Accelerator Complex Status

End week 31 (Monday 03 August 2015)

TI (Peter Sollander)

Monday, July 27	06:43 – LHC sector 2-3 demineralised water stop. The LHC is already stopped, so no impact. The problem seemed to be a leak, but after investigation, rather is a problem with a valve. An access will be needed to fix the valve. 17:19 – Inundation alarm at ISOLDE, drain pump FTDP-00086. This pump is located in a highly radioactive area and requires cool down and RP presence for intervention. Camera inspection shows no serious leak, but we need to go in for an inspection. Cool down for 24 hours. Intervention scheduled for Tuesday afternoon. ODM 22248842
Tuesday, July 28	17:00 – ISOLDE intervention for water leak. A leak is found on a magnet. Repair scheduled for Wednesday 29.
Friday, July 31st	01:59 – BEQ2 compensator tripped on an emergency stop. SPS was already down, but restart was delayed and the LHC had to wait for beam from the SPS. The problems was a faulty emergency stop button (humidity problem inside the button). 12:58 - SPS restart delayed due to evacuation alarmes in BA2. The LHC is already stopped so no resultant delay for suppling beam. A technical fault on the evacuation and fire detection systems triggered a false evacuation of the BA2 Tunnel area. After confirmation of cause, SPS restarted whilst repairs on the two safety systems were carried out. 22:43 - A water leak was reported at the main entry of the hotel (building 38). An intervention was made between the fire brigade, SIG and EN-CV to isolate the leak.
Saturday, August 1st	10:00 Following the intervention during the night to isolate the water leak, SIG returned on site and repaired the split water pipe. This intervention was coordinated with EN-CV and the Fire Brigade and involved the evacuation of part of the pedestrian footpath to allow access to the pipework. Repairs were completed by 13:30 with the footpath repaved.

LINAC2 (Jean-Baptiste Lallement):

A very good week for the Linac2. Got only a 5 minutes interruption due to a buncher cavity (LI.CBU02) trip on Wednesday.

LINAC3 (Jean-Baptiste Lallement):

The source tripped on Tuesday morning. The +/- 15 V power supply was replaced (4 hours stop).
On Thursday, the source current went down whatever tuning we tried (10-15 µA delivered to LEIR on that day).
The ovens were refilled on Friday. Oven2 found broken was replaced with a spare.
Source setting-up is on-going.

LEIR (Maria-Elena Angoletta):

More studies on the transfer lines for the user EARLY were carried out, trying to improve the injection intensity that still remains at around 50% (or less) of the expected value.
Following the problems spotted last week, tests and measurements were carried out by BI on the vertical semgrid ETL.MSFV30. An access was also performed on Friday afternoon, which did not show any evident malfunctioning apart from a short-circuit between two wires (which are therefore unusable). Unless we break the vacuum (which is not going to happen before 2016) to see where the problem is, it's difficult for the BI experts to do more. To be followed up.
On Thursday morning the intensity from the Linac3 dropped to values that were not useful (6 microamps in T41), so we investigated whether the over refill could be advanced by one day, which was not possible.
The oven refill started on Friday as planned; beam is expected to be sent back to LEIR on Tuesday morning.

PSB (Klaus Hanke):

An extremely calm week for the PSB.
We delivered our physics and MD beams, notably for the MTE MDs in PS and SPS.
The only technical problem worth noticing was the failure of an ISOLDE line steerer BTY.DVT324 on Friday evening, fixed by First Line with the help of the specialist after about 5h (re-tuned the capacitor voltage). This perturbed ISOLDE operation.

