

P5 Schedule for RE4 activities

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CERN, Geneva

RE4 LS1 Summary

❖ Task 1- RE+4 gas piping

- Period: 18.Feb.2013 – 18.Apr.2013
- Intervention: Install RE+4 gas pipes from the gas rack to the patch panels

❖ Task 2 – RE+4 cooling mini manifold installation

- Period: 04.Apr.2013 – 15.Apr.2013 **NEW: since 04.Apr.2013**
- Intervention: Install RE+4 cooling mini manifolds and connection to main manifold. Leak test.

❖ Task 3 – RE+4 Services

- Period: 27.May.2013 – 17.Jul.2013 [38d]
- Intervention: Install RE+4 services: HV cables, signal cables, DCS cables.

❖ Task 4 – RE-4 Services

- Period: 16.Oct.2013 – 20.Nov.2013 [26d]
- Intervention: Install RE-4 services: gas piping and cooling, HV cables, signal cables, DCS cables

❖ Task 5 – RE+4 SM Installation

- Period: 30.Oct.2013 – 14.Nov.2013 [12d] **NEW: since 03.Oct.2013**
- Intervention: Install RE+4 SM + services + cables + commissioning

❖ Task 6 – RE-4 SM Installation I

- Period: 13.Mar.2014 – 19.Mar.2014 [5d] **NEW: since 06.Feb.2014**
- Intervention: Install RE-4 SM + services + cables

❖ Task 7 – RE+/-4 SM Installation II

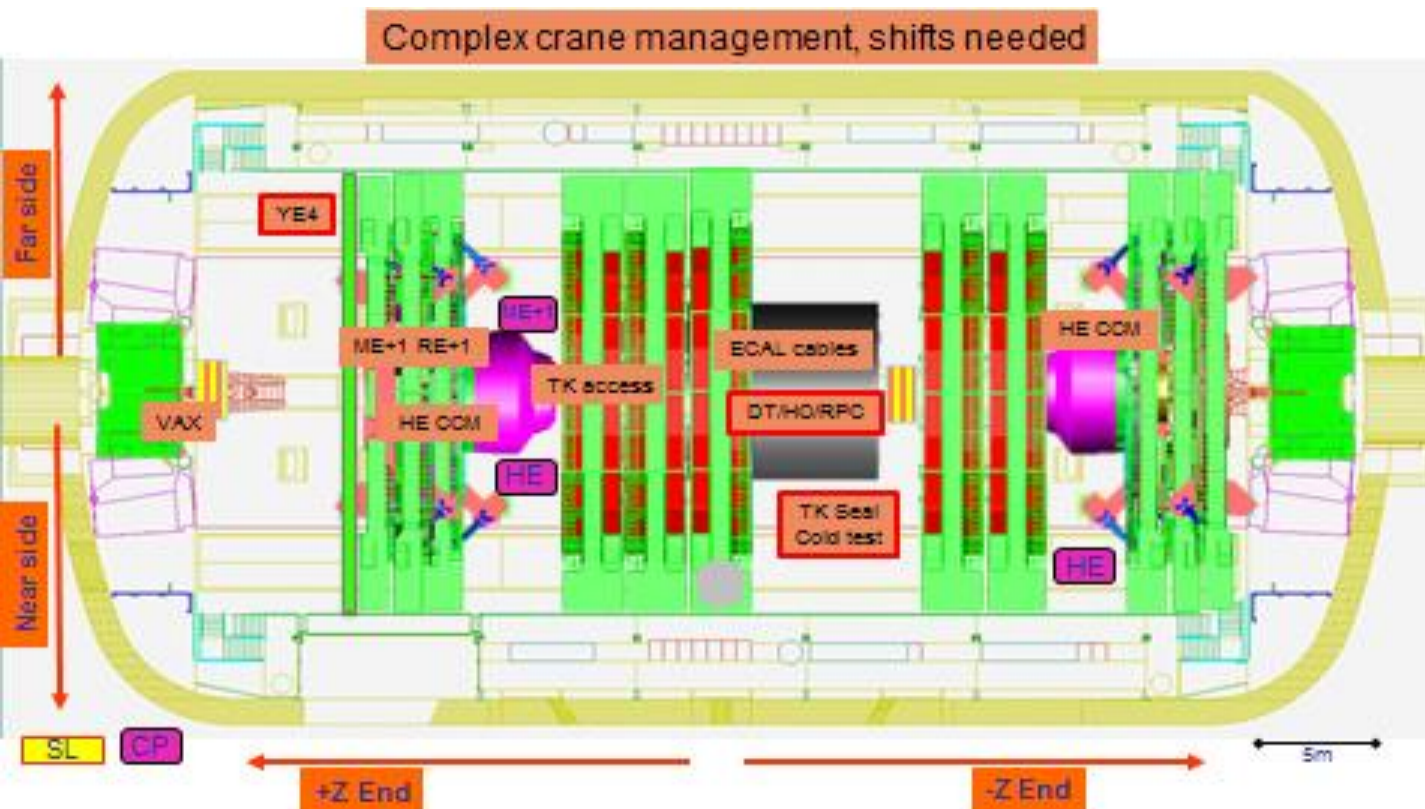
- Period: 23.Sep.2014 – 07.Oct.2014 [15d]

