LHC Machine check out

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Be/op

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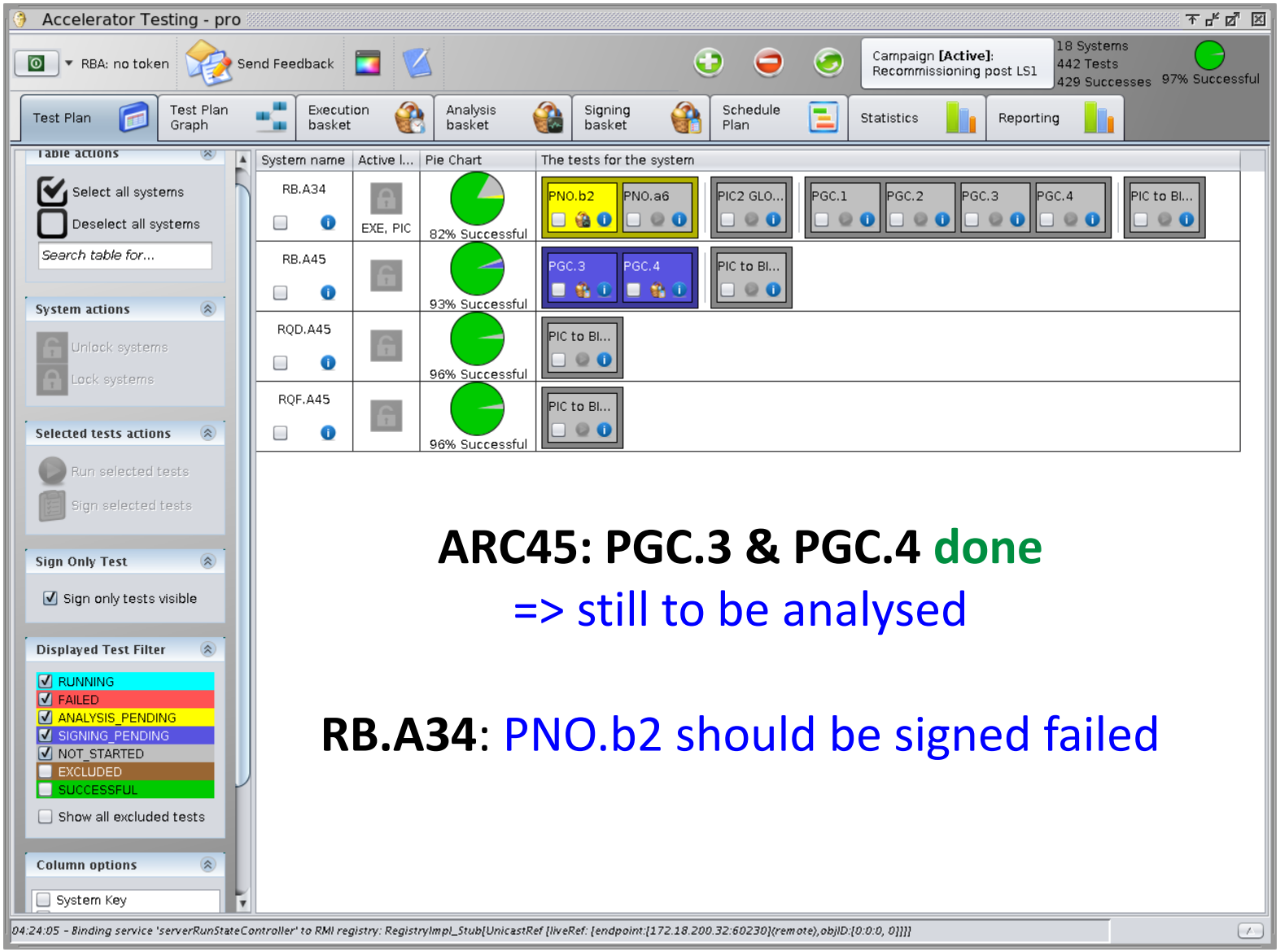
1v1

