

Accelerator complex status

End week 30 (Sunday 26th July 2015)

TI (Jesper Nielsen)

Weekly summary: <https://wikis.cern.ch/display/TIOP/2015/07/27/TI+summary+week+30%2C+2015>

Linacs (Rolf Wegner)

It was a good week for Linac2. Stable running nearly all week, just a number of resets were needed

- Wednesday evening number of systems had to be reset after the electric glitch (twice)
- Thursday afternoon BHZ20 had to be reset
- Monday morning LA1.QDN15 had to be reset

Also Linac3 had a fairly good week.

On Monday (20 July) the positions of both ovens were adjusted inside the source. This cured instabilities seen over the weekend.

On Wednesday morning the vacuum pressure gauge controller of the ITL line broke and had to be replaced.

The electric glitch on Wednesday evening stopped Linac3 but systems could be restarted on Thursday morning without major problems.

Since then Linac3 is producing beam continuously with a fairly good stability.

LEIR (Django Manglunki)

A slow week for LEIR

The week was devoted to more studies in the transfer lines, trying to understand the aperture restrictions and reasons for losses, optimization of the transmission and injection intensity, and debugging of the instrumentation.

Up to 80% of the expected intensity is now injected on the EARLY beam.

Solved issues:

- On Wednesday evening several devices tripped due to the thunderstorm and were resettable easily. The power supply for the electron cooling solenoid however had to have its front panel exchanged.
- On Thursday 23/7 JC.Bau has fixed a race condition in the MTG, which could have affected all the other machines but was diagnosed on LEIR, where some start pulses would be missing, tripping the injection bumpers.
- Over the week-end 25-26/7, Ana Guerrero had to reinstall a former version on the MTV software which exhibited buggy behaviour, failing to trigger on some cycles. This may be a temporary fix and needs to be tested thoroughly this coming week.

Remaining/new issues:

- Still many devices won't show on LASER alarms when tripping. A JIRA has been reissued again.
- Main magnetic field and circulating intensity are not acquired synchronously on OASIS. OASIS team has been notified.
- Vertical semgrid ETL.MSFV30 not working. BI has been notified. If an intervention is needed it can happen any time as that particular device is inside the LEIR shielding, not the switchyard.

ISOLDE (Lefteris Fadakis)

Important issues during the week

BE-CO issues

On Wednesday we could not start several of our (most critical) applications (iso HT, iso BD, mass control).

Contacted Greg Kruk from BE-CO and he made it possible for them to start. This issue happened in the past and after discussion in the Controls exploitation meeting it was said that BE-CO will provide a permanent solution for that.

Ticket: <http://issues.cern.ch/sr/jira.issueviews:searchrequest-fullcontent/temp/SearchRequest.html?jqlQuery=description+~+%22eventId=1972198%22>

TE-EPC server buffer shortage

This issue happened in the past (December) It was again with PowPLC class. Back then they increased their server buffer and now they had to increase it once more on Thursday 23/07. To be further discussed with them.

Ticket: <https://issues.cern.ch/browse/APS-5078>

TIMBER

I realized that data were not being stored in TIMBER, from 15th until the 23rd, for the current acquisition of two of our devices (YHRS.SEPMAG60DEG:I_MEAS and YHRS.SEPMAG90DEG:I_MEAS). ACC Support said that those devices were migrated from rda2 to rda3 and then back to rda2* and they were not informed so data were not stored. They restarted the logging process responsible for them and since then it is fine.

Ticket: <https://issues.cern.ch/browse/CALS-3195>

*Devices were the HRS power supplies which were going to ERROR since the TS when they were migrated to rda3 until it was decided to go back to rda2. Since then they are investigating what was the problem with rda3 and our devices.

GPS

Target change on Tuesday, the new target #536 was outgassing a lot so we decided to heat it up slowly during the night. On Wednesday we saw that the HT could not hold more than 40kV. YGPS.BSG1100 is not working. Stable beam tuning on 39K and beam delivered to users on CA0 at noon. Proton scan performed on 142Cs. On Thursday all PowPLC power supplies were in error

(mentioned above). Once the buffer was increased, TISD did target optimisation for 51K and users took beam at 17:30. They continued taking radioactive beam through the weekend with only a line heating drop on Saturday morning target heating drop on Sunday morning. The line drop caused several power supplies to trip. They went back to normal after a reset.

HRS

Radioactive beam for ISOLTRAP until Wednesday. On Thursday both HRS magnets power supplies were in error. TE-EPC was too busy at that time to investigate, they asked that if it happens again we should contact the first line support.

Target change and front end inspection on Monday morning.

Booster (Alan Findlay)

Overall we had a decent sort of a week with only a couple of problems depriving us of beam.

Tuesday afternoon it was found that the R3 shavers stopped responding to commands and we had no acquisitions, which was mainly a problem for the EAST & MD users, as we could set the value locally to provide the nominal LHCPILLOT for LHC. As the experts were still baffled by the end of the evening, we ran overnight with this situation and the teams came back the following morning to continue. The old equipment specialist D. Calcoen joined the teams and quickly noted that the property in the FESA class "Transmission" was set "false" when it should have been set "true," and after putting everything back in order, beams were back to normal after 20 hours.

When trying to understand the source of the problem, it was found that this property was inadvertently changed during the MD session the previous afternoon. This launched lengthy discussions as to what properties should be available to be controlled, observed or neither, which, needless to say, are still ongoing.

Wednesday evening saw a couple of electrical glitches take down the machine for about an hour in total, then R3 went down for an hour and 40 mins due to a circuit breaker in a LL rack tripping and needing the LL RF piquet to intervene.

Otherwise the MD program continues and we're using the Finemet as an H=2 cavity for the HRS & GPS beams on R4 as part of the reliability run for this system.

PS (Gabriel Metral)

Semaine sans problème majeur pour l'opération de la machine PS.

Quelques courts arrêts faisceaux après déclenchements d'équipements (glitch secteur).

Un faisceau EAST dégradé pendant 20H du a une perte de communication avec une alimentation du PSB. (Une discussion sur la visibilité de toutes les propriétés qui influencent le bon fonctionnement des équipements doit avoir lieu pour éviter ce type de problème)

Des séries de mesures d'émittances sont faites sur les faisceaux LHC pour tenter d'expliquer l'asymétrie du faisceau mesure.

Le faisceau MTE continu d'être délivré au SPS pour leur setting up.

SPS (Karel Cornelis)

After a smooth operations start of the week, things became a little bit more hectic as from **Wednesday** evening. At around 9p.m. a power glitch, due to thunderstorms stopped the SPS. It was followed by a second glitch a little bit later. The main problems were due to a stop of cooling water, which resulted in a difficult re-start of MPS and especially the RF cavities. It also caused a heating of the Faraday cage. The result was a 5h stop, which was followed later in the morning by 3h stop due to BFA problems in the PS.

Friday, the HiRadMat experiment on LHC collimators was started. They took beam during the whole night until Saturday morning. In the meantime the doublet beam was prepared since it was planned to be used during the weekend.

On **Saturday** the slow resonant extraction was particularly perturbed by small current perturbations on the QF. This is a recurrent problem since a long time and EPC has never been able to understand and/or cure the problem. It normally happens on a few cycles per day, but on Saturday it occurred almost every cycle during a couple of hours.

HiRadMat was resumed on **Sunday** until LHC was requesting to inject the doublet beam for scrubbing. Shots of up to 24 doublet bunches were sent to LHC.