DONE

BACK UP SLIDES

RPC LS1 Overview I

- ❖ *Configuration I: YB0- & RE+1 => 24.Jul.2013 – 09.Sep.2013 [34d]*
 - ❖ *Maintain RE+1 [31.Jul.2013 – 06.Aug.2013], 5d*
 - ❖ *Work on YB0- [24.Jul.2013 – 26.Aug.2013]*
 - *Task 1: HV connector reparation – no problems*
 - *Task 2: LV/Threshold Problems – 3 chambers*
 - *Task 3: Gas – 2 chambers*



Requirements:

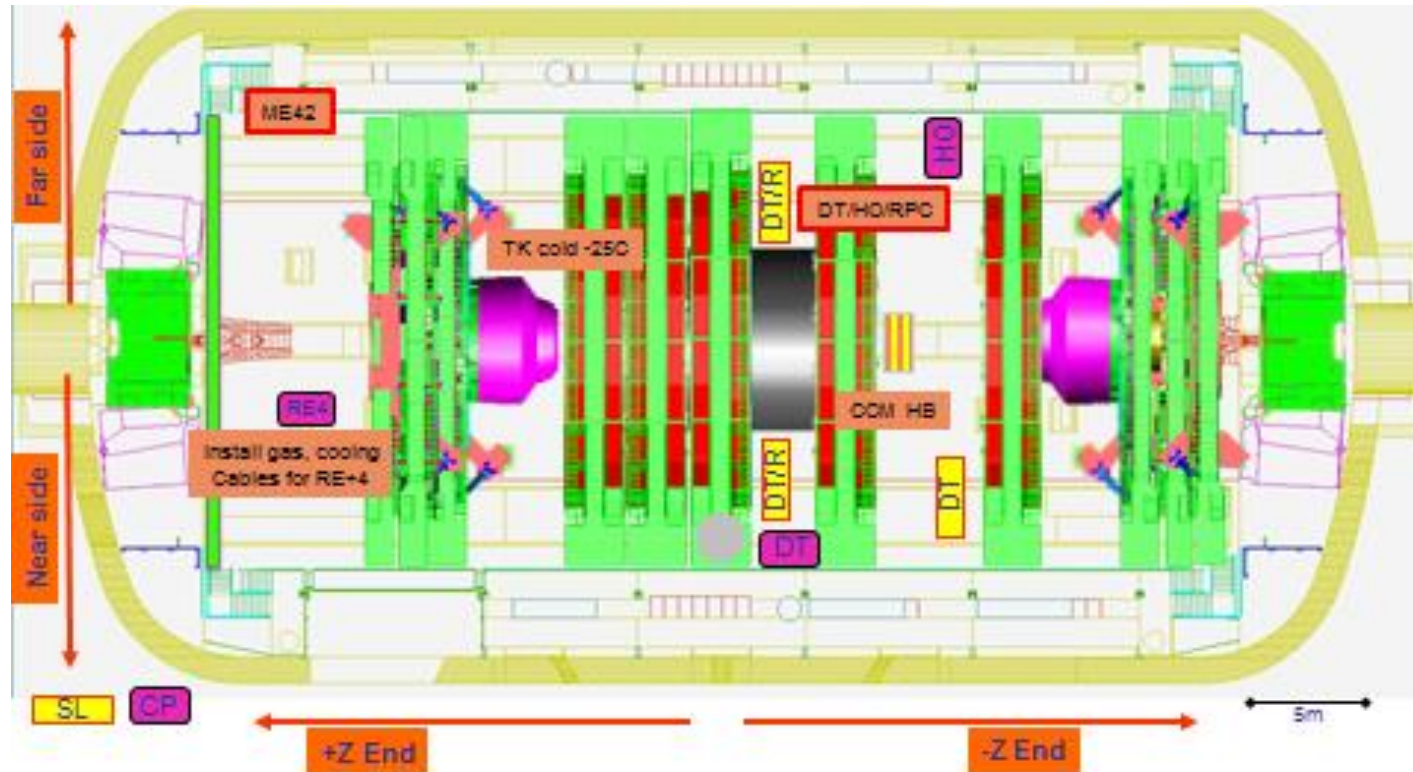
- 4 SL on both sides
- Technicians for cabling & chamber extraction

Attention:

- Work during summer holidays!!!

