



TE-MPE LS1 Review, June 3th, 2014

The view from CRG group

A. Perin TE-CRG, on behalf of TE-CRG

Outline

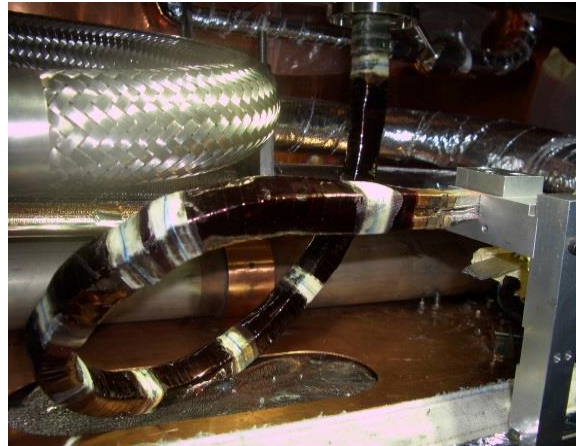
- CRG interaction with MPE during LS1
- Feedback on the operations
- Conclusions

MPE – CRG interactions

- MPE contribution in CRG LS1 projects: DFB consolidation
- MPE-CRG interactions (non direct contributions)
 - ELQA activities (Instrumentation !!)
 - Proximity equipment
 - Current leads heaters on DFBAs

Consolidations of the DFBAs during LS1

- Only ELQA: direct participation to the project via coordination
 - Done with the arc splices for “normal” consolidation tasks
 - A number of special tests:
 - Repair of damaged insulation in HCM-LCM interconnections
 - DFBAK special SHM-HCM IC
 - Repair operations of the gimbal bellows in workshop + tunnel
 - Repair of a pigtail in the DFBAF