Powering Groups of Circuits

	GPM OK	RCD+RCO	PGC1.1	PGC1.2	PGC1.3	PGC1.4	PGC1.5	PGC1.6	COMPLETED
ARC12	Yes		17/02 - 19:25	20/02 - 20:41	13/03 - 00:45	13/03 - 17:12			
LR1	Yes						24/02 - 13:09	04/03 - 23:01	
ML2	Yes						03/03 - 17:57	04/03 - 23:58	
IT.R1	Yes						23/03 - 23:42	16/03 - 21:06	
IT.L2	Yes						17/03 - 00:01	17/03 - 06:11	
ARC23	Yes		10/03 - 22:19	13/03 - 18:00	14/03 - 13:19	16/03 - 22:30			
MR2	Yes						03/03 - 18:08	10/03 - 16:39	
IT.R2	Yes						23/03 - 21:55	16/03 - 21:43	
ARC34									
ML4	Yes						22/03 - 12:03	22/03 - 23:52	
ARC45			29/03 - 17:20	29/03 - 20:51	30/03 - 19:39	30/03 - 21:29			
MR4	Yes						15/03 - 01:44	15/03 - 19:37	
LL5	Yes						14/03 - 00:02	15/03 - 18:54	
IT.L5	Yes						23/03 - 23:43	17/03 - 00:28	
ARC56	Yes		14/03 - 04:19	14/03 - 14:46	16/03 - 01:33	17/03 - 01:32			
LR5	Yes						14/03 - 00:17	15/03 - 19:14	
ML6	Yes						03/03 - 18:38	06/03 - 00:16	
IT.R5	Yes						23/03 - 23:45	24/03 - 03:09	
ARC67	Yes		14/02 - 08:40	11/03 - 00:31	12/03 - 14:17	13/03 - 18:30			
MR6	Yes						20/02 - 21:01	05/03 - 02:33	
ARC78	Yes		21/03 - 14:10	21/03 - 17:33	22/03 - 19:43	23/03 - 20:00			
ML8	Yes						03/03 - 18:15	11/03 - 02:38	
IT.L8	Yes						23/03 - 19:18	24/03 - 00:27	
ARC81	Yes		13/03 - 17:52	14/03 - 13:10	17/03 - 03:26	17/03 - 05:40			
MR8	Yes						03/03 - 18:28	11/03 - 01:58	
LL1	Yes						13/03 - 21:14	15/03 - 19:20	
IT.R8	Yes						14/03 - 12:45	16/03 - 20:59	
IT.L1	Yes						27/03 - 19:56	21/03 - 02:38	

Remaining HWC tests



ARC45: PGC.3 & PGC.4 done

=> still to be analysed

RB.A34: PNO.b2 should be signed failed

Investigation on RB.A34 fault to ground

- **Monday**
  - **Attempt to burn away short went well**
  - **First results show that the fault has disappeared.**
  - **To be confirmed by the ELQA measurement today**
  - **Cryogenic circuit back to 1.9 K**

- S34 at 3.2 K

RQF S12 intervention

- RQF S12
- Sunday morning we did a visual inspection
- Monday intervention Earth Fault disappeared

RB.A78 Trip

- RB.A78 tripped while going to standby.
  - signal I_EARTH_PCNT = -109% disappeared after.
- Visual Inspection.
- ELQA measurement yesterday afternoon.
- Found a Earth Fault on the warm part.

Do we need a verification campaign EN/EL?

RB.A78 Trip

- Visual inspection
  - Found an air handling unit near the QF/QD.
  - EN/CV informed >> Intervention
  - EPC had to switch off all the DCCT Electronics related to RB.A78, RQD.A78, RQF.A78.

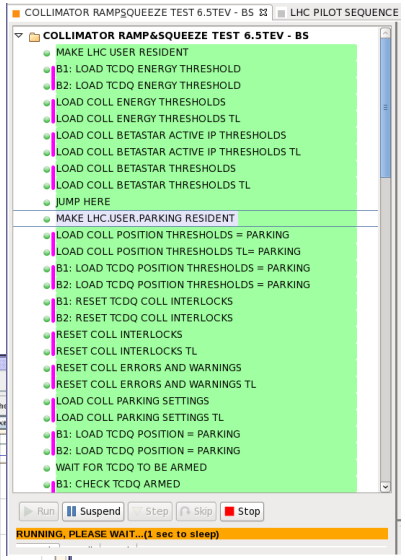
Monday – cycling & PGCs

- **ALICE solenoid** RAMP-UP/DOWN
- Repeated PLI2.b3 for **RQF.A12** and ramp to I_PNO
- **RQF/D.A12** for ~1h @ flat top

