

Report: 27

Activity: LHC Insulation Vacuum

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Meeting 06/07/2020



LS2



Performed activities during last 2 weeks

- Leak test activities

- B12.Q: leak at C line; new leak research started last Friday: results need further analysis, but leak points out to service module (TBC in the following days); leak research activities to continue until Wednesday
- A23L5.M: leak at C'k circuit; local leak tests under vacuum (clamshell) \Rightarrow local pressurization of 2x loops @10 bar and 15 bar He + leak tests under accumulation \Rightarrow no He signal \Rightarrow multiple tries made during LS1 and LS2, no degradation observed, ICs to be closed
- A19R5.M: multiple leak tests under vacuum without success \Rightarrow new clamshell for M-bellows test under production, tests to continue in 1-2 weeks

- Closure and preparations for global leak tests

- Envelope leak test of 4x volumes at S2-3, DSLC-DFBLC volume in S3-4 and 6x volumes at S6-7
- Pump-down start of 3x volumes in S2-3, 1x in S6-7 and 5x volumes in S7-8

Performed activities during last 2 weeks

- Closure and preparations for global leak tests
 - Implementation of safety valve configuration in S7-8
 - Resolution of O-ring NCs in s. 7-8
- Turbo pumping group consolidation and others
 - Pumping group consolidation in S1-2
 - 12x pump-down/venting cycles in triplets

	DISCO (diode flange) local LT	SIT local leak tests	SAM activities	QRL activities	Pumping group consolidation	
S1-2			(1)W29, (2) W28	(3) W28	(4) W28	(1) Triplet tie-rod + pumping group consolidation
S2-3			(1) W29, (2)		(5)	(2) Replacement of standalone damaged O-rings
S3-4			(2)			(3) Leak test research to continue after cryo. unlockout at B12.Q
S4-5			(1) W29, (2)			(4) Only 2 pumping groups at B12.Q to be installed at W28
S5-6			(1) W29, (2)			(5) LSS R2 pending (to be made after pressure test, W35-W37)
S6-7						
S7-8			(1) W28, (2) W28			
S8-1			(1) W28, (2) W28			

FINISHED

ONGOING

NOT STARTED

Status of pumping group consolidation

ARC 1-2																	
16R1.Q			24R1.Q		32R1.Q			32L2.Q		24L2.Q		16L2.Q		14L2.Q		13L2.Q	
Q15R1.M			Q23R1.M		Q31R1.M			Q31L2.M		Q23L2.M		Q15L2.M					

LSS RIGHT						ARCS	LSS LEFT						
S1-2	4R1.Q						4L2.Q						
	Q2R1.M	Q3R1.M	A4R1.M	A5R1.M	A6R1.M		A6L2.M	A5L2.M	A4L2.M	Q3L2.M	Q2L2.M		
S2-3	4R2.Q						4L3.Q						
	Q2R2.M	Q3R2.M	A4R2.M	A5R2.M	A6R2.M		A6L3.M						
S3-4	4R3.Q						4L4.Q						
	DFBLC						A6L4.M	B5L4.M	A5L4.M	SC2 L4	SC1 L4		
S4-5	4R4.Q						4L5.Q						
	SC1 R4	SC2 R4	A5R4.M	B5R4.M	A6R4.M		A6L5.M	A5L5.M	A4L5.M	Q3L5.M	Q2L5.M		
S5-6	4R5.Q						4L6.Q						
	Q2R5.M	Q3R5.M	A4R5.M	A5R5.M	A6R5.M			A5L6.M	A4L6.M				
S6-7	4R6.Q						4L7.Q						
			A4R6.M	A5R6.M			A6L7.M						
S7-8	4R7.Q						4L8.Q						
					A6R7.M		A6L8.M	A5L8.M	A4L8.M	Q3L8.M	Q2L8.M		
S8-1	4R8.Q						4L1.Q						
	Q2R8.M	Q3R8.M	A4R8.M	A5R8.M	A6R8.M		A6L1.M	A5L1.M	A4L1.M	Q3L1.M	Q2L1.M		

TO BE FINISHED
AFTER LEAK TESTS

TO BE CHECKED
AFTER TRIPLET
ACTIVITIES

TO BE FINALIZED
BY TE-VSC-ICM

Consolidation completed and pumping group operational

Mechanical assembly completed but pumping group not operational (waiting for ICM intervention)

Mechanical assembly completed but waiting for new intervention after consolidation of tie-rods

