Injectors Re-commissioning Working Group

Minutes

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1 LAST MEETING MINUTES

The last meeting minutes have been approved and are available at https://indico.cern.ch/event/385741/

2 ISOLDE FEEDBACK

M. Lozano presented the feedback from the ISOLDE start-up after LS1.

He mentioned that in their case the main problems only occurred after the facility had been already up and running again and are due to software upgrades during the run.

Most important issues faced during the restart and the first months of operation

- Various and important vacuum leaks.
- Water-cooling leaks.
- Multiple beam diagnostics issues (Faraday cups not moving, scanners not working and multiple controls problems).
- Obsolete equipment and no spares (like vacuum pumps).
- Inadequate start-up philosophy. E.g. “a system will work well again after the shutdown, just because it used to work well before the shutdown”.
- Only expert tools available instead of the more user friendly OP tools due to SW issues.
- Not clear which expert to contact especially in case of controls problems.

Lessons learnt and possible approaches for future restarts:

- During shutdown period a machine/facility needs constant attention.
- Awareness of all the planned modifications and upgrades.

  Requirement of OP involvement during controls interfaces design to ensure that the modified systems still provide the different running modes needed for a given operational scenario and that the system can still be operated from within the machine/factility control system.
- Better and earlier communication of modification of a given software layer to directly prepare propagation of changes to all impacted software layers.
- Co-activities should be carefully planned and checked.

3 MACHINE FEEDBACK

As preparation of the IRWG presentation at the upcoming IEFC, each machine representative was supposed to propose the most relevant possible improvement for their machine/facility for the next long stop.

PSB: A meticulous magnet polarity check. To cross-check and/or resolve alignment issues quickly, the latest alignment data from the shutdown should be made available in GEODE as soon as possible.

AD: More realistic planning (so far always too optimistic). The EIS have to be tested before the DSO test. Check lists.

PS: Magnets Polarity checks procedure must be improved. Timing and Controls must be available before the start of the test phase. Also, more thorough testing needed from the equipment experts during the hardware test period. The meaning o fhte beam permit has to be re-discussed. DSO should be repeated in case of interventions on access-system-critical systems.

SPS: Controls readiness deadline should be at the latest at the start of the HW tests, rigorous testing of BI systems (e.g. preparation of reference system description for all moveable BI), detailed testing of the RF low level, test machine-to-machine interfaces (like BHZ-377). LINAC: Readiness of the infrastructure is an issue. Infrastructure up and running required already for source commissioning. More global coordination required taking Iinterfaces between PS and LINAC into account (e.g. no beam in the LINAC during PS access).

ISOLDE: Priorities need to be probably defined (ISOLDE always very low priority). Better communication of controls changes required. Machine preparation should be carried out with equipment experts present to speed up process.

4 AOB

During the discussion on the most relevant possible improvements another few points were raised. The quality of the preparation of the auxiliary power converters by first line was not always adequate.

V. Kain remarked that earlier start of testing with staged deployment followed by a series of tests each time would be one strategy to keep the planning under control and prepare realistic schedules. G. Metral answered that currently starting tests to early is counterproductive as the system will still be changing and one would have to re-test at a later stage. V. Kain replies that it would however allow to detect fundamental isues and have the first round of debugging with the result of a smaller and smaller problem space at a later stage.

G. Metral also raised the point of the ever increasing control system entropy with many versions of a single FESA class and many properties per class where it is not always obvious which ones OP should survey and add to their databases. V. Kain agrees that there is a need of standardization and control of writing new equipment interfaces.