

ELENA Project

E. Harrouch

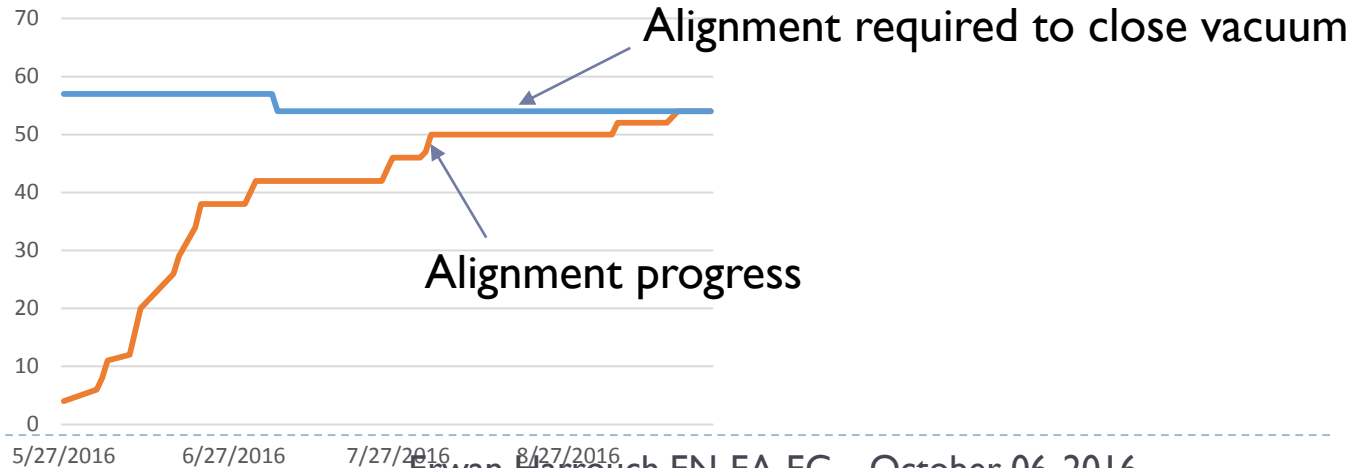
Installation follow-up & Planning update
+ Hardware Commissioning

Alignment

▶ Statut de l'alignement : 100%

- ▶ Correctors magnets are not aligned, the survey only measures their position after installation : ~~Difference of 5mm in the radial direction (Toward the inside of the machine)~~ Corrected to ~1mm of difference

- ▶ Last step on-going : « Lissage » of the machine. LNR 20 being treated



ELENA Magnets status w41

▶ 12 MCCAY H/V correctors status:

- ▶ 1-MCCAY03: Installed in position LNR.MCCAY.0130.;
- ▶ 2-MCCAY04: Installed in position LNR.MCCAY.-----.;
- ▶ 3-MCCAY05: Installation ongoing in position LNR.MCCAY.-----.;
- ▶ 4-MCCAY06: Installation ongoing in position LNR.MCCAY.-----.;
- ▶ 5-MCCAY07: Certification and modification ongoing, Installation should be on week 42;
- ▶ 6-MCCAY08: Certification and modification ongoing, Installation should be on week 42;
- ▶ 7-MCCAY09: Certification and modification ongoing, Installation should be on week 42;
- ▶ 8-MCCAY10 delivery foreseen on 18/10/2016. Installation could be on **28 /10/2016**;

- ▶ **9-MCCAY02: Certification is not OK, is going to repair by contractor ;**
- ▶ 10-MCCAY11, delivery foreseen on 24/10/2016, Installation could be on 03/11/2016;
- ▶ 11-MCCAY12 and 12-MCCAY13, delivery foreseen on 24/10/2016, Installation could be on 03/11/2016.

