NTOF integrated intensity.

During Friday night and in the shadow of the LINAC2 RFQ problem, the 10MHz cavity 66 tripped without possibility to reset and replacing it with cavity 11 did not help to recover the beams. A specialist was contacted and he intervened by changing the NIM crate power supply, resetting several interlocks and cleaning the dust of the tube driver (ready for beam after 2h). Two additional cavity trips (C36 and 96) on Sunday morning needed a short intervention of the specialist (40min without beam).

During Friday night an intermittent jitter was observed on the PS/SPS synchro for the LHC beams. The piquet LLRF passed by on Saturday morning but his investigations were inconclusive on the origin of the jitter (a phase loop is suspected, when the intensity is high).

PS (Jocelyn Tan)

The PSB has been running smoothly till Friday afternoon.

Friday : at 15:20 when Isolde wanted to take the beam, their Watchdog cut the beam.

It took 2hours to checks the monitors with the specialist, the transfer line magnets,

the parameters of the machine before extraction, without finding any weird setting.

Finally, after a slight reduction of the number of turns on Ring4, we managed to serve Isolde with 3200E10 protons.

They wanted to have 2uA, but could get only 1.7uA due to the limited number of cycles allocated.

Saturday, at 11:15, the beam was lost on ring 3, in the first few ms of the cycle.

It took 4 hours to diagnose the Qstrip GFA board. The piquet CO came and replaced it.

Total down time : 5h45 or all users but the LHCPROBE and LHCINDIV which

are set-up without these Qstrips.

Beam preparation:

Special LHC beams with max intensities have been prepared for the PS MDs :

- LHC50 : single batch with six bunches. 250E12 protons per ring within 0.9eV.s, Eh,v <3.5um for rings 2+3, and larger for ring 4 (Eh/v=5um /3.8um => to be improved/reduced)
- LHCINDIV single bunch in ring3 : 24E11 protons within 0.3 eV.s , Eh/v=0.7um /1um

SPS (Karel Cornelis)

Monday and Tuesday the SPS continued its smooth running from the weekend. The Fixed target and CNGS beams were stopped at midnight on Tuesday in order to cool down for a short technical stop on Wednesday. This stop was originally planned for Thursday, but due to a change in LHC imperatives, the stop was shortened and moved to Wednesday. The interventions on the SPS (QD repair, leak repair on MKP, camera in TT10, radiation survey in TT10, TRX5-6, electrical network re-configuration, change of water filters in CNGS,…) were finished by 14:00. Since the stop was shortened, no vacuum interventions took place. After restarting we had to stop again for 1 hour because of a controls problem with the access system. All beams could be re-established at around 16:00. Everything worked fine, except for one thing: MSE4 had very frequent current errors on the flat top, resulting in missed extractions for CNGS. The stability problem of the MSE4 was traced back to the change in compensator configuration an on Thursday the power converter people and electricians changed the configuration a few times in order to get a stable MSE4. The compensator went down two times in the process, causing several hours SPS stop. Finally a good configuration was found and the MSE is pulsing

again in the interlock limits. From the SPS side the weekend was smooth, but the intensity for FT and CNGS were only 30% due to a problem with the LINAC (since Friday night) , which is still ongoing.

TI (Jesper Nielsen)

Monday: A warm welcome to Ga In Kim who arrived this Monday, he will be redoing all the SPS views!

Tuesday: Started out quiet, until we lost CRYO in point 4. We profited to get rid of some "old" alarms that needed an access to be taken care of. Whilst they thought restarting around 3AM, some other problems occurred, and they started only around 8AM.

FOM:

• For nTOF, a transformer to be changed, which can be done only in September. They can run with nominal without, perhaps even higher with a workaround form their side. More news to come.

• Linac 2 had some problems with a rack, specialist was not easily reachable which caused some complaints. Klaus specified that specialists are not piquets, they're working on a best effort.

• Isolde, Tuesday intervention on water circuit caused stop of vacuum (vacuum cooled by this cooling system) Remote controls of vacuum pumps need to be installed / discussed. Apparently this is already ongoing for other vacuum systems, and some views exist already in PVSS. We might need to re-talk with vacuum in order to clarify which systems we should look after?

• LEIR were not able to restart their circuit yet, they'll need a stop of at least 3 hours in order to do so. Please contact Serge in case PS has a breakdown.

Wednesday: Since CRYO was back only around 8AM, we had an access possible in R68, Silvia and Franck went in to check on the whole light vs ODH story. They found that the cables for the lights and the ODH do not lie together in the tunnel, however they do in the RE. An intervention will therefore be planned for the next technical stop!

TIOC:

•pH problems in building 247. The consigne is not 100% up to date. Arnaud is taking care of this. The firemen are also preparing a new consigne on their side.

• For the problems with the BIW in point 4, Dennis explained that they need to change a breaker since the caliber was not correct, and it's a B-curve - it needs to be a C. They'll do the intervention next Monday.

• nTOF, see consigne further down.

• For the gasoline tanks in Meyrin and Prevessin (see Patricks mail), Brigitte Bonardi is the responsible. However they're not all that sure of the actions to take if we have an alarm, but they will inform us when it's decided.

Thursday: Some big problems with the SPS compensators. SPS and LHC stopped when compensator tripped on tap moving failure. SPS has had some problems with the extraction for CNGS since yesterday, some think it could be due to the reconfiguration of the EL network. We weren't aware of these problems before this morning (information from EPC).

Some problems with the ventilation in SR5 this evening, the hall was around 50 degrees! (Information from EIC) to be investigated.. If you have any information, please fill the minor!

Friday: Some confusion about the compensators, and electrical distribution. The problems we had yesterday were in fact not at all related to the tap moving failure. The tap moving failure appeared because the compensator 1 is not powerful enough to compensate the full load, and the tap therefore passes it's maximum position, trying to regulate. Gerard explains that BEQ1 has to work with BB3+BEQ3 for full load operation. See "old" presentation attached.

Consignes ongoing:

nTOF:

Comme vous le savez on a eu des problèmes dernièrement avec un capter de débit pour le circuit nTOF (événements mineurs et majeurs)

Une solution temporaire a été mise en place afin de ne plus arrêter la physique pour ce défaut, ils ont enlevé l'interlock sur ce capteur. On va toujours voir l'alarme en TI, mais cela n'arrête pas le circuit.

La consigne si on voit cette alarme est donc de se logger sur le wizcon (vcvptcoolntof) et vérifier l'état du circuit. Si tout tourne normalement, et il n'y a pas de problèmes sur le débit, on peut laisser tourner comme ça et prévenir Yannick Body pendant les heures ouvrables.

En effet le capteur est en commande, et sera changé pendant le prochain arrêt technique.

UA63 surveillance via webcam: No longer needed.

LHC – full details under coordination at:

3 nominal bunches per beam into physics over the weekend. 5e29 cm-2s-1 – record luminosity.

http://lhc-commissioning.web.cern.ch/lhc-commissioning/