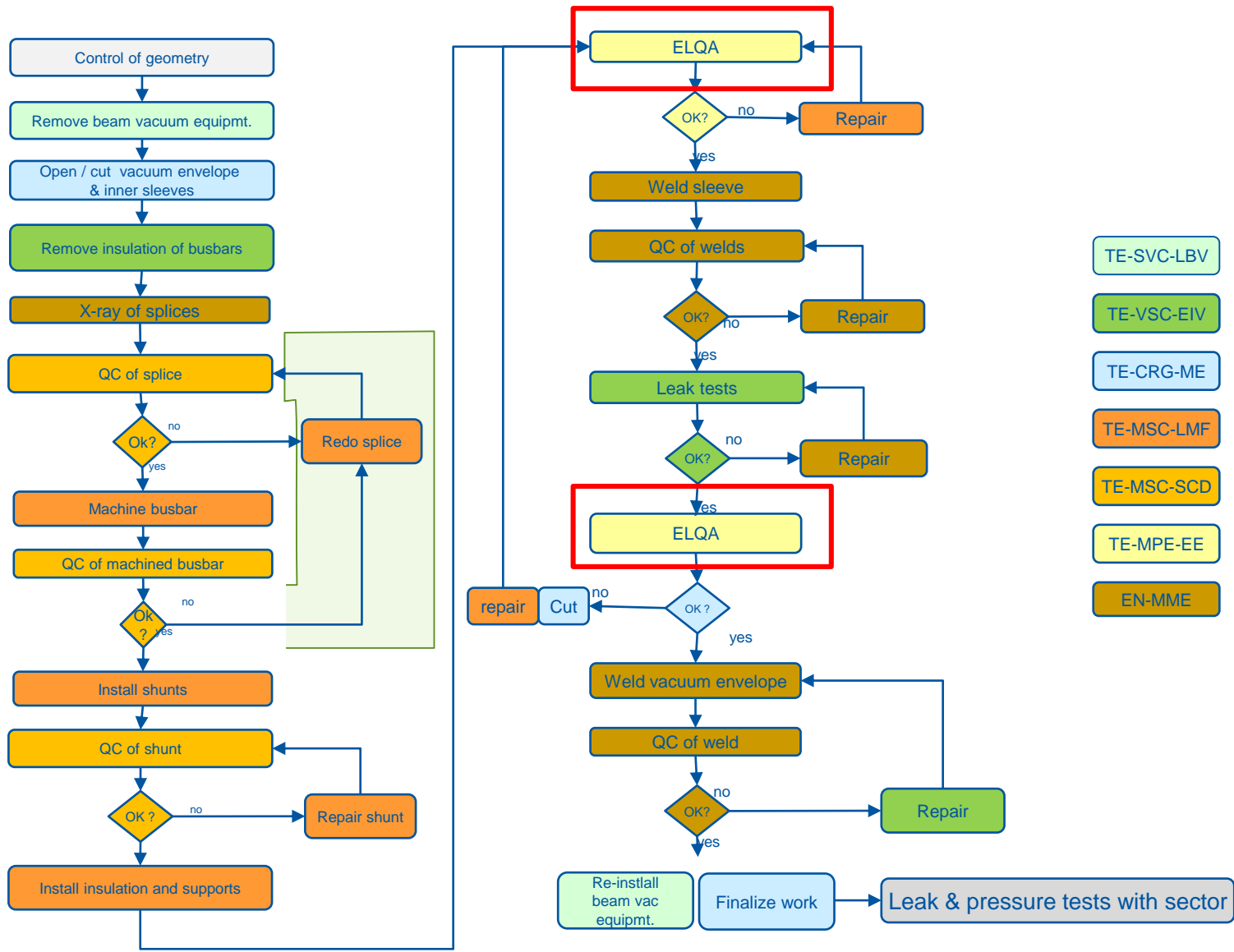


Repair of a pigtail in DFBAO



Repair of DFBAK SHM in B112

DFBA splices consolidation: ELQA



- TE-SVC-LBV
- TE-VSC-EIV
- TE-CRG-ME
- TE-MS-C-LMF
- TE-MS-C-SCD
- TE-MPE-EE
- EN-MME

Feedback for consolidations of the DFBAs during LS1

- ELQA performed during LS1
 - Procedures defined well in advance
 - Essentially in the framework of SMACC ✓
 - Excellent interaction with all teams and no problem with coordination ✓
 - For special interventions:
 - Timely and precise feedback for diagnostics (e.g. identification of problem in HCM-LCM IC) ✓
 - Short notice, very high availability and quick intervention of the ELQA team ✓
 - Very reliable and consistent measurements ✓
 - Very reliable and consistent measurements ✓

LHC Restart and commissioning (1/3)

Direct work performed by MPE on CRG demand

- DFB current lead heaters & proximity equipment
 - For non-DFBX: about 20 interventions required (as NC discovered): excellent reactivity and no specific problem ✓
 - DFBX heaters: a few delicate interventions, requiring more investigation. Tuning of regulation for the heaters performed. All problems solved rapidly. ✓ Heater controllers tag problems identified.
 - Problem with insulation identified on DFBX instrumentation cable. Investigation & cable replaced. ✓



Burnt cable on DFBA



LHC Restart and commissioning (2/3)

Interaction for CSCM: managed through global coordination team (not only with MPE)

- Good communication with regular meetings as preparation phase
- Detailed and anticipated definition of the tests.
- Clear requirements from cryo defined.
- Planning not fully respected and that had an impact on global LS1 schedule but not perturbing technically for cryo – just required longer slots for the tests

HV ELQA tests during commissioning

- ⚠ • Large number of DAQ cards for cryo thermometer damaged during HV tests. Apparently due to incorrect / non optimized / coordinated procedures. Caused a significant problem.
 - Suggested better testing and validation priori to main campaign.

LHC Restart and commissioning (3/3)

HV ELQA tests during commissioning

- ⚠ • Missing information to Cryo Op (coordination) caused frequent (more than 50) wrong identification of NC on sensors while in fact the cause was disconnected cables during ELQA.
 - Possible improvement: specific information to Cryo Operation before disconnecting and after reconnecting cables.

Conclusions

Consolidation activities

- For SMACC related tasks, excellent collaboration with the ELQA team.

LHC restart and commissioning

- For current lead heaters and proximity equipment, all work went very smoothly
- Cryo DAQ cards for current leads were damaged during HV ELQA tests: possible improvement with better exchange of information and improved validation.
- Non optimal information about ELQA & instrumentation cables disconnection caused «fake NCs» with consequent loss of time. Possible improvement: better coordination and information exchange between Cryo Operation and the ELQA teams.

Overall the collaboration and quality of work was excellent ! 😊