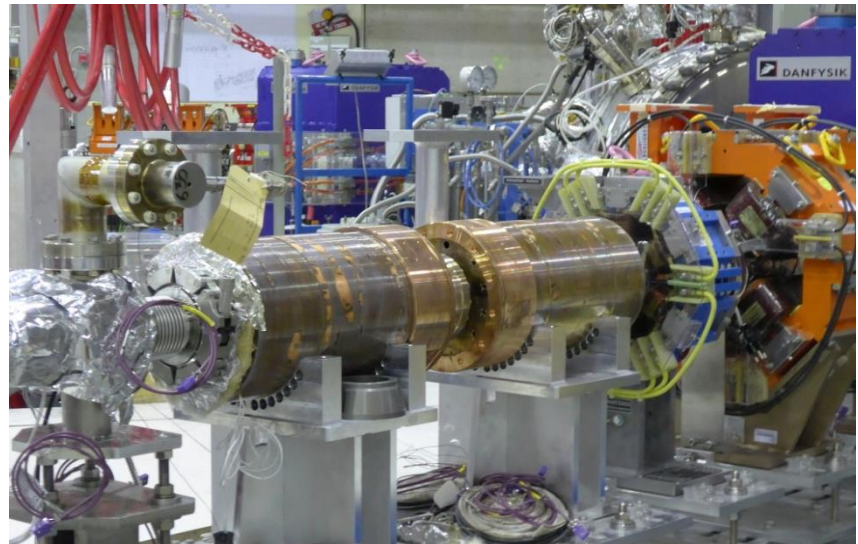
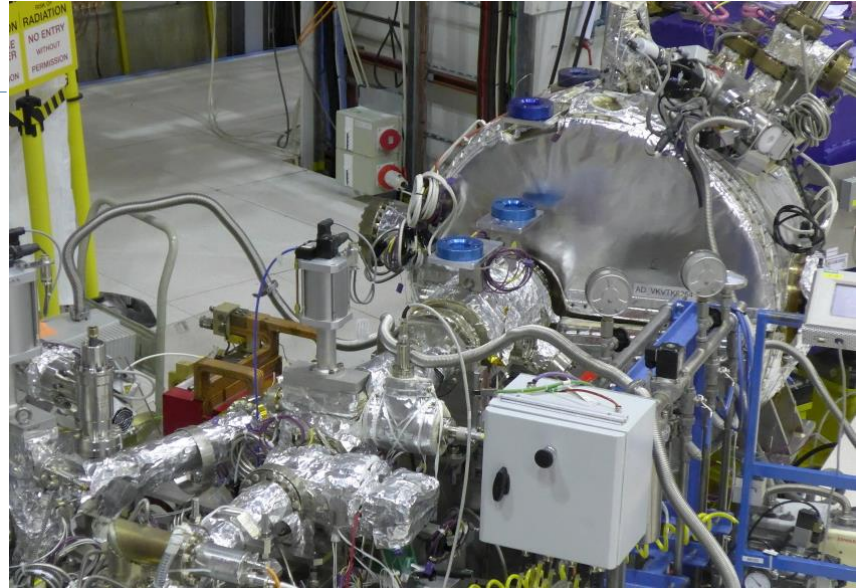
Modified to be installed around BPM?

