Facilities Operation Meeting – Minutes

08/27/2024 FOM 2024 #30 (reports for Week 34), via Zoom

Chair: Alberto Rodriguez
Scientific secretary: Marlene Turner

List of participants (52): Albert M., Argyropoulos T., Asvesta F., Banerjee D., Bravin E., Comblin J. F., Demarest P., Dutheil Y., Fadakis L., Findlay A., Di Giovanni G. P., Gourber-Pace M., Haase M., Heylen H., Huschauer A., Jaekel M., Jorgensen L. V., Karpov I., Kuchler D., Lasheen A., Li K. S. B., Lozano Benito M. L., Mahner E., Mataguez S., Maclean E. H., Milazzo P. M., Newborough A., Petrika G., Pittet S., Pruneaux C. D., Rae B., Ramberger S., Rodriguez J. A., Roncarolo F., Salvant B., Scrivens R., Schwarz P., Secondo R., Skowronski P. K., Slupeki M., Solfaroli M., Somoza J. A. F., Spierer A., Steerenberg R., Stopa W., Timeo L., Turner M., Vincke H., Wegner R., Zisopoulos P.

Indico: (link)

Agenda

1. Minutes approval and actions follow up (*A. Rodriguez*)
2. Summary of the reports from Accelerators & Facilities (*A. Rodriguez*)
3. MD requests and dedicated MDs (*B. Salvant*)
4. Short-term injector schedule outlook (*A. Rodriguez*)
5. AOB (*A. Rodriguez*)

1. Minutes Approval and Actions Follow Up (*A. Rodriguez*)

Slides p.2 (link).

The minutes of the last meeting (link) were approved without further comments.
There were no open actions.

2. Summary of the Reports from Accelerators & Facilities (*A. Rodriguez*)

Slides pp.3-17 (link).

TI

Rodriguez J. A.: Was the harmonic filter intervention completed?
Salvant B. (*via chat*): Confirming with CCC, the issue with the harmonic filter (SVC) in SEQ2 (LHC2) was solved during the intervention yesterday.

LINAC4

Water pressure problem

Petrika G.: No water pressure problem was reported to us and we did not observe any perturbation on our system.
Newborough A.: I would be interested to understand if this is really pressure on the magnets or if it was on the converter, because the magnet team was not involved.
Timeo L. (*via chat*): The water pressure problem concerned the power converter L4T.RBH.021, not the magnet (slide needs to be corrected). Yet, I need to talk to *Le Godec G*. to answer to *Petrika G*.'s comment.

- **Conclusion**: follow up with offline discussion.

PSB

Di Giovanni G.P.: The stop of the vertical septa was because of trying to restart the vacuum pump. We only realised that yesterday and did not update the report. Additionally, the BE.BSW15L4 is a bumper not an extraction kicker.
Rodriguez J. A.: Thank you, I will correct the slide.

ISOLDE

IH structure problem

Timeo L.: Concerning this problem which occurred Saturday morning, I did not have time to investigate thoroughly. On Sunday, there was a half-hour event, likely due to a loose contact in the electronics.
Concerning the point that the users lost beam for 4-5 hours. It seems the users were reacting to the wrong signals, unrelated to the IHS structure. I have not found any issues with IHS, apart from a jump in a signal that should not be looked at. While it is great they tried to debug the system, better training is needed. We can discuss this further during the ISOLDE meeting later this afternoon.
Rodriguez J. A.: Thanks for the feedback. I have not looked into the details yet, but I have seen this happen before. Let us review it more carefully on our end and discuss it during the technical meeting to decide how to proceed.

Physics report

Heylen H. (*submitted via email*): On GPS, the week started with a beam development run by the SY-STI group. On Thursday, one day earlier than foreseen, 61Zn beams were sent to the ISS HIE-ISOLDE experiment to perform transfer reactions important for astrophysical purposes. The run has gone smoothly and the users managed to get the statistics they wanted.

PS

Drifts in T8 beam position

Rodriguez J. A.: How frequently is a correction needed and does it impact physics significantly?
Dutheil Y.: I don't think it's a new issue—PS drifts have always been there. The correction needs to be applied every few hours (though it varies a lot, sometimes it is stable for days).
Banerjee D.: They use small sensors, and if there is a drift, they miss the intensity, affecting their data collection. That is why position stability is crucial; otherwise, they lose statistics.
Skowronski P. K.: Do you know which element is drifting?

Huschauer A.: The origins of the drifts are unclear and slow extraction spills are hard to diagnose precisely. We typically use the BTVs upstream. This is not a new issue and the operators are familiar with it. Stability fluctuates throughout the year without a clear reason. One of the next steps is implementing autopilot trajectory correction, as we now have YASP in place. While understanding the source of the drifts is ideal, they might also originate from the ring and extraction.

- **Conclusion**: Continue discussion on possible further tests offline.

nTOF

Milazzo P. M.: Especially for the 88Zr, the additional protons are very useful for us.

AD

AD access

Jorgensen L. V.: The access might take slightly longer than two hours. We are likely starting at 8 a.m. to give them more time.

