

## End Week 32 (August 15<sup>th</sup> 2010) – Status of Accelerators

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### PS Booster (Alan Findlay)

A very good week for the PSB, typical summer holiday stuff, with nothing of any note to report other than smooth operation.

The ISOLDE watchdog saga continues however, with some tests being carried out to produce gates for all three situations we have, but Franco has decided that this is not the solution before the new hardware is finally delivered. Needless to say, Bettina has asked for a meeting with Franco & Lars as soon as Lars is back from holiday this week, to discuss a proper solution.

### ISOLDE (Didier Voulot)

#### GPS:

The run for IS503 (49Sc to NICOLE) ended on Monday morning. The run was very successful. Monday to Thursday morning, cool down period (target 392 UC2-C). Thursday morning target change (target 425 YO). The target change went smoothly, no problem with the robots or the control of the lead doors. Thursday afternoon separator set-up, Friday proton scan and stable beam to ISOLTRAP. Radioactive beam run for IS490 started on Friday night (neutron deficient Kr) and will last until Monday morning.

In parallel with the target change on Thursday morning an access took place to the GPS separator to finish the intervention on the switchyard (adjustment of the encoder position for the mobile deflection plates and check of the interlock system). The intervention went well.

The set-up for IS490 was perturbed by control problems on Friday (communication with a PLC controlling HV supplies).

#### HRS:

The set up for a run on REX/Miniball with multiple beams (Pb, Na, Rb) started on Monday. The target change was done in advance Thursday last week (target 433 UC2-C). The HRS separator, REX charge breeder and linac were set-up between Monday and Wednesday. In parallel RILIS was set-up for the Pb beam. Proton scan on Wednesday. Some yield checks for Pb and Na were performed on Thursday.

The run will start on Monday with a  $^{192}\text{Pb}$  beam for IS494 at 2.85 MeV/u.

### PS (Alexej Grudiev)

Smooth running during the whole week providing the beams to all users at nominal parameters. During the week ions were taken in the PS and successfully accelerated and extracted with nominal longitudinal parameters both on the EARLY->LHCION and NOMINAL->MDION users.

On Tuesday intensity of DIRAC has been increased by 2.5 on their request. DIRAC would like to run for about a week at this intensity.

On Saturday evening Piquet "Access ZORA" had to be called in due to a problem to establish the security chain in the EAST zone. The reason of the problem was that physicists did not know the

procedure how to access the experimental zone. Piquet explained it. No beam for EAST zone for 1.5 hours

## AD (Lajos Bojtar)

Monday:

- Tried to improve bunch length by finding a better alignment between the electron and pbar beam, without success. Few years ago we had the possibility to measure the electron beam position in the cooler which doesn't work anymore, we are blind. It would be very useful to have it working again. Informed G. Tranquille.

Tuesday:

- Found lots of noise on the cathode voltage signal connected to OASIS, called G. Tranquille. It turned out this is not a signal coming directly from the cathode, but a monitoring output. Later checked a more direct signal and it is also noisy. If true, it would explain well the longer bunch length. This has to be followed up.

The rest of the week :

- DE.DVT7013 was replaced. (twice, first with wrong polarity).
- A capacitor broke down in Di.BHZ6044, replaced by FL.

Good week altogether.

## SPS (Karel Cornelis)

Two long stops this week for SPS. The first stop started on Monday evening at 9 p.m. with a problem on the dump resistor of the proton inflector. This resistor is in the tunnel, close to the kicker and radio protection did not allow an intervention before the next morning. Tuesday morning the problem was quickly solved by adding some insulating oil in the resistor tank. During this intervention a water leak was found on the beam dump which was also repaired. The SPS was fully running again at noon. There were a few intermittent problems with the QD (electrical ripple) on Tuesday evening but on Wednesday and Thursday the SPS was running like clockwork. The second stop was on Friday and it concerned only CNGS. An access was needed in order to repair a 48V supply. The access procedure plus intervention took the whole day of Friday. Since Friday evening the SPS is running smoothly. AMS has switched to secondary beams and is asking for different beam files from time to time.

## TI (Peter Sollander)

Monday, August 9: An LHCb detector safety system (aka DSS) rack trips and cuts part of the 400V distribution in point 8. A major event is being prepared. The first investigations show that it is an internal UPS in the rack that must have failed to provide its output voltage. EN/ICE is investigating still...

Tuesday, August 10: Short cryo stop in sector 34 due to a communications problem; a FESA server on the front end cfc-sh4-ql4ce suddenly stopped. This server relays information to process control PLCs. When the PLCs could not get data from sector 34, they decided to close cryo valves and put the installation in a safe mode. EN/ICE is investigating why the server stopped and if it is possible to detect and repair a failing server before it stops cryo.

Friday, August 13: 8 hour stop for CNGS due to a 48V charger in TSG4 failing and stopping the ventilation in TCV4. First alarms at 7.30, CNGS stopped at 7.56, ...radiation cool down..., access at 15.30, 16.53 CNGS back up and running.