13/10/2016

TE-MS/MNC

Follow up

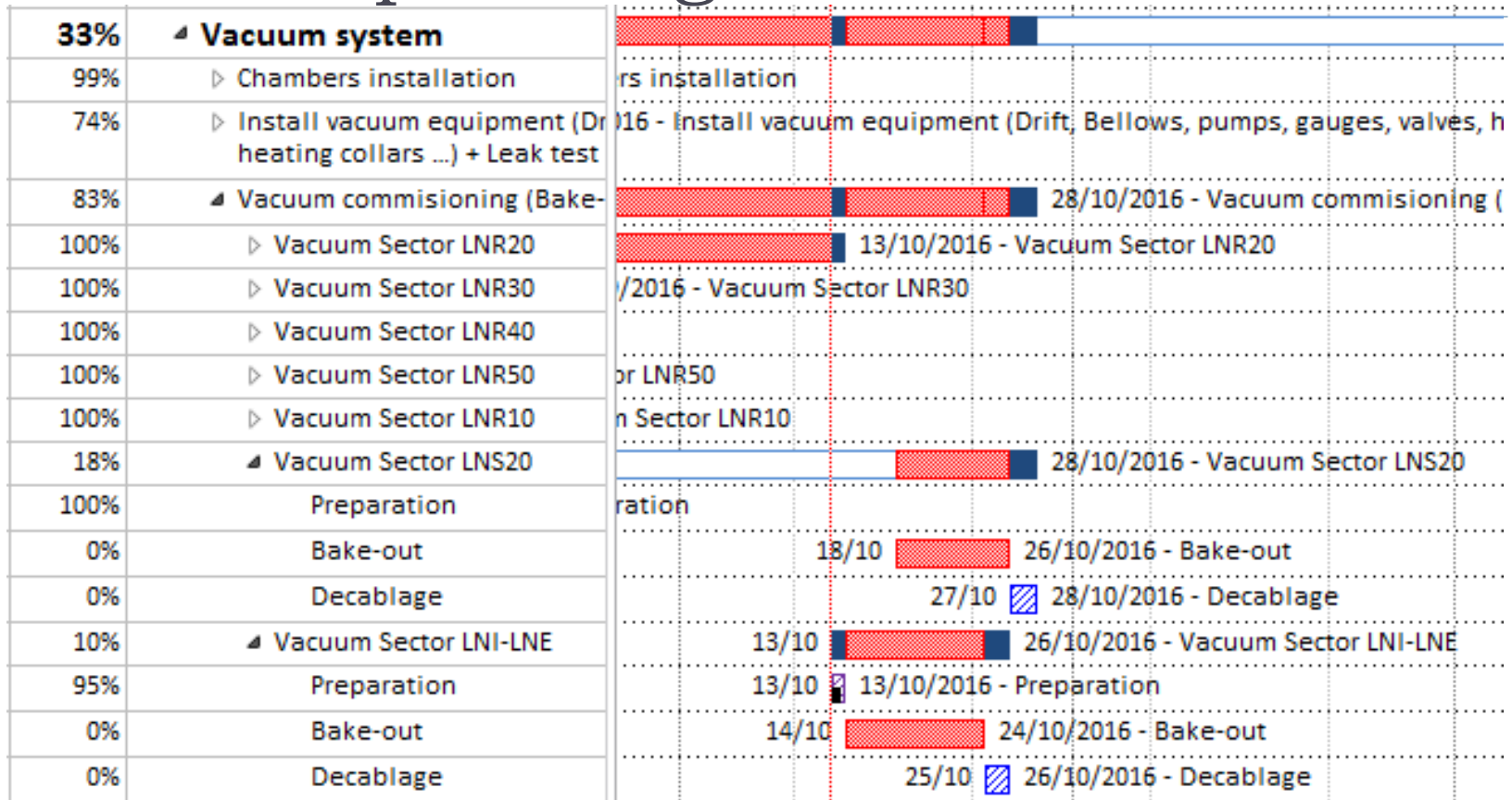
- ▶ Other equipment installation
 - ▶ Tune measurement : Installed and aligned,
 - ▶ Scrapers : Installed and tested,
 - ▶ Long PU : Installed,
 - ▶ BTV : Installed and tested
 - ▶ BPMs : Installed,
 - ▶ Injection Kicker : Installed
 - ▶ SEMs : First SEM : Installed on LNS. 3 / 4 SEM at CERN. (Not installed before bake-out of LNI-LNE)



Vacuum advancement

Vacuum sector	Desc.	Bake-out	Pressure reached
LNI-LNE	Inject, from AD + Eject. To exp.	Could start tomorrow (Interlock Ion Switch?)	-
LNS20	Source	Failure of one gate valve. Ordering for a new one on-going. Should start again with LNI-LNE	-
LNR10	Eject. to exp.	Done	1×10^{-12} mbars
LNR20	Inject. To ELENA	Being decabled	5×10^{-10} mbars
LNR30	Eject. to GBar	Done	2×10^{-12} mbars
LNR40	E-Cooler Sect	Done	1×10^{-10} mbars
LNR50	Sensors + BE	Done	5×10^{-12} mbars

Vacuum planning



- End of bake-out on LNI-LNE : 26/10/2016
- End of bake-out on LNS : 28/10/2016 (To be confirmed)