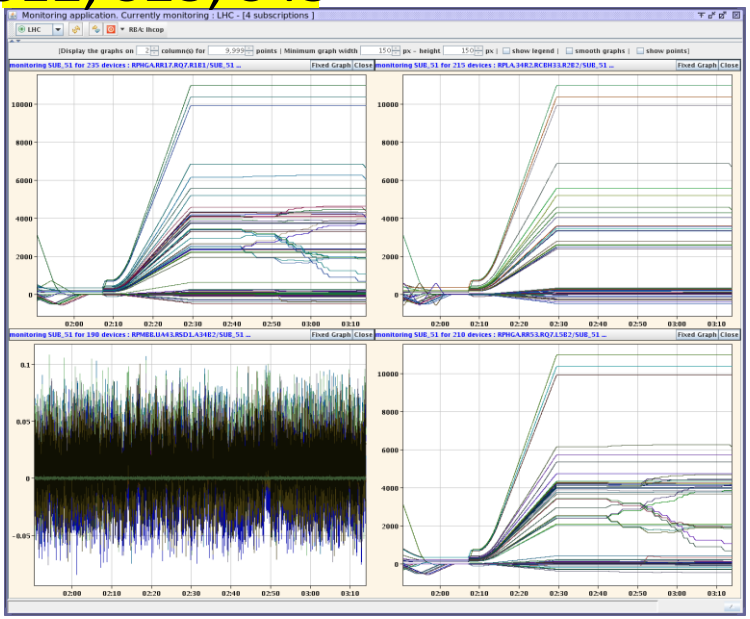
- 18:30: RQ6.R4B1 tripped (NO PC PERMIT, VS STATE)
  => EPC needs to check it
- PGC1.3 & PGC1.4 on ARC45 – OK (to be analysed by MP3)
- RQD.A45 tripped while going to STANDBY
  fault: VS_RUN_TO, OK after reset
- RQD/F.A78: I_MEAS fault => EPC needs to check it

Monday – cycling & PGCs

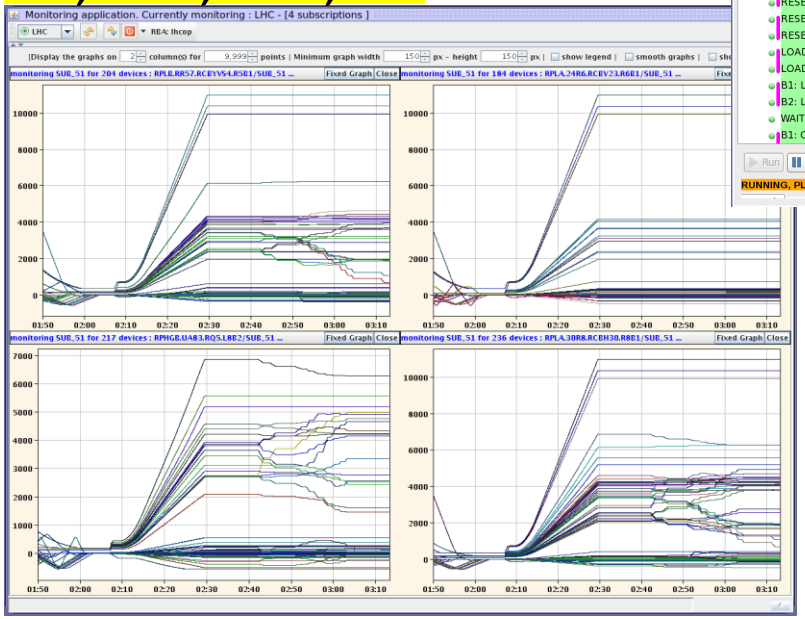
- **RAMP ,SQUEEZE 1 step + SQUEEZE in 11 steps- RAMPDOWN of:** S12, S23, S45, S56, S67, S78 (w/o mains) and S81
- RQ6.R7B2, RQT13.R7B1/2 tripped at 695 s in the SQUEEZE
- **Collimators** ramping up & down continuously all night



