Activities on cooling system

Claudio Bortolin

SDD/SSD cooling maintenance

- pump: replaced

- outlet filter: replaced

- demineralized cartridge: replaced

- mechanic filter on air control: replaced

- SSD chilled water valve: replaced (it was leaking)

- safety valve on the tank: replaced

- alarm security test: done

- upload new program PLC (ramp of p regulator SSD): done

- temperature sensors loop 17 & 18: replaced

Finished

SPD cooling maintenance

- pump replaced

- dehydrator cartridge replaced

- inlet mechanic 1um filter replaced

- chilled water valve replaced (leak on the top)

- one of compressor was replaced

- some safety valves were recalibrated and installed (10 bar pump valve and 8,5 bar in the inlet manifold, 3,5 bar tank valves): done

- 10 safety valves on the loops (return side) replaced: more reliable

- test security alarm: done

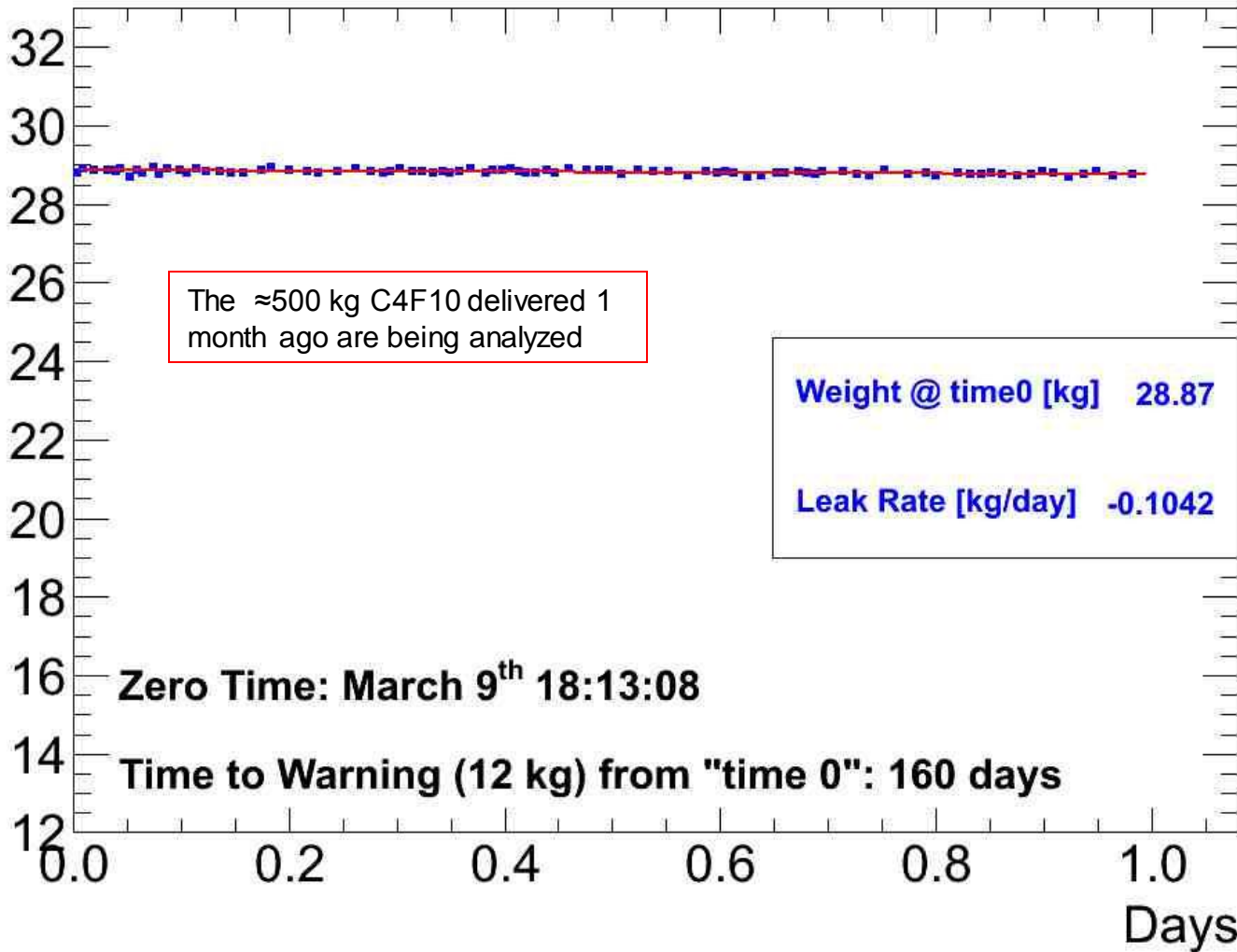- UPS integration: **done**

Finished

SPD tank weight

freon weight trend

The ≈500 kg C4F10 delivered 1 month ago are being analyzed

Weight @ time0 [kg]   28.87

Leak Rate [kg/day]   -0.1042

Zero Time: March 9th 18:13:08

Time to Warning (12 kg) from "time 0": 160 days

PLC failure this morning

11:30 am - The cooling plant went in alarm and the detector was switched off

The EN-CV colleagues found out that the problem was due to the PLC memory card that failed (reason unknown)

2:00 pm the card has been replaced, the PLC and cooling plant have been restarted

The flow rates in the drilled sectors didn't change, there are some small losses in sectors 3,4 and 5 as expected

SPD will be switched on again tomorrow morning early

SDD/SSD CILK project responsability

The CILK PVSS project (version 3.8) was developed by Marco Boccioli (ALICE DCS until end of 2009)

In April 2010 the ALICE central DCS passed this task on to each detector

Since then the CILK project was used but not updated

Recently I was asked to take care of the CILK project. I met Marco Boccioli to discuss the basic requirements of the project

The PLC programs were generated using S7 UNICOS by Stefan Lueders

SDD/SSD CILK project

An alarm is still not acknowledged (SDD): to be fix only when the plant is switched off:
S. Berry masked the alarm on the level of the plant PLC

This alarm appeared after IP address on the PLCs was changed the few weeks ago

Conclusions

- The maintenance of the plants is over: thanks to the EN-CV colleagues for their co-operation

- The leak rate of the SPD cooling plant is not negligible: to be monitored during next weeks

- CILK project: I had a first meeting with Marco Boccioli; the logic of the PLC program can be improved (during LS1?)

- Alarm on SDD cooling not acknowledged. To be done as soon as the plant can be switched off