ISOLDE (Miguel Luis Lozano Benito):

It has been a quite difficult week at ISOLDE with different problems.
On Tuesday a water leak was developed on one of the cooling water connections for the BTY line.
An intervention was needed to fix it the day after.
Very poor laser ionization on HRS target was found after. A coated laser window was thought to be the reason so a laser window exchange was done on Thursday.
Unfortunately that didn't solve the problem so after more investigations we found that one of the slits (HRS.TCS.2400) had moved partially in blocking the

lasers path but not the beam path. When we tried to move it out it didn't respond so experts had to be contacted for recalibrations.
Once the laser path was free and the lasers could make their way into the target ionizer everything started to work properly. Laser ionized Cd was then seen and the experiment started on Friday afternoon.
On Saturday night users called because there was a vacuum problem. When I came I found that the RC010 turbopump was broken and the valve above could not close.
After some interventions and thanks to the vacuum support (Jose Antonio Ferreira) we managed to close the valve and pump that sector using the adjacent ones. Beam was back to uses at around 12.30 AM.
But happiness is always a short moment because the day after (Sunday) the pump laser for the dye laser broke and Cd isotopes were not available any more for the experiment. Experiment took then 98Rb for neutron emission during the night.

PS (Jakub Wozniak):

It was a very good week for the PS with only occasional, minute-long stops.
All the operational beams were delivered as expected namely AD, TOF, SFTPRO, EAST1/EAST2 and all required LHC beams.

AD (Bertrand Lefort):

It was a really smooth week for AD with almost no down-time. The beam has been stable and we've received no complaints of any kind from the user.
The overall ejected intensity is slightly lower than before because we have asked the PSB to reduce the injected intensity in order to tackle some radiation monitor issue we have in the experimental experiments.
Monday 28.
A radiation monitor has been triggered but there is no means (SW) to identify it. It has been asked to RP to add to the workings Sets all the AD RP monitors in order to have the Inspector application checking them continuously. To be followed. Robert Froeschel from RP is checking if it is possible to add the RP monitor to the working Sets
Wednesday 30
RF tomoscope triggering issues: a new version shall be released next week.
Saturday 1st of August
A flickering power supply kill one hour of ASACUSA beam.
Most of the Power converters issues are solved by replacing the VERO 5V power supply located on the right part of the converter. This is a 1 minutes fix. Outside of working hours, calling First line for this kind of intervention takes at least 35 minutes. This is a pity in terms of up-time and a waste in terms of money. Could we (OP) have an official access to few Vero spares ?

SPS (Hannes Bartosik):

It was a busy week for the SPS. The nominal 25 ns beam was regularly delivered to the LHC for scrubbing. In parallel the HiRadMat experiment on LHC collimators continued until Thursday evening during periods without LHC beam request. The 25 ns doublet beam with up to 36 bunches was sent to the LHC for a test on Wednesday, but the beam was dumped in the LHC right after injection

due to losses. A new SPS cycle with a reduced injection plateau was prepared during the weekend to minimise emittance blow-up in the SPS. The new cycle is setup and ready for LHC extraction. In combination with the newly prepared BCMS variant of the doublet beam provided by the PS, transverse emittances similar to the nominal beam could be achieved. Besides the frequent super cycle changes due to LHC filling and HiRadMat, further progress on the improvement of the spill quality on the SFTPRO cycle was made. Nevertheless, during certain periods the slow resonant extraction was perturbed by the recurring problem of small current glitches on the focusing quadrupoles.
Considerable downtime was accumulated towards the weekend. Thursday night more than 5 hours downtime were caused by a faulty emergency stop button on the main power supply and subsequent problems restarting the 800 MHz RF cavities. On Friday an access was needed to change the cooling circuit level sensor on the 800 MHz cavity. When going back to physics a false evacuation alarm was triggered in BA2. More than 2 hours were lost in total.
On Sunday the operational scraper for LHC beams remained blocked in parking position (horizontal slow motor). The LHC injection had to be slightly delayed due to the setting up of the spare scraper.

LHC (From the 8:30 meeting):

LHC was in scrubbing mode with 25 ns beam last week.
Monday 27/07: Recovery of two tripped sectors (23 and 34) due to water problem in point 2.
Several losses of cryo in different places throughout the week. Accesses were given during recovery.
A new version of FIDEL was implemented, taking into account the powering history for the tune was deployed
Further investigations on the movement of the TDI in point 2 and 8 were undertaken, completed with vacuum measurements.
RF voltage was changed to shorten bunches, hence enhance scrubbing.
The plan is to inject doublet bunches today.
For more details:
http://indico.cern.ch/event/434713/
and
http://indico.cern.ch/event/434717/
These also include presentations on the scrubbing,