

Accelerator Complex Status

End week 49 (Monday 11 December 2017)

In view of the approaching Year End Technical Stop, the Accelerator complex is running with a reduced number of users, such as Xenon ions for the SPS North Area and the PS East Area and proton beams for AD and AWAKE. In addition today a COLDEX run will take place. The whole accelerator complex will be stopped on Monday 18 December at 06:00.

TI (Jesper Nielsen)

Quite an eventful week and very busy weekend. Not too much noted about the weekend, it was a lot of intervention on “puisards”, ventilations and other smaller things all more or less connected to the bad weather.

On Wednesday 06.12 at 12:27 there was a water leak in the LHC tunnel, in the RI13 area. A Hole was being drilled in the concrete slab, and unfortunately also in the raw water supply pipe that is in the slab. The pipe was not situated as indicated on the drawings. The tunnel was evacuated (by phoning people, not a real evacuation) and access was restricted until repairs were done.

On Thursday 07.12 at 20:29, the TI operator noticed many missed calls have been noted lately, and traced back to a poor network coverage of the CCC. TI missed quite a few important calls, that should have been forwarded to the GSM and although the TI operator was in the CCC the calls didn't come through.

On Saturday 09.12 at 01:51 an electrical perturbation, caused all injectors to trip. Confirmed by RTE as a perturbation on the 220kV network.

Also on Saturday at 11:09 a water leak in BAF3 was detected by an alarm of too frequent filling on the cooling station. A cooling flexible was detached from its support. TI and CV piquet isolated the circuit for the weekend in agreement with SPS operators.

Details: <https://wikis.cern.ch/display/TIOP/2017/12/11/TI+Summary+Week+49>

LINAC2 (Richard Scrivens):

Nothing to report, smooth running all week.

LINAC3 (Richard Scrivens):

One two minute stop for a flow meter interlock on the source.

LINAC4 (Silvia Schuh):

This is a short report of Linac4 week 49:

- It was a good week with periods of long stable running and a few faults of the Source/RF and chopper, as well as extensive MD time.
- Source cesiation w/ Autopilot successfully performed without manual intervention, source tuning afterwards necessary.
- An issue in the chopper maximum chopper ON time was found and solved, avoiding a fault from excessive driving term on one of the plates.
- Higher source current fluctuations observed since Sunday midday triggering the WD perpetually; under investigation.
- Systematic stripping foil efficiency measurements continued during the nights and weekend.

- Extensive MDs for the source, Time of Flight measurement, Laser Emittance Meter and Bunch Shape Monitor.

LEIR 0:

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PSB (Bettina Mikulec):

For the PSB the week was characterised providing beam to AD and AWAKE. In addition, beam was sent for 24h to MEDICIS from Tuesday to Wednesday. Wednesday morning the 2017 Finemet reliability run ended without any fault since 21st of June!

Wednesday afternoon we stopped for one hour to get rid of the noise on the ring 2 LL-RF tuning loop and to bring back the low-field NMR on the operational B-train.

During the week there were only a few resets; on Sunday the HL-RF piquet had to change the power amplifier for the ring 2 C04 cavity.

Otherwise many last MDs took place; on the LL-RF side the future injection synchro was successfully deployed on Ring 0, and the team also managed to achieve excellent $h=1$ synchro for an $h=2$ beam (needed for the PS so that they can dismantle this part of the synchro in LS2).

The beam for the COLDEX run today was prepared.

PS (Ana Guerrero):

This week no faults to signal in the PS machine.

The beam permit for sending ions to Charm was signed on Tuesday morning. Two stops were programmed, one on Tuesday afternoon to replace one camera in the F61 line (1h15min beam down) and one on Wednesday to replace a PBL card for POPS and to restart the timing (20 min down).

All cameras in the line up to T8 broke one after the other in a short time either due to their end of life or due to the ions. Only one camera was replaced after the split to be able to finish the set-up. Since Wednesday Charm takes Xe blow-up beam with an extracted intensity in PS of $1.5e10$ charges. The Xe beam for physics was equally sent all week to SPS with also $1.5e10$ charges extracted.

Since the exchange of card in POPS no other trips have arrived.

The beam to be sent to COLDEX this morning is ready to be taken.

AD 0:

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SPS (Hannes Bartosik):

It was a very good week for the SPS with a beam availability of more than 95% for the North Area fixed target program with Xe ions and relatively stable beam conditions throughout the week. The energy change to the lowest extraction momentum of 31 ZGeV/c went rather smooth and the beam could be delivered to the experiments in the early afternoon. The main contribution to the downtime comes from the injectors. The only other important downtime occurred on Monday evening after the 10 hour dedicated MD: zone 842 had to be

patrolled after it was accidentally put in free access mode in the afternoon when there was no beam sent to the North Area.

On the SPS side everything was prepared for the AWAKE run which was planned to start on Friday evening. However, for the time being an issue with the veto on the laser shutter prevents simultaneous proton beam and laser operation. According to the specialist, who kindly worked on the problem during the weekend, the issue appears to be a result of the modifications made to enable the electron gun commissioning. Investigations will need to continue on Monday.