ATC-ABOPC Days 2008: Session 1 Summary

Session coordinated by B. Mikulec AB-OP and O. Brüning AB-ABP

Operation in 2007 and Outlook for 2008: 5 presentations

- ➔ Operations Review 2007 for the LHC injector Chain:
  - ➔ Rende Steerenberg
- ➔ Overview of the main events related to TS equipment for 2007:
  - ➔ Serge Deleval
- ➔ Overview of the main events related to AT equipment in the LHC injector chain for 2007: ➔Pierre Strubin
- ➔ Operational Scenarios for 2008 ➔Paul Collier
- ➔ The plans and needs of the Experimental Areas in 2008 and Beyond:
  - ➔ Lau Gatignon

Operation in 2007 and Outlook for 2008

Talk by Rende Steerenberg AB-OP

- Overall excellent performance of the whole injector complex!
  - ➔ the consolidation investment seems to pay off!!!

- Analysis by machine: LINAC2
  - ➔ Vacuum problem in tank 3 could be fixed. However, this is still a improvised fix and a vacuum fault in LINAC2 remains a major worry!
  - ➔ Working sets under Java console manager did not always report coherent information ➔X-motif will remain available in 2008

Operation in 2007 and Outlook for 2008

Talk by Rende Steerenberg AB-OP

Analysis by machine: PSB ➔ quick start-up; all LHC beams; 3.8E13ppp

➔ LINAC2 to PSB trajectory troublesome due to PS stray fields

➔ work is underway to tackle this problem

➔ Problems related to the fast wire scanners (2 out of 8 broken, calibration)

➔ additional vacuum valves plus new electronics

➔ Problems with the tune measurement system (worked only at the end of the run and for one ring) ➔ new BBQ system for whole PS complex!

➔ Erratic readings from ejection transformers ➔ new electronics; will not be available for beginning of 2008 run; no spares for old electronics

➔ Beam intensity limitations (feedback and h1 CO4)

➔ proposed new operation modes need to be tested in 2008

Operation in 2007 and Outlook for 2008

Talk by Rende Steerenberg AB-OP

Analysis by machine: PS good beam availability of 93%

➔ problems related to 5-current mode PFW PC (e.g. MTE ; DIRAC)

➔ problems solved by end of run with many back and forth switching

➔ new installations should be tested in parallel

➔ problems related to the tune measurement system

➔ the old system will be made available again in 2008

➔ nonlinear Q' measurements could not be finished

➔ PFW matrices are incomplete

➔ PS not in good shape for Q and Q' control

➔ MTE installation advances well but one needs to verify the application software readiness

Operation in 2007 and Outlook for 2008

Talk by Rende Steerenberg AB-OP

Analysis by machine: SPS good beam availability of 82%; high intensity beam delivered to North area; extraction without tune-split; Pb ion MDs

➔ some problems due to RF transmitter (worse after startup with ion MD)

➔ being worked on, but status not clear

➔ problems related to the 18kV cables

➔ compensator overheating when SPS is not pulsing

➔ both points are addressed by Serge Deleval

➔ CNGS run stopped due to radiation issues

➔ major consolidation effort in 2007/2008 shutdown

➔ talk by E. Gschwendtner

Overview of the Main Events related to TS equipment

Talk by Serge Deleval TS-CV

- SPS compensators
  - ➔ no backup in 2007
  - ➔ SVC2 and SVC3 will be in service in 2008; BEQ1 as backup
- SPS 18kV cables ➔ consolidation is ongoing
- radioactive gas release in Isolde complex in 2007
  - ➔ modifications in the ventilation system implemented during shutdown
- CNGS ventilation ➔ new installation with adequate shielding for 2008 run.

Overview of the Main Events related to AT equipment

Talk by Pierre Strubin AT-VAC

- AD, Booster, ISOLDE and East Hall miss a clear status report and documentation of the equipment ➔ a complete inventory should be made

- North Area: long delays for repair due to cool down periods

- Major problems have been identified and solutions found
  - ➔ water leaks in the SPS magnets
  - ➔ PS magnet consolidation
  - ➔ vacuum leaks in ion-pump feed throughs due to corrosion

➔ Vacuum and magnet system should not develop major problems in '08

But: equipment is ageing and requires constant monitoring & maintenance!

Operational Scenarios for 2008

Talk by Paul Collier AB-OP

- It is still possible to have a sector test with beam in the LHC in May
- CNGS can at best receive 3.1 to 3.8 E19 protons while the experiment asks for 4.5E19 (flexible use of supercycles but still too few protons!)
- No Pb ion beam operation in 2008 except for the 18GHz acceptance test in LINAC3
- MDs organized again in blocks: 6 blocks in 2008
  - ➔ additional parasitic MDs will be needed throughout the year
  - ➔ special Wednesday MDs for MTE commissioning
- Implementation of a CERN wide panel for 'intervention prioritization' will start work in 2008

Plans and Needs of the Experimental Areas in 2008

Talk by Lau Gatignon AB-ATB

- AD: three main experiments (ALPHA, ASACUSA and ATRAP)

  community expects to run beyond 2010

  ➔ orbit jump have been identified and fixed by magnet replacement

  ➔ consolidation bears its fruits and should continue

- REX Isolde:

  ➔ need solution for radiation leakage through ventilation system

  ➔ need 3 weeks offline run for new RILIS solid state pump laser

➔beyond '08: need consolidation of robot, transformers and vacuum system

- LEIR: no run in 2008

➔beyond '08: Need to clarify future ion program for North Area (NA61)

Plans and Needs of the Experimental Areas in 2008

Talk by Lau Gatignon AB-ATB

- nTOF and MERIT:
  - ➔ MERIT will be dismantled
  - ➔ nTOF requires new target and reinstallation of beam line
    - ➔ this must have no impact on TT2 beam availability

- EAST Area:
  - ➔ needs many EASTB cycles with maximum flat top for DIRAC
  - ➔beyond '08: DIRAC continues in 2009; CLOUD till 2012
    magnet situation is worrying!

Plans and Needs of the Experimental Areas in 2008

Talk by Lau Gatignon AB-ATB

- North Area: Need optimum duty cycle for COMPASS;
  operation foresees intense program in EHN1

➔ beyond '08: possibly new experiments in ECN3 (NA62) and FP7
proposal for test beams and radiation facilities

- CNGS: Need to consolidate facility by May 2008;
  - ➔ need high intensity asap (missing target mass & shorter run)
  - ➔ need MTE asap

➔ beyond '08: question if OPERA will run for more than 5 years

Summary

- Overall excellent performance of the whole injector complex!
  - ➔ the consolidation investment seems to pay off!!!

- Large physics program for the injector complex in addition to LHC:
  - ➔ 2008 will put additional cycles on injector complex
  - ➔ 'low priority' cycles (East Hall) are most stressful for PS
    - ➔ reliability

- The injector complex is aging and requires continues maintenance!
  - ➔ consolidation and sufficient support are vital even if focus is now shifting to the LHC!