RPC LS1 Overview II

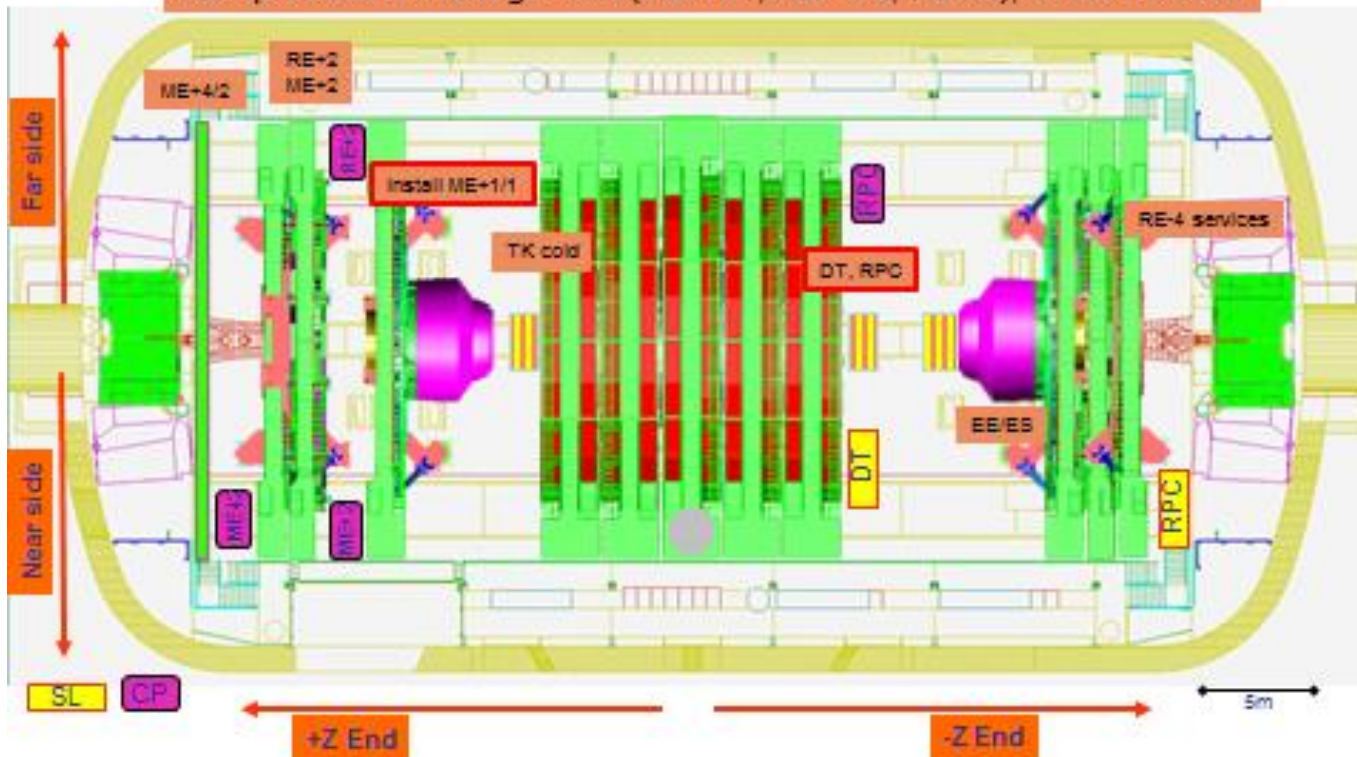
- ❖ Configuration II: YB-1 & RE+4 => 10.Sep.2013 – 09.Oct.2013 [22d]
 - ❖ RE+4 Services with frontal YE3 access 13.Sep.2013 – 08.Oct.2013
 - ❖ Work on YB-1 [10.Sep.2013 – 09.Oct.2013]
 - Task 1: HV connector reparation – 4 chambers
 - Task 2: LV/Threshold Problems – 4 chambers
 - Task 3: Gas – 6 chambers



RPC LS1 Overview III

- ❖ Configuration III: YB-2 & RE+2 =>10.Oct.2013 – 22.Nov.2013
 - ❖ *Maintain RE+2 [24.Sep.2013 – 30.Sep.2013], 5d*
 - ❖ *Install RE-4 Services [16.Oct.2013 – 20.Nov.2013], 26d*
 - ❖ *Work on YB-2 [10.Oct2013 – 22.Nov.2013]*
 - *Task 1: HV connector reparation – 2 chambers*
 - *Task 2: LV/Threshold Problems – 1 chamber*
 - *Task 3: Gas – 4 chambers*

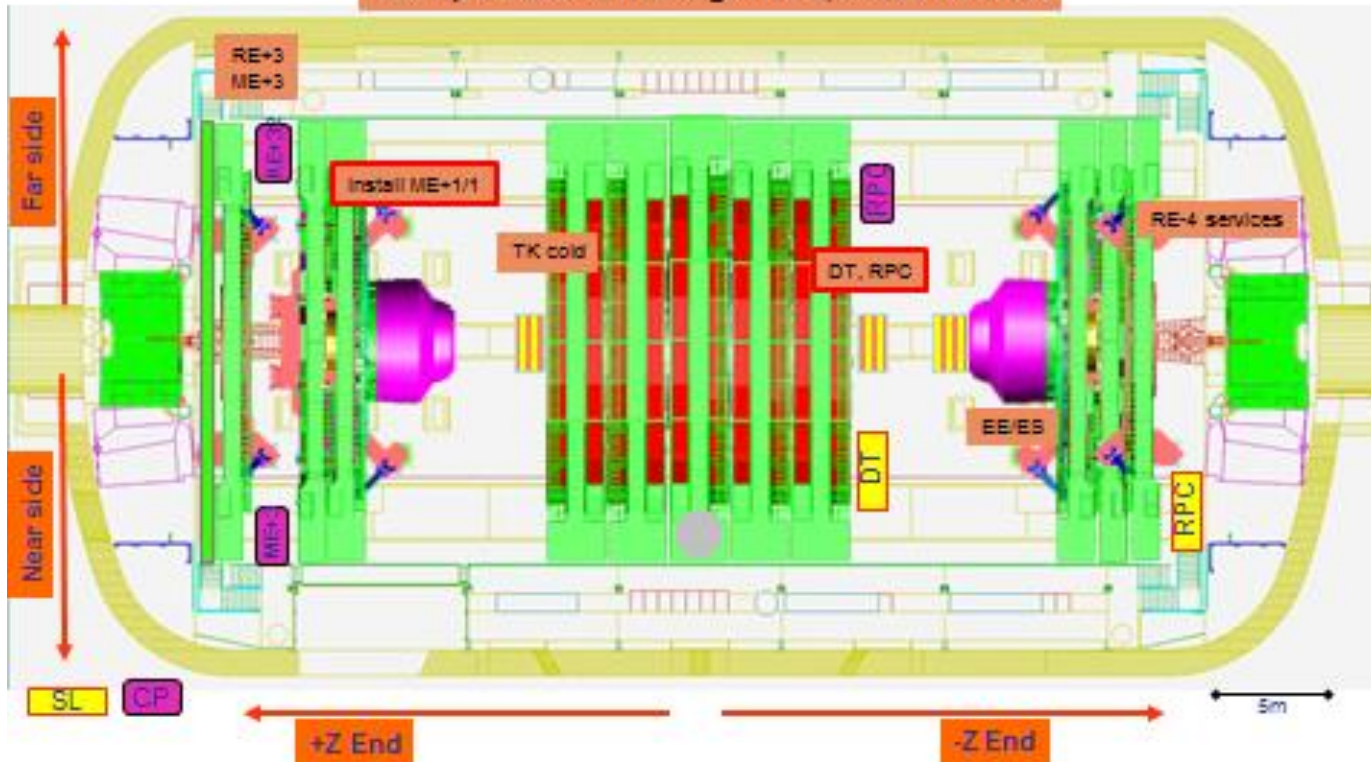
Complex crane management (ME+1/1, ME+4/2, ME+2), shifts needed