Consolidation not started but pumping group operational

Consolidation not started AND pumping group NOT operational

NOTE

Pumping groups of QRL only require mechanical intervention



	Consolidation completed and pumping group operational
	Mechanical assembly completed but pumping group not operational (waiting for ICM intervention)
	Mechanical assembly completed but waiting for new intervention after consolidation of tie-rods
	Consolidation not started but pumping group operational
	Consolidation not started AND pumping group NOT operational

NOTE Pumping groups of QRL only require mechanical intervention

DISMAC – leak test status



1-2 Local LT status
IC closure status
LT status - volumes

A7R1	A11R1	A15R1	A19R1	A23R1	A27R1	A31R1	A31L2	A27L2	A23L2	A19L2	A15L2	A11L2	A7L2
FINISHED BEFORE PRESSURE TEST (W33)													

Local LT status
 DISCO + SIT made
 Local LT NOT made





2-3 Local LT status
IC closure status
LT status - volumes

A7R2	A11R2	A15R2	A19R2	A23R2	A27R2	A31R2	A31L3	A27L3	A23L3	A19L3	A15L3	A11L3	A7L3
[Orange box highlighting A7R2 to A31L3]													

IC closure status
 Volume + ICs closed
 Volume not fully closed
 OR not ready for pumping

3-4 Local LT status
IC closure status
LT status - volumes

A7R3	A11R3	A15R3	A19R3	A23R3	A27R3	A31R3	A31L4	A27L4	A23L4	A19L4	A15L4	A11L4	A7L4
FINISHED BEFORE PRESSURE TEST													

LT status - volumes
 LT OK; under pumping
 LT not made; under pumping
 Envelope LT OK; under pumping
 Volume vented to the air

4-5 Local LT status
IC closure status
LT status - volumes

A7R4	A11R4	A15R4	A19R4	A23R4	A27R4	A31R4	A31L5	A27L5	A23L5	A19L5	A15L5	A11L5	A7L5
ALMOST FINISHED BEFORE PRESSURE TEST													
[Red box highlighting A31L5 with text: CLOSED AND RE-OPENED LEAK]													

5-6 Local LT status
IC closure status
LT status - volumes

A7R5	A11R5	A15R5	A19R5	A23R5	A27R5	A31R5	A31L6	A27L6	A23L6	A19L6	A15L6	A11L6	A8L6
ALMOST FINISHED BEFORE PRESSURE TEST													
[Red box highlighting A19R5 with text: NOT CLOSED LEAK]													

TO BE FINISHED THIS WEEK (W28)

6-7 Local LT status
IC closure status
LT status - volumes

A8R6	A11R6	A15R6	A19R6	A23R6	A27R6	A31R6	A31L7	A27L7	A23L7	A19L7	A15L7	A11L7	A7L7
[Orange box highlighting A23R6 to A15L7]													

7-8 Local LT status
IC closure status
LT status - volume

A7R7	A11R7	A15R7	A19R7	A23R7	A27R7	A31R7	A31L8	A27L8	A23L8	A19L8	A15L8	A11L8	A7L8
[Red box highlighting A7R7 to A23R7]													

GLOBAL LEAK TESTS TO BE STARTED

8-1 Local LT status
IC closure status
LT status - volumes

A7R8	A11R8	A15R8	A19R8	A23R8	A27R8	A31R8	A31L1	A27L1	A23L1	A19L1	A15L1	A11L1	A7L1
FINISHED BEFORE PRESSURE TEST (W30)													

Planned activities for next 2 weeks

- Leak test activities
 - B12.Q: leak at C line; FINISH leak tests @10 bar He
 - A23L5.M: leak at C'k circuit; local leak tests under vacuum (clamshell) \Rightarrow C' sleeves to be re-welded + lcs to be closed \Rightarrow re-pumping (leaking area research to continue under vacuum)
 - A19R5.M: local leak tests with new M-bellows clamshell to continue
- Closure and preparations for global leak tests
 - Envelope leak test of ~12 vacuum subsectors (finish S2-3 and S6-7 + start S7-8)
 - Pump-down start of ~9 vacuum subsectors
 - Replacement of standalone damaged O-rings (6x positions), including leak tests

Planned activities for next 2 weeks

- Closure and preparations for global leak tests
 - Finish resolution of O-ring NCs in s. 7-8
- Turbo pumping group consolidation and others
 - End of pumping group consolidation in S1-2 (2 positions at B12.Q)
 - ~8x pump-down/venting cycles in triplets

Status of resources

- AL4030: 4 teams + 2 team coordinators (50%, shared with other activities) + % of 1 store keeper (also allocated for mechanical assembly on surface)
 - Reduction to come from August on
 - 1 team coordinator on most of July and August
- CERN: Natalia, Wim, Guillermo (% varies according to his activities in cPS) and Jaime

Thank you !



| **LS2**