Radiation alarm

Jorgensen L. V.: On Thursday (22nd of August 2024) afternoon, users in Alpha reported a radiation alarm near the visitor platform exit door (PT113). It turned out to be unrelated to the AD, but rather beam losses in the TT2 transfer line to nTOF. They heard the alarm and called us. We then contacted PS, who had not noticed yet. There should be a quicker way to get people involved rather than relying on AD users.
Rodriguez J. A.: I assume that this information would appear in the CCC. Was it missed?
Dutheil Y.: It was not missed.

- **Conclusion**: Continue discussion offline.

LHC

Solfaroli M.: The faulty sensor caused the cryo trip this morning. We will l replace it today, but since this is not a standard fix, it will take time and require recalibration. The cryogenic system will likely restart pumping tonight, meaning a stop until tomorrow evening is expected.
Regarding the RF, the problem is resolved. Minor retuning is underway during the stop and should be completed within a few hours, so everything should be fully operational soon.

LEIR

Argyropoulos T.: We've made improvements since then. The beam, initially around 2.2 to 2.3×10^{10}, can now be fully extracted after fixing the low-level RF issue (the power supply was restarted) and fixing the beam from the RF side. We also managed to get the beam to the PS for some cycles, though not fully optimized. We started with the nominal yesterday and are continuing to work on it, with progress going well. Thank you to all the experts for their help.

Input for scheduling of interventions/access requests

- ***PSB:** Access request (28.08 or 29.08 for ~2h): Visual investigation of the water leak in BR.QDE11.*
- ***PS:** Access request (~2h): primarily for 200 MHz cavity component replacement and tuning.*
- ***SPS:** Intervention of ~9h for measurement on wobbling magnet T4 on a Wednesday (28.08 or 04.09). No extractions to the North Area.*

- *Di Giovanni G. P.*: Concerning the PSB access request, we need a few hours, including cool down time (30 min), to access the area, check the leak, and leave. **There is a risk the process could take longer** if the magnet expert decides the patching needs improvement (which could extend the process by half a day). This is why we prefer to start in the morning. We propose Wednesday (28th of August 2024) or Thursday (29th of August 2024), as they fall midweek and can be adjusted to fit the schedule. Additionally, we plan a few parallel tasks, like installing a remote camera and fixing amplifiers, without delaying operations. The primary focus remains on checking and evaluating the leak.

- *Li K. S. B.*: From the SPS side, we have decided to proceed with the intervention Wednesday (28th of August 2024). The MD has been organized accordingly, and the magnet expert is coordinating with RP to confirm if the checks can be done tomorrow. We will have confirmation and updates as soon as possible. Tomorrow, we would not be extracting to the NA, which is why we planned the intervention for Wednesday, making it transparent to other users. However, stopping the beams will still impact the dedicated MDs. With slots becoming rare as we approach year-end, this would be a significant setback for the MDs.
  Salvant B.: I agree with *Li K. S. B*. We discussed and decided to proceed with an MD that does not extract to NA, but we need ten hours. If there is an intervention, the end of the MD should be delayed.
  Banerjee D.: We will need to tune the beams for the secondary beamlines after the end of the MDs.

- *Schwarz P.*: *Pira Y. P*. (HSE-RP-AS) replied, saying the box location remains too hot for intervention even after a few hours of cooldown. He recommended a cooldown time of at least 24 hours, which would extend well beyond the MD.
  Li K. S. B.: We need to decide when to best start cooldown, also keeping the MD scheduling in mind.

- *Jaekel M.*: I reviewed the schedule and found that this week and next are similarly inconvenient for us, so there is no reason not to proceed Wednesday (28th of August 2024).

- *Solfaroli M.*: Since LHC will be stopped until at least tomorrow evening, Wednesday (28th of August 2024) is the best window for us to fit the access.

- *Rodriguez J. A.*: If the intervention starts before 9am, MEDICIS will receive less protons than planned.
  Steerenberg R.: We could do the intervention at 9 a.m., shift the MD later, and shorten the MD by 1 hour to balance between physics and MD.
  Newborough A.: We could start at 8 am.

➔ **Action #13:** *Rodriguez J. A.* to follow up with offline discussions and then communicate decision via the FOM email list.

3. MD Requests and Dedicated MDs (*F. Asvesta/B. Salvant*)

Slides (link).

Steerenberg R.: I understand you need the full hours, but if we shift the MD tomorrow, the restart will be very late. Would it be possible to shorten tomorrow's MD slightly and extend the one in week 37 by 1-2 hours, given they involve the same subjects?
Salvant B.: We need to discuss this with the MD user. In principle we are flexible. The remaining topics are high priority and were deferred from mid-July. There is limited room for adjustment now, but we understand the importance of not restarting the machine too late.

4. Short-term Injectors Schedule Outlook (*A. Rodriguez*)

Slides p.18 (link).

5. AOB (*A. Rodriguez)*

Follow up of the IT computer center tests
Jaekel M.: The UPS intervention in the data center has been accepted by the IEFC and is now under LHC consideration.
Rodriguez J. A.: Yes, *Nielsen J.* presented the UPS intervention to the IEFC, which approved it. He then emailed *Jones R.* and *Lamont M.*, the LMC chairs, but had not received a response by late yesterday. Assuming no changes, the intervention is planned for 3rd of September 2024, weather permitting. *Pruneaux C. D.* could you confirm with *Nielsen J.* if there are any updates?
Pruneaux C. D.: I will and will let you know.

Minutes by M. Turner