More detailed info in the major event reports:

[https://apex.cern.ch/pls/htmldb\\_edmsdb/f?p=139:210:::NO::P210\\_SEQ\\_NUM,P210\\_PAGE:27527,11](https://apex.cern.ch/pls/htmldb_edmsdb/f?p=139:210:::NO::P210_SEQ_NUM,P210_PAGE:27527,11)

[https://apex.cern.ch/pls/htmldb\\_edmsdb/f?p=139:210:::NO::P210\\_SEQ\\_NUM,P210\\_PAGE:27524,11](https://apex.cern.ch/pls/htmldb_edmsdb/f?p=139:210:::NO::P210_SEQ_NUM,P210_PAGE:27524,11)

[https://apex.cern.ch/pls/htmldb\\_edmsdb/f?p=139:210:::NO::P210\\_SEQ\\_NUM,P210\\_PAGE:27679,11](https://apex.cern.ch/pls/htmldb_edmsdb/f?p=139:210:::NO::P210_SEQ_NUM,P210_PAGE:27679,11)

## LHC – full details under coordination at (Malika Meddahi & Jorg Wenninger):

Aim for the coming week:

- Go to 48b on 48b
- Test bunch trains

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

Day	Summary	Link to report from morning meeting
Monday 16 <sup>th</sup> August	<ul style="list-style-type: none"> <li>• 8:30 – 9:30: EOF (ADT - TBC)</li> <li>• 9:30 - Dump physics fill</li> <li>• 9:30 – 13:00: Ramp down + new BLM firmware release (dry tests)</li> <li>• 13:00 – 16:00: LHC in access</li> <li>• 16:00 – 20:00: LHC recover 450 GeV injection conditions</li> <li>• Overnight - BLM requalification tests and test ramp - TBC</li> </ul>	<a href="#">Slides from 8h30 meeting</a>
Sunday 15 <sup>th</sup> August	<ul style="list-style-type: none"> <li>• Physics operation until 13h</li> <li>• 13:00 – 14:00: Ramp down</li> <li>• 14:00 – 17:00: Access P8 for QPS-Pre-cycle- Recovering beam conditions</li> <li>• 17:00 – 19:00 : 10 A/s ramp test</li> <li>• 19:00 – overnight : Ramp-down - refill for physics and stable beams</li> </ul>	<a href="#">Slides from 9h meeting</a>
Saturday 14 <sup>th</sup> August	<ul style="list-style-type: none"> <li>• Physics operation</li> </ul>	<a href="#">Slides from 9h meeting</a>
Friday 13 <sup>rd</sup> August	<ul style="list-style-type: none"> <li>• 8:30 - 9:00: Loss maps on momentum shift</li> <li>• 9:00 – 10:00: Ramp down – back to 450 GeV</li> <li>• 10:00 – 12:30: 10 A/s ramp rate trial</li> <li>• 12:30 – 19:00: Access – Recovery of inj. cdts</li> <li>• 19:00 – Recover from access, and refill for Physics and stable beams with 25bx25b</li> </ul>	<a href="#">Slides from 8h30 meeting</a>

<p>Thursday 12<sup>th</sup> August</p>	<ul style="list-style-type: none"> <li>• Morning: 10A/s ramp test – Prepared, not performed (no beam)</li> <li>• Afternoon: beam not available from injectors</li> <li>• Late afternoon –Overnight: 2 attempts to provide stable beams failed due to RCBXH1.R2 function</li> </ul>	<p><a href="#">Slides from 8h30 meeting</a></p>
<p>Wednesday 11<sup>th</sup> August</p>	<ul style="list-style-type: none"> <li>• Morning: test ramp, squeeze, collide with 1b x1b for loss maps</li> <li>• Afternoon: OFB and QFB consolidation with 1bx1b Ramp, squeeze and loss map with asynchronous beam dump</li> <li>• Evening and night: Physics 25bx25b – 2 attempts dumped during the squeeze – function in SF B2</li> </ul>	<p><a href="#">Slides from 8h30 meeting</a></p>
<p>Tuesday 10<sup>th</sup> August</p>	<ul style="list-style-type: none"> <li>• Morning to 12:30: stable beams - Beam dumped due to temperature on TCLIB.6R2.B1</li> <li>• Afternoon: 450 GeV consolidation</li> <li>• 22:00 - night: attempt to provide Physics 25bx25b –failed (OFB). Preparing 1bx1b ramp for loss maps</li> </ul>	<p><a href="#">Slides from 8h30 meeting</a></p>
<p>Monday 9<sup>th</sup> August</p>	<ul style="list-style-type: none"> <li>• 01:30 STABLE BEAMS (1268)</li> <li>• Morning: <ol style="list-style-type: none"> <li>1. 7:00 – 9:30 : Access in pt 6 for QPS S67 + Pre-cycle</li> <li>2. 9:30 – 12:00 : Lost S56 (Water fault on RB.A67) – Access pt6 – Pre-cycle</li> </ol> </li> <li>• Afternoon- evening and night: preparing for Physics 25bx25b – stable beams</li> </ul>	<p><a href="#">Slides from 8h30 meeting</a></p>