REMINDER

Hardware tests

- ▶ Any tests performed on the machine should follow the same procedure :
 - ▶ Notify Francois Butin and Jose Gascon by email with a description of the tests that you foresee.
 - ▶ Francois will then trigger a Visite d'Inspection Commune (VIC) if required
- ▶ **Please notify to me all the tests/work that will be performed after the end of the bake-out so they will be integrated to the planning.**

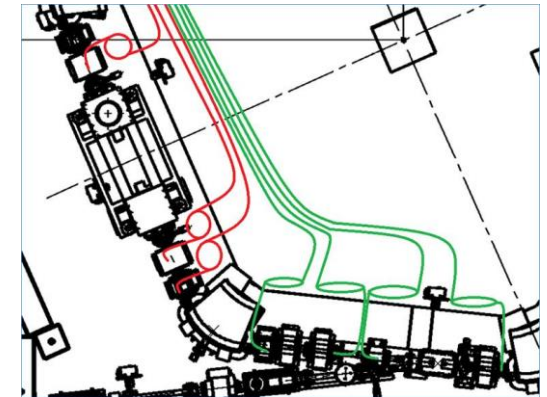
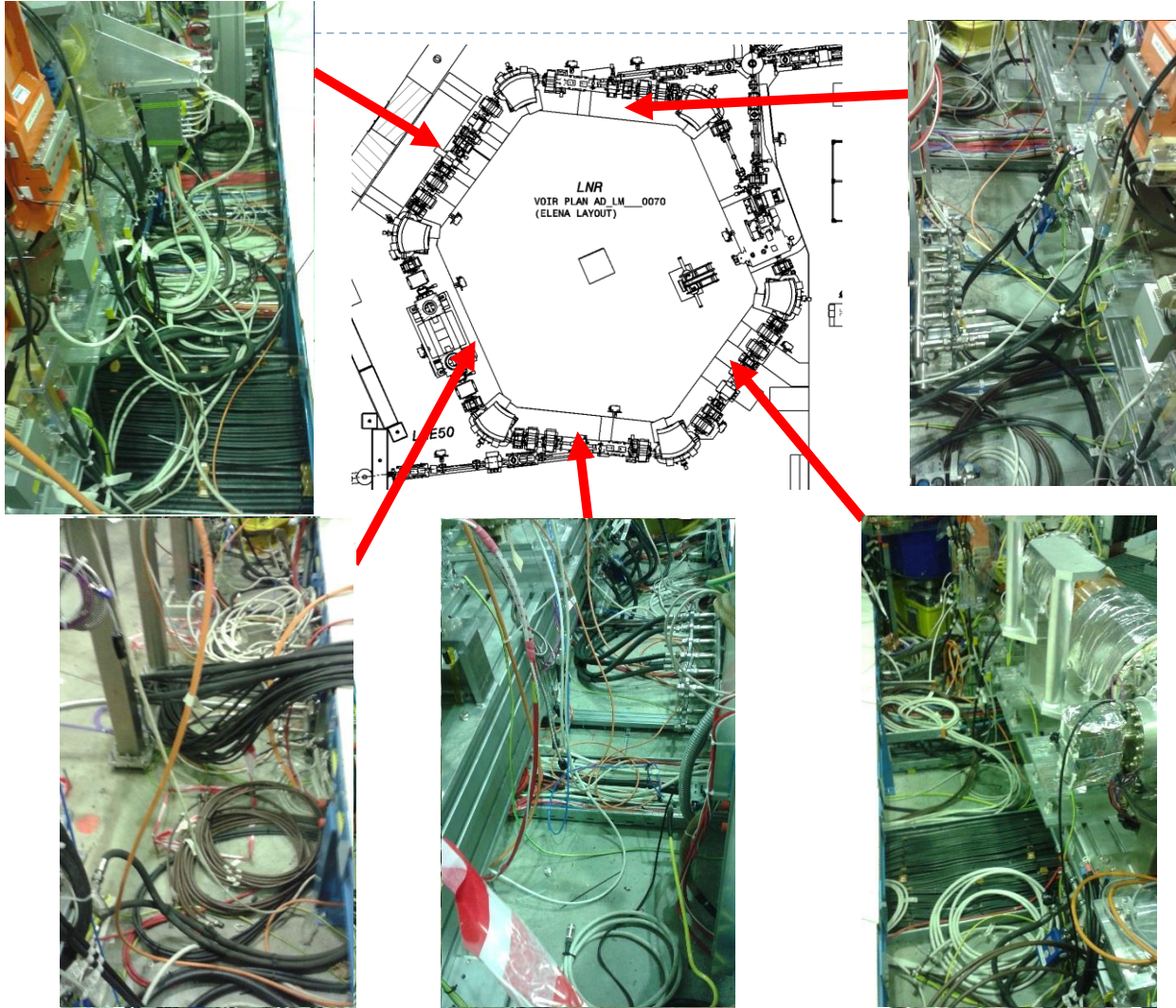
Hardware tests Planning