RPC LS1 Overview IV

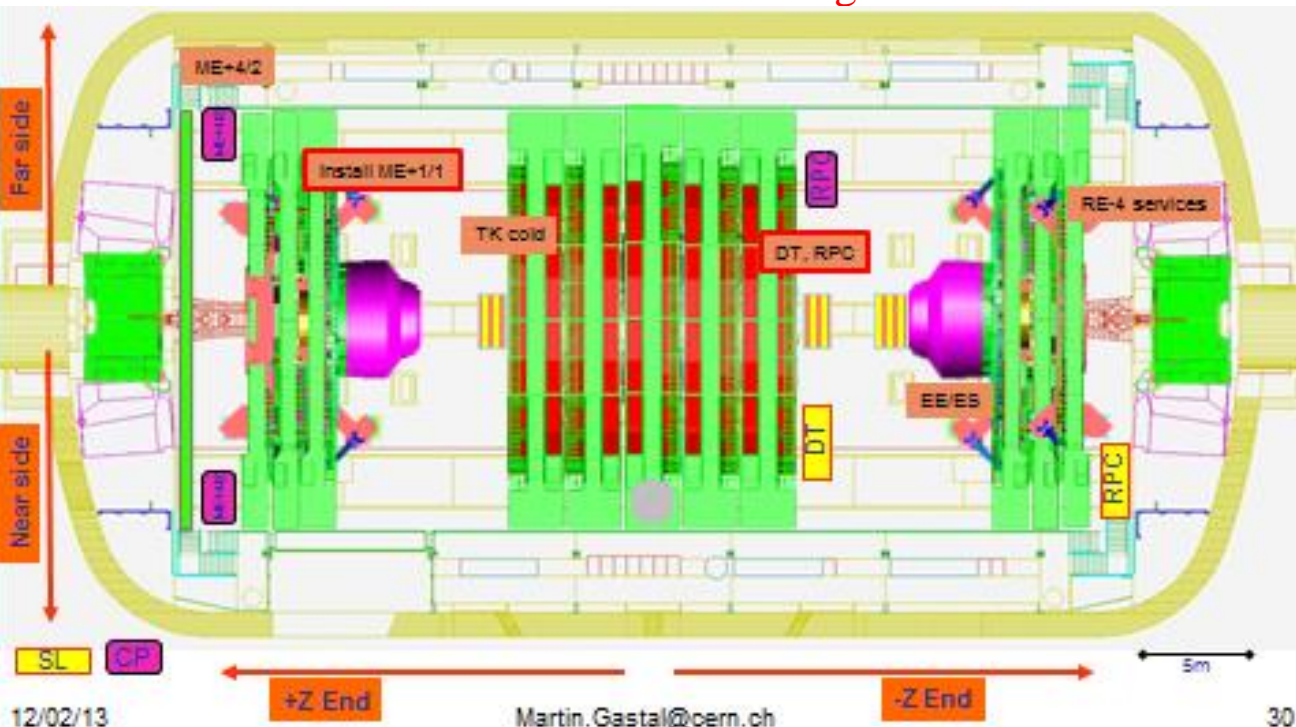
- ❖ Configuration IV: RE+3 =>02.Oct.2013 – 08.Oct.2013
 - ❖ Maintain RE+3 [02Oct.2013 – 08.Oct.2013], 5d

Complex crane management, shifts needed



RPC LS1 Overview V

- ❖ Configuration V: Commissioning ME+4/2F & RE+4 Installation => 10.Oct.2013 – 22.Nov.2013
 - ❖ Install 18 ME4/2F chambers [10.Oct.2013 – 18.Oct.2013], 7d
 - ❖ Commission ME+4/2F chambers [21.Oct.2013 – 29.Oct.2013], 7d
 - ❖ RE+4 SM Installation + cables + services + commissioning [30.Oct.2013 – 14.Nov.2013], 12d
 - All cables should be connected
 - Gas services should be connected
 - No time for commissioning