S12, S23, S45



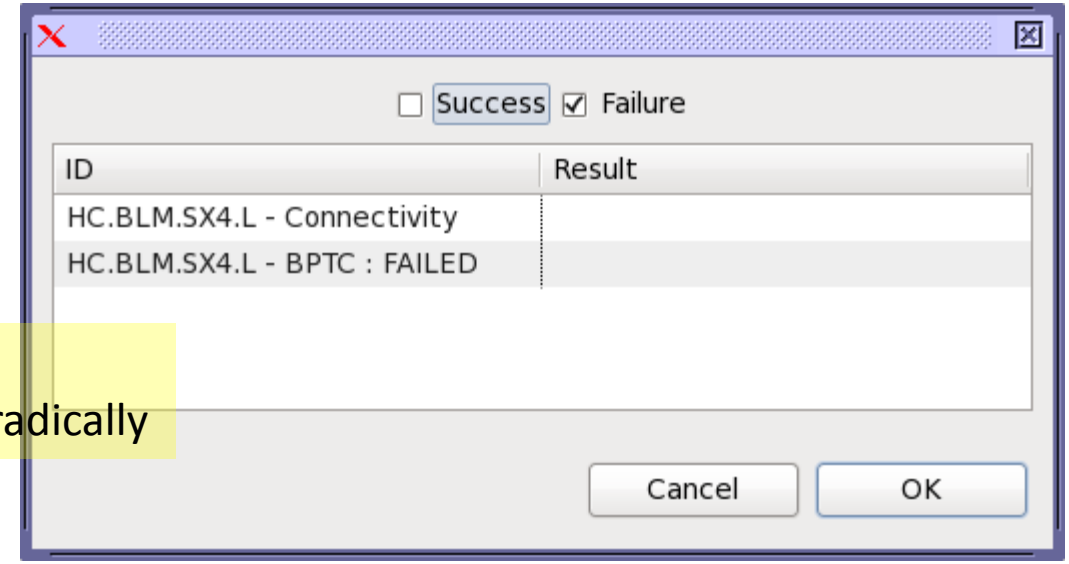
S56, S67, S78, S81



Operation tests

- Nominal sequence :
  - Some Machine Critical SETTINGS checks still failing for LBDS.
    - ABT informed.
  - HW/database mismatch for ABORTGAP CLEAN parameters
  - BPM calibration failed : host not reachable >> BI informed
  - BLM MCS checks

BLM sanity check still failing:
consistent problem in P4 & others sporadically



Access requests

WHO	WHERE	WHEN	WHAT	Duration
EN/MME	Point 4		Xray Material	2 hrs.
ELQA	Point 4		Measurement	4 hrs.
EN/EL	Point 8		Earth Fault repair	2 hrs.
ELQA /EPC	Point 8		RB 78	4 hrs.
ABT/MKI	Point 8		MKI8A voltage connector	3 hrs.
Alice				2* 4 hrs.

Plan of the day

- **Access 8:00 – 12:00**
- **RB.A34 ELQA measurement**
- EPC connection RB 78
- EN/EL repair RB 78
- Continue PGC's S45

- Full Operational machine cycle tests
- Nominal sequence tests
- Precycle, ramp and squeeze in all possible sectors
- RF tests
- Collimator tests
- LHC & Experiments closed after access

https://indico.cern.ch/category/6386/

Tentative plan

ACTIVITY	TIME	PLAN
C19L4 IFS reconfiguration	1 hour	Tuesday
MIC test on C19L4 and A19L4	1 hour	Tuesday
ELQA test at 2.1 kV	1 hour	Tuesday
Transient Voltage Suppressors removal	1 hour	Tuesday
Reconnection of the QPS (iQPS + nQPS)	1 hour	Tuesday
ELQA test at 1.5 kV	1 hour	Tuesday
DC cable connection	2 hours	Tuesday
Switch on heater power supplies of all magnets	2 hours	Wednesday
Heater firing (on MBA line)	3 hours	Wednesday
PC unlock	1 hour	Wednesday
PCC	45 min	Wednesday
PIC2	2 hours	Wednesday
PLI2.b2 (2 kA)	30 min	Wednesday
Heater induced quench in C19L4 @ 3.5 kA	3 hours	Wednesday
PLIM.b2 (5 kA)	1 hour	Wednesday
PLI3.d2 (9 kA)	1 hour	Wednesday
PNO.b2 (I_PNO+I_DELTA)	2 hours (depending on training)	Wednesday N
PNO.a6	3 hours	Wednesday N
PGC.1	3 hours	Wednesday N
PGC.2	1 hours	Thursday
PGC.3	1 hour	Thursday
PGC.4	1 hour	Thursday
RB+RQD+RQF	3 hours	Thursday
TOTAL		**~3 days**

Tentative plan

- **Friday** Sector 34 circuits operational
  - (If no problems encountered)
- Beam loop closing.
- BIS machine protection tests.
- LBDS –BIS machine protection tests
- BIS Interlock valves
- All Machine cycling all sectors together
- First beam not before **Easter Sunday-Monday**

- Checking Experts availability during Easter week end!!