6 November 2023

ACCELERATORS & EXPERIMENTAL FACILITIES STATUS

SUMMARY OF WEEK 43 - 2023

Technical infrastructure – *J. Nielsen*

Linac 4 – *P. Skowronski*

PS Booster - *G.P. Di Giovanni*

ISOLDE – *No report*

PS – *E. Maclean*

PS – East Area – *No report*

PS – nTOF – *N. Patronis*

AD – ELENA – *No report*

SPS - *G Bellodi*

SPS – North Area – *No report*

SPS – AWAKE - *G. Zevi Della Porta*

SPS – HiRadMat – *No report*

Linac 3 - *G Bellodi*

LEIR - *M. Bozzolan*

LHC - *No report*

CLEAR – *A. Malyzhenkov*

Technical Infrastructure (TI)

Facility Coordinator last week	Jesper Nielsen
Facility Coordinator this week	Clement Pruneaux

Statistics

Alarms	8301				
Phone calls	988	***Incoming***	654	***Outgoing***	334
ODMs	140				

Facility Status

Summary	A week without any major events to report. On the other hand, there was a lot of minor pollution due to heavy rain on the concrete of recent buildings. Several fire brigade interventions were also noted for seepage and minor flooding in various places. From TI operations point of view, we're feeling the load of calls and operations management increase with the start of the technical stop.
Issues	Mon 30/10/23 - 13:32 High pH alarm on discharge water station WMS902 (b.3077). Environmental team informed Wed 01/11/23 - 16:11 Pollution - Hydrocarbons alarm on discharge water station WMS103 (b.1153) The environment team has been informed. Pollution following a problem with a lorry Thu 02/11/23 - 16:04 High pH alarm on discharge water station WMS902 (b.3077) Environmental team informed. Known problem due to water runoff on the concrete.
Plans	

Intervention Request

Yes / No	**Duration**		**Preferred date/time**	
Reason				
Impact				

Linac 4				
Machine Coordinator last week	Piotr Skowronski			
Machine Coordinator this week	Jose-Luis Sanchez Alvarez			
Statistics				
Availability	96.6%			
Facility Status				
Summary	A good week with successful high intensity MD on Monday and Tuesday and one major fault.			
Issues	On Thursday evening pre-chopper started tripping. The root cause of the problem was difficult to understand, the expert exchanged the control electronics, but it did not help. Finally, he could understand that interlock signal indicating missing cable connection randomly switches on for very short time, leading to the system trip. He concluded that this must be the microswitch issue rather than unplugged cable and he bypassed this interlock. It caused 4.5 hours of downtime. Additionally, there were 4 faults that could be quickly reset.			
Plans				
Intervention Request				
No	***Duration***		***Preferred date/time***	
Reason				
Impact				

PS Booster				
Machine Coordinator last week	G.P. Di Giovanni			
Machine Coordinator this week	G.P. Di Giovanni			
Beam Scheduled				
ISOLDE	No		***PS***	Yes
Beam Availability by Destination (AFT)				
ISOLDE			***PS***	96.6%
Facility Status				
Summary	An active week despite most of the machines and facilities have stopped taking protons. On Monday 30th of October, planned access for: • Checking the BR.QFO11 water leak, now at 90 ml/min (was 85 ml/min 2 weeks ago). • Checking the BI.BSW. No water leak found. On Monday and Tuesday, 30th and 31st of October, the Linac4-PSB performed the planned dedicated MDs: - 1 day and a half dedicated to injecting high current Linac4 beam in the PSB to probe high intensity beam production and check possible improvements on the LHC brightness. - As part of the test, managed to produce the other operational beams with the Linac4 high current. This can open the way to continue similar studies without stopping the whole complex, but for switching between Linac4 source configurations. - The remaining half day was dedicated to impedance studies with the matched kicker termination in R2 (beam could not be extracted during the test) and nominal Linac4 source configuration. - In between the RP team performed the 30h RP survey. - A massive thanks to all the involved experts for their support during these intense two days. At the end of the dedicated MDs, at around 18h00 on the 31st of October, the Linac4-PSB was able to provide beam for the AD-ELENA extended proton run. Several approved MDs with low intensity (<100e10 ppp) were performed throughout the week. Preparation of cycles for RF ISTs which will be performed at the end of the proton run.			
Issues	Most of the downtime caused by Linac4 issues. A couple of short trips of R2 extraction kicker in the night between the 31st of October and 1st of November. Quickly reset. Degraded mode (no beam in R2) for ~25 minutes. On Saturday 4th of November, the R1 recombination kicker tripped and there was no beam in R1 (degraded mode) for a ~10 minutes. On Sunday 5th of November an issue with the BI1.KSW required the reboot of the FEC. No beam for all users for about 15 mins (interlock from the BIC).			
Plans	Provide beam to AD-ELENA for the proton extension run. Stop of all other MD studies.			
Intervention Request				
No	***Duration***		***Preferred date/time***	
Reason				
Impact				