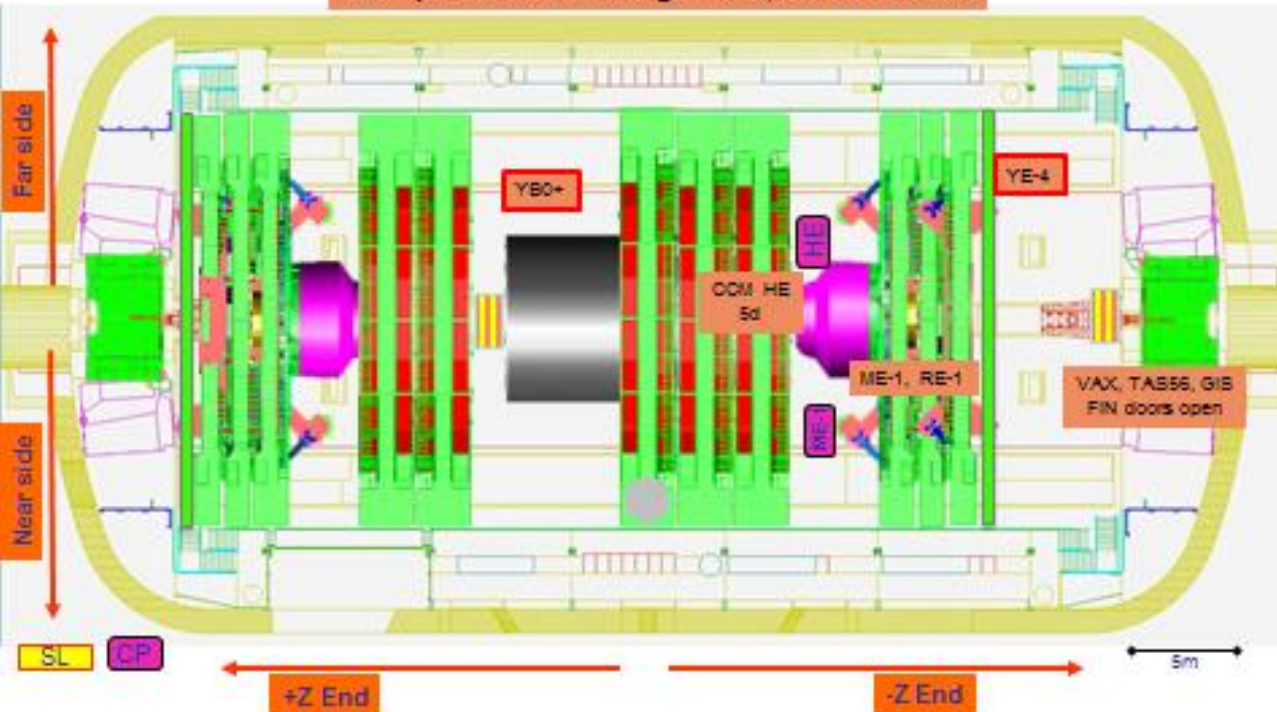
Attention:

- RE+4 Installation can be (should be) anticipated during ME4/2F commissioning.

RPC LS1 Overview VI

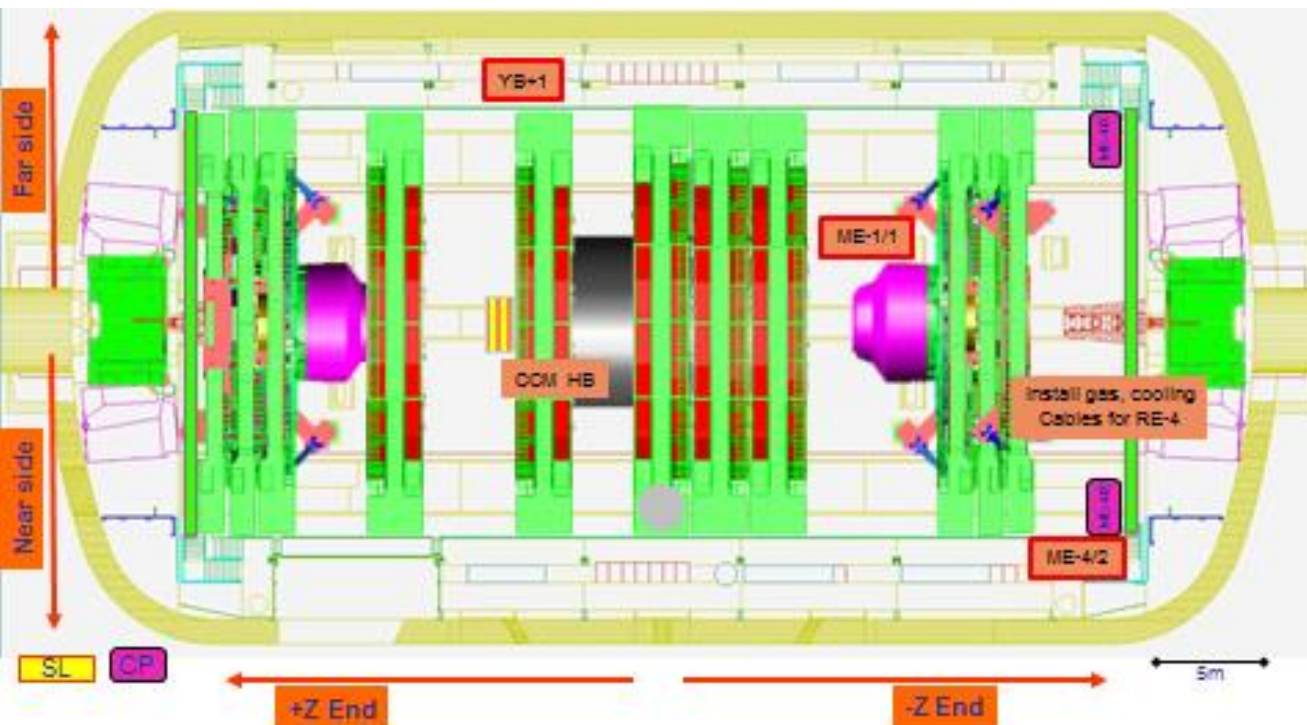
- ❖ Configuration VI: YB0+ & RE-1 => 19.Nov.2013 – 15.Jan.2014
 - ❖ Maintain RE-1 [26.Nov.2013 – 02.Dec.2013], 5d
 - ❖ Leak Detection Cables, 2-3d
 - ❖ Work on YB0+ [19.Nov.2013 – 15.Jan.2014], 32d
 - Task 1: HV connector reparation – 1 chamber
 - Task 2: LV/Threshold Problems – 1 chamber
 - Task 3: Gas – 3 chambers