- ▶ Cf Excel file attached to the Indico meeting

Summary of next week

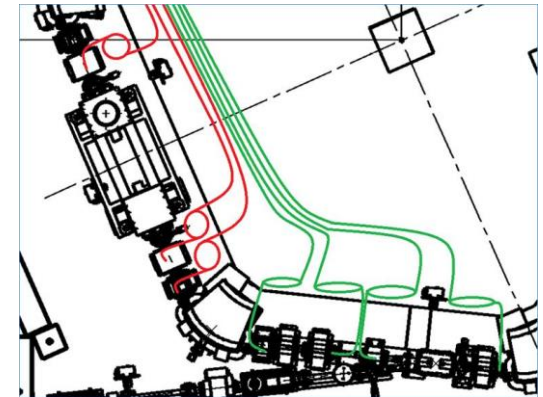
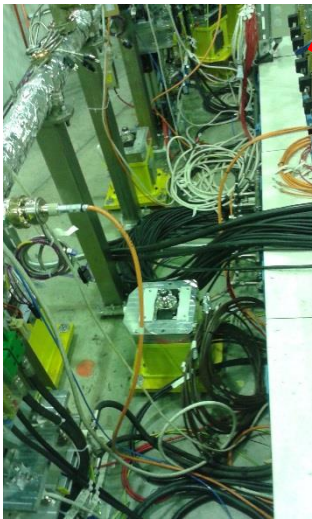
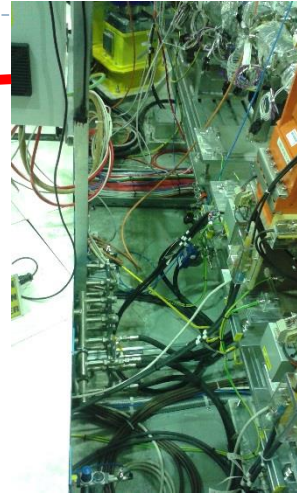
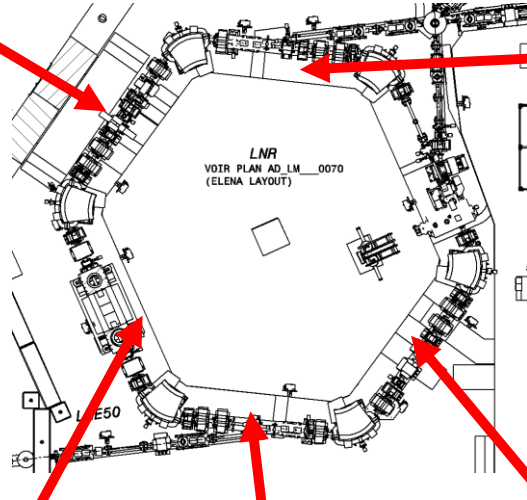
- ▶ Bake-out LNR20 (TE-VSC)
- ▶ ~~Bake-out LNS (TE-VSC)~~
- ▶ “Lissage” of LNR20(EN-ACE)
- ▶ Installation of 4 corrector magnets (TE-MSD)
- ▶ Closing of the Septum (TE-ABT, EN-ACE)
- ▶ BTV Re-assembly (BE-BI)
- ▶ Kicker connection box assembly (TE-ABT)
- ▶ Tune measurement tests? (BE-BI)
- ▶ BPM Final assembly and tests (BE-BI)
- ▶ Scrapers tests (BE-BI)
- ▶ RF Cavity tests (BE-RF)