PS							
Machine Coordinator last week	Ewen Maclean						
Machine Coordinator this week	Alex Huschauer						
Beam Scheduled							
East Area	Yes (T8 only)	***nTOF***	No	***AD***	Yes	***SPS***	No
Beam Availability by Destination (AFT)							
AD	91.9%	***EA N***	-	***EA T8***	98.8%	***EA T9***	-
nTOF	-	***SPS***	-				
Facility Status							
Summary	-Decent availability, but most issues with availability occurred during AD run -Beam-stop for RP survey 12:00 Tuesday, with replacement of C10-56 amplifier performed in its shadow. -CHIMERA run continued till Wed morning, lots of energy scans. -AD run from approx. 6pm on Tuesday -Few low energy, low intensity MDs in parallel with AD run wed-fri,						
Issues	Some issues associated with end of LHC/SPS/NTOF/EASTp+ runs: -when playing only ION T8 cycles none exceeded 800G threshold to trigger programmed/measured B comparison, causing POPS to be sent to standby -Issue trimming energy for CHIMERA cycles as TT2/10 BHZ were now off and original chimera cycle inherited hierarchy from STFION. New manual energy trim procedure needed. Several issues with RF cavities: -C10-46 tripped and could not be reset -2 attempts to replace amplifier. Cavity ran for short period after each replacement then tripped again and unable to reset -Problem believed to be with fan in amplifier assembly, but would need renovation in YETS or longer intervention this week, T.B.C. For now PS is running without any spare 10MHz cavity. -Multiple trips of C10-11 during week (3 in 30mins on Sunday night) but no common error and seemed to recover. - issue with C10-76 and B-train Monday in the morning						
Plans	Continue with AD run						
Intervention Request							
No	***Duration***		***Preferred date/time***				
Reason							
Impact							

PS nTOF				
Facility Coordinator last week	Nikolas Patronis			
Facility Coordinator this week	Nikolas Patronis			
Beam Requested				
No				
Facility Status				
Summary	All OK			
Issues	No issues			
Plans	• First YETS actions are already in progress • The cleaning of the EARs is done along with some first minor YETS actions (material orders, ...) • We are in access mode in both TOF-EARs.			
Foreseen Beam Stop				
Yes / No	***Duration***	NA	***Date/Time***	NA

SPS AWAKE				
Facility Coordinator last week	Giovanni Zevi Della Porta			
Facility Coordinator this week	-			
Facility Status				
Summary	• Start of SPS work in TAG41 • Magnet patrol • Preparation for laser-plasma experiments in TCC4			
Issues				
Plans	• Continue laser-plasma experiments in TCC4			
Foreseen beam stop				
Yes / No	***Duration***		***date/time***	

Linac 3					
Machine Supervisor last week	G Bellodi				
Machine Supervisor this week	R Wegner				
Statistics					
Availability	100%				
Facility Status					
Ion species	Lead, oxygen				
Summary	Good last two days of 2023 physics run, with stable 33eμA beam current out of the linac. Ion physics run stopped on Wednesday at 8h. After some last reference measurements with Lead, the source was switched to Oxygen beam production. After the new beam permit was released, the machine settings were scaled for Oxygen beam transport. Source CSD scans, RF longitudinal scans and transverse beam measurements were carried out on Thursday and Friday. On average a beam current of 320eμA is extracted from the source, of with 120eμA is accelerated through the RFQ and 80eμA at the end the linac (first observation).				
Issues					
Plans	Continue RF scans in the IH, ramping and debuncher cavities on Monday and Tuesday and optimize transfer line settings on Wednesday. Deliver Oxygen beam for injection in LEIR on Thursday until the end of the week.				
Intervention Request					
Yes / No	***Duration***		***Preferred date/time***		
Reason					
Impact					

LEIR				
Machine Supervisor last week	M. Bozzolan			
Machine Supervisor this week	-			
Statistics				
Availability	100%			
Facility Status				
Ion species	Lead			
Summary	RP reference measurements taken with lead ions before to switch to oxygen			
Issues	None			
Plans	Preparation for the oxygen ions			
Intervention Request				
Yes / No	***Duration***		***Preferred date/time***	
Reason				
Impact				

CLEAR	
Facility Coordinator last week	Alexander Malyzhenkov
Facility Coordinator this week	Alexander Malyzhenkov
Facility Status	
Summary	• The PSI Positron Production (P^3 or P-cubed) project is a e+ source demonstrator for the Future Circular Collider Study, to be installed at the SwissFEL facility at PSI. • The beam time at CLEAR we are requesting will be devoted to the testing of one key instruments for P-cubed: the broadband pick-ups (BBPs). The BBPs consist of an arrangement of four pick-ups with large broadband response to measure the time structure of consecutive, non-gaussian electron and positron bunches of roughly 33 ps length and around 167 ps apart from each other. • Installing BBPs to the CLEAR beamline and performing testing with a single bunch • Very consistent results for the bunch length (2-12 ps) and bunch charge (100-400 pC) measurements in comparison with standard CLEAR diagnostics
Issues	Vacuum issues, amplifier for MKS 11
Plans	Continue experiments of the previous week