Complex crane management, shifts needed



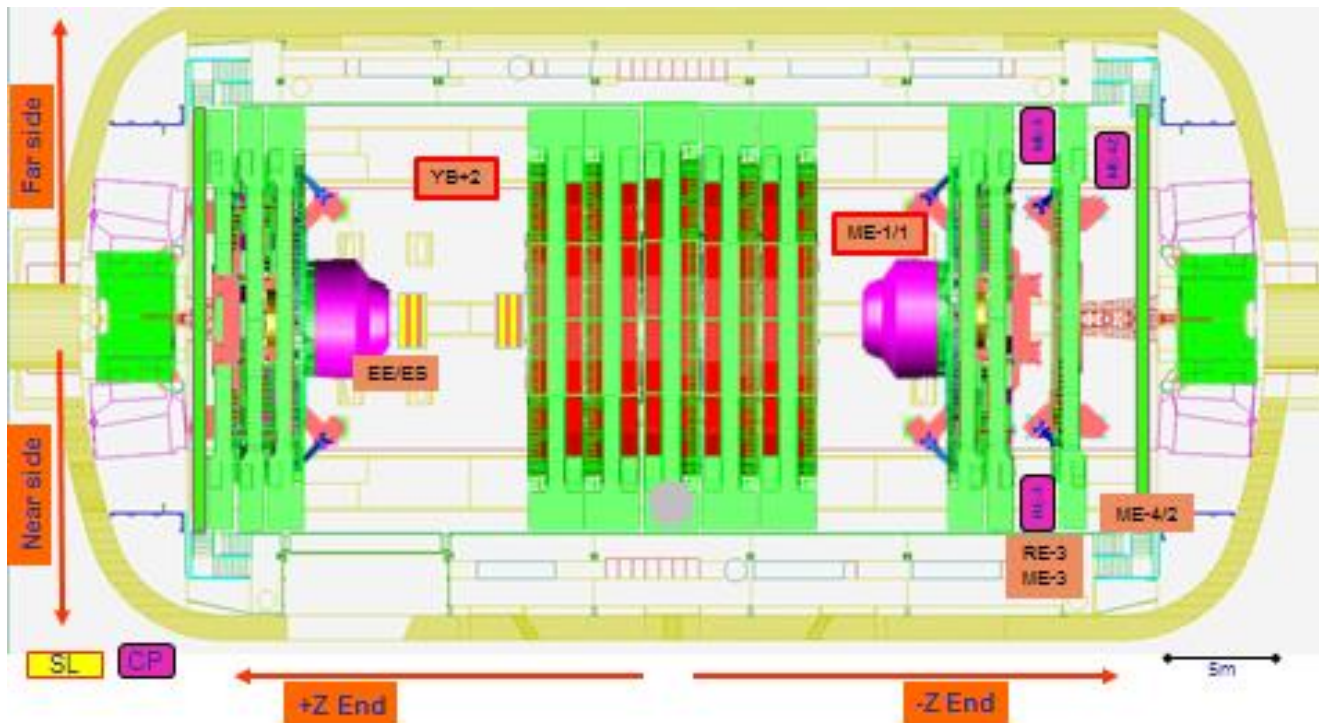
RPC LS1 Overview VII

- ❖ Configuration VII: YB+1 => 16.Jan.2014 – 12.Feb.2014
 - ❖ Window for eventual RE-4 gas, cooling & cable installation [22.Jan.2014 – 31.Jan.2014], 7d
 - ❖ Work on YB+1 [16.Jan.2014 – 12.Feb.2014], 19d
 - Task 1: HV connector reparation – 6 chamber
 - Task 2: LV/Threshold Problems – 1 chamber
 - Task 3: Gas – 0 chambers