On the 21/09



Please put your cables in the green configuration

On the 13/10



Please put your cables in the green configuration

Spare slides

Lock-outs

REMINDER

- ▶ Racks sous la responsabilité de TE-EPC :
- ▶ Liste des Racks Convertisseurs se trouvant sur la plateforme :
 - ▶ RYE01 à RYE03 Powering Ring (Responsable équipement : [Kuczerowski, Nicolas](#))
 - ▶ RYE08 Ion Switch (Responsable équipement : [Machado Christophe](#))
 - ▶ RYE10 à RYE13 Transfert Line HV (Responsable équipement : [Machado Christophe](#))
 - ▶ RYE18 à RYE21 Electron Cooler Low Converters (Responsable équipement : [Yves Thurel, Ludovic Charnay](#))
- ▶ Liste des Racks Convertisseurs se trouvant en salle de puissance :
 - ▶ RA-K302 à RA-K307 ELENA Electron Cooler (Responsable équipement : [Ludovic Charnay](#))
 - ▶ RB300 et RB301 Convertisseurs APOLO + Spare (Responsable équipement : [Christophe Mutin](#))
- ▶ LNI bendings: Locked-out (C.Carli) + ground straps on magnets
- ▶ **La demande de consignation peut se faire via le service first line EPC 163668 ainsi qu'à Michal DUDEK ou un responsable d'équipement.**

Hardware tests : BE-BI

▶ Scrapers :

1. Tests on-going and will last until beginning of November,

▶ Tune measurement :

1. Full functional tests will be done before the end of October.
Duration to be confirmed.

▶ BPMs :

1. Installation of the amplifier + tests will be done as soon as bake-out on LNR20 finishes. Duration : 1 week.

▶ BTV :

1. Re-assembly of the BTV done as soon as bake-out on LNR20 finishes. Duration : 1/2d

Hardware tests : BE-RF

- ▶ RF Cavity :

1. Tests could potentially last 2 months. Initial tests will take place tomorrow to have a better view.

- ▶ Longitudinal pick-ups:

1. Completion of LPUs installation (Amplifier, cabling, ...). After the bake-out of LNR20. Duration : 2 weeks.
2. Followed by LPUs tests (done in the rack and compatible with beam commissioning). Duration : 2 weeks

Hardware tests : TE-ABT (1)

▶ Injection kicker :

1. Connection box installation, done after LNR20 Bake-out.
Duration : 3 days
2. Powering tests. Duration : 5 days.

▶ Septum :

1. Control tests, planned this week. Duration : 1/2d
2. Closing of the septum (With support from survey) after LNR20 Bake-out Duration : 1/2d

▶ ZQNA :

1. Preparation for powering tests (IST), done after LNS and LNI-LNE bake-out. Duration : 1/2d

Hardware tests : TE-ABT (2) / TE-EPC

▶ Ion switch :

1. Vacuum interlock tests (With TE-VSC and TE-ABT). Duration : 1/2d
2. Preparation for powering tests (IST), done after LNS and LNI-LNE bake-out. Duration 1/2d

▶ Fast deflectors :

1. Powering tests : Already started, will last until mid-October

▶ HV power converters:

1. Preparation for powering tests (IST). Can start as soon as it is approved by HSE. Duration : 2 day

Hardware tests : BE-ICS

- ▶ **EIS-b Tests BTV :**
 - ▶ Done once the BTV is assembled. Duration $\frac{1}{2}$ d
- ▶ **Access system :**
 - ▶ Switch to normal access mode. Duration $\frac{1}{2}$ d

Hardware tests : Powering tests

- ▶ **Magnets circuits commissioning**

- 1. Done once all the correctors are installed and the bake-out is completed. Duration : 1wk

- ▶ **HV Circuits commissioning**

- 1. Done once all the IST are done once bake-out is completed. Duration : 1wk

Hardware tests

- ▶ Once all the previous steps are done the DSO tests will be done.
- ▶ Note that an electrical inspection should be done for all equipment installed.