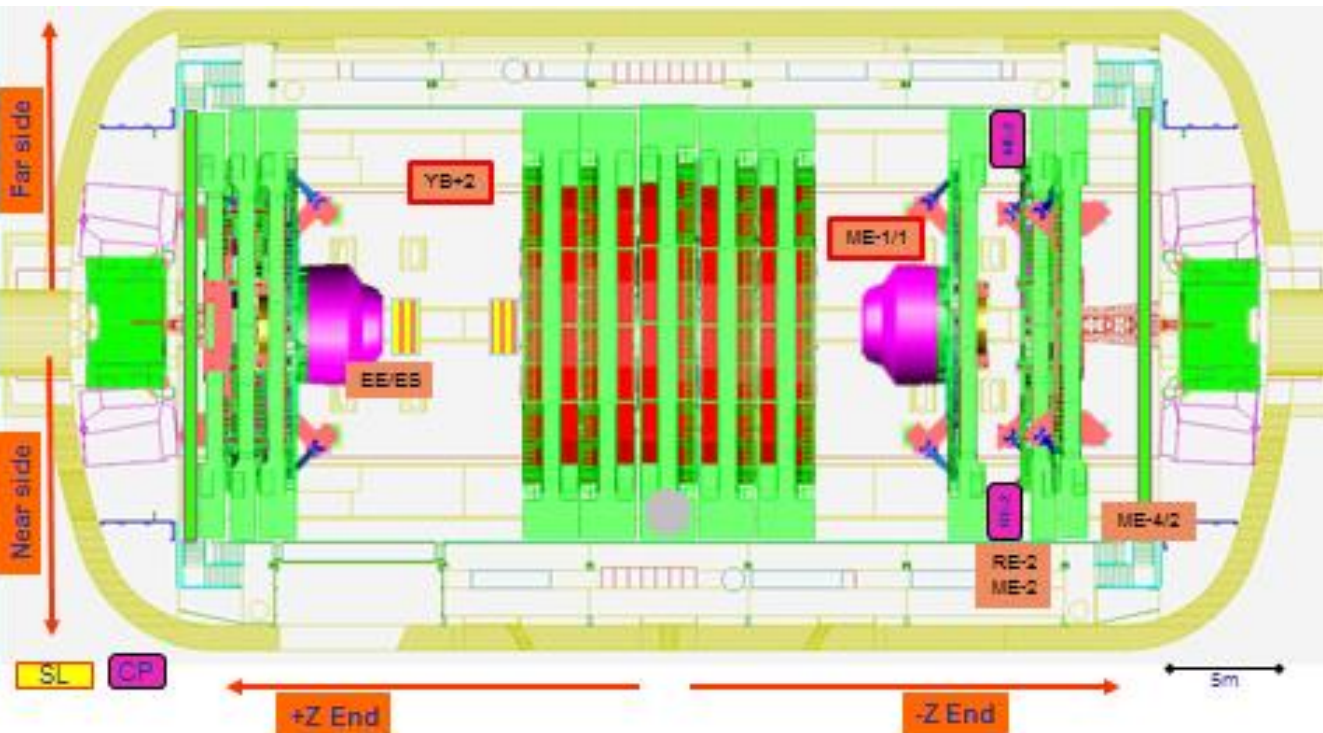
RPC LS1 Overview VIII

- ❖ Configuration VIII: RE-3 => 04.Feb.2014 – 10.Feb.2014
 - ❖ Maintain RE-3 [04.Feb.2014 – 10.Feb.2014], 5d
 - ❖ Can we do anything during ME-4/2B commissioning [04.Feb.2014 – 18.Feb.2014]?



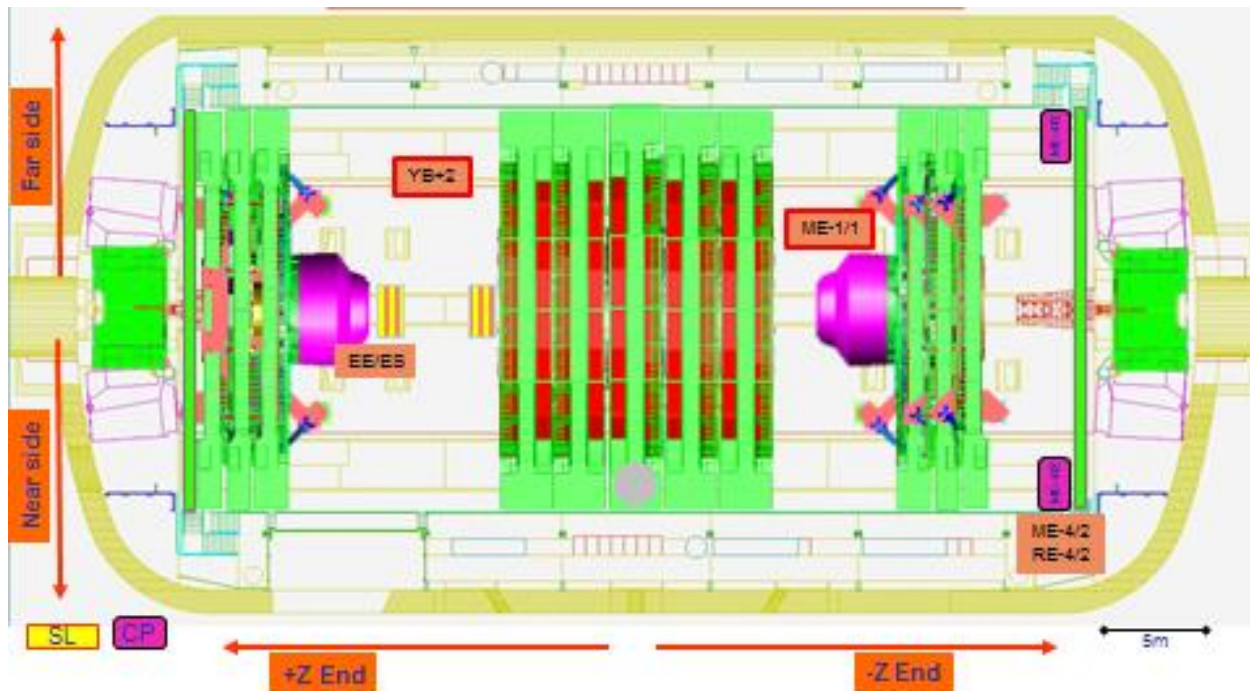
RPC LS1 Overview IX

- ❖ Configuration IX: YB+2 & RE-2 => 12.Feb.2014 – 20.Mar.2014
 - ❖ Maintain RE-2 [12.Feb.2014 – 18.Feb.2014], 5d
 - ❖ Work on YB+2 [12.Feb.2014 – 20.Mar.2014], 28d
 - Task 1: HV connector reparation – 4 chamber
 - Task 2: LV/Threshold Problems – 3 chamber
 - Task 3: Gas – 3 chambers



RPC LS1 Overview X

- ❖ Configuration X: RE-4 Installation => 13.Mar.2014 – 19.Mar.2014
 - ❖ Install ME-4/2F + cables/services + commissioning [20.Feb.2014 – 04.Mar.2014]
 - ❖ RE-4 SM installation [13.Mar.2014 – 19.Mar.2014]
 - ❖ No time for cabling and gas connections?

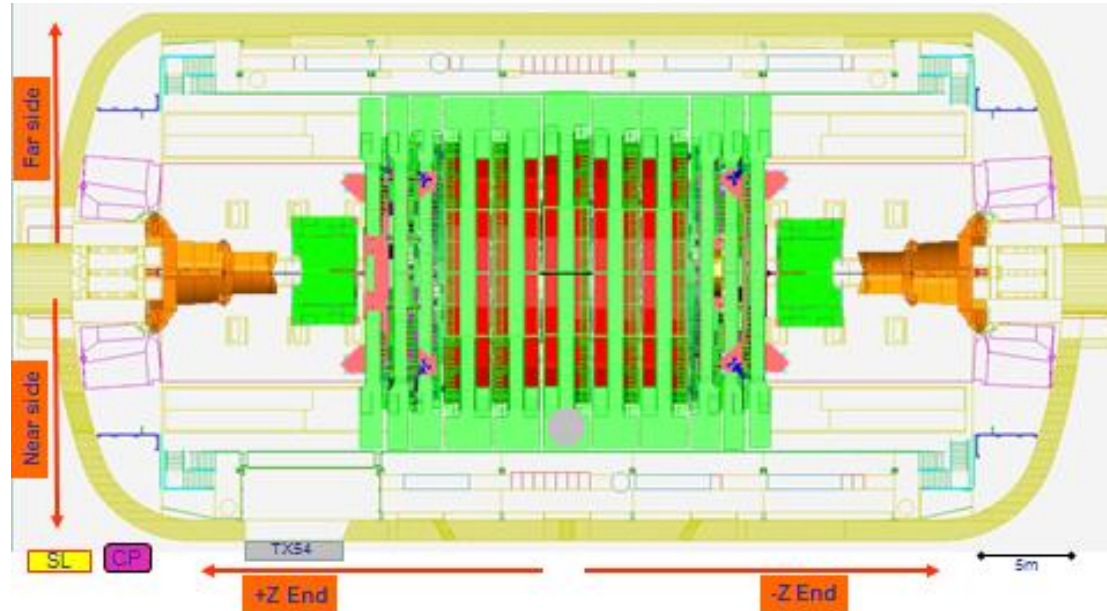


Attention:

- RE-4 Installation should be anticipated during the ME-4/2F commissioning

RPC LS1 Overview XI

- ❖ Configuration XI: Master Magnet Test + CRAFT14 => 25.Aug.2014 – 15.Sep.2014



- ❖ Configuration XII: Installation/Commissioning of ME-4/2 & RE-40 => 23.Sep.2014 – 07.Oct.2014

RE+ LS1 Intervention Summary

RE+1: Total access time requested **31 days.**
5 days are available in the period 31.Jul.2013 – 06.aug.2013. YE+1 is accessible for much longer period. In agreement with CSC colleagues we have defined a parallel working schema during LS1.
4 days to change/commission 4 HV connectors,
15 days for change 5 LV DB or FEB (CSC removal)
12 days for repair 5 cooling by-pass (CSC removal, one of them has LV Threshold problem too)

In order the parallel activities to be successfully carried out enough number of CP with spare charged batteries should be available.

RE+2: Total access time requested **7 days,** no interference with other sub-detectors
5 working days are available in the period 24.Sep.2013 – 30.Sep.2013
4 days to change/commission 3 HV connectors
3 days for search and repair of 3 gas leaking sectors

RE+3: Total access time requested **8 days,** no interference with other sub-detectors
5 working days are available in the period 2.Oct.2013 – 8.Oct.2013
4 days to change/commission 7 HV connectors
1 day for 1 LV Threshold Problem
3 days for search and repair 3 gas leaking sectors.

RE- LS1 Intervention Summary

RE-1: Total access time requested **10 days**.

5 days are available in the latest LS1 schedule, 26.Nov.2013 – 02.Dec.2013. YE-1 is accessible for much longer period but any other activities are in conflict with ME-1/1 interventions.

4 days to change/commission 9 HV connectors,

3 days for change 1 LV DB or FEB (CSC removal *)

3 days for repair 1 cooling by-pass (CSC removal*)

RE-2: Total access time requested **7 days**, no interference with other sub-detectors

5 working days are available in the period 12.Feb.2014 – 18.Feb.2014

4 days to change/commission 1 HV connector

3 days for search and repair of 3 gas leaking sectors

RE-3: Total access time requested **5 days**, no interference with other sub-detectors

5 working days are available in the period 04.Feb.2014 – 10.Feb.2014

4 days to change/commission 6HV connectors

1 days for search and repair 1 gas leaking sectors.