Some Questions and issues arising from the operation and maintenance of NEXT-100

if we run a gas purge on the vessel before separating the heads, we can then open the heads up enough to insert a cover plate over the vessel flanges. then the heads can be removed and bagged if needed. we can then erect the clean room over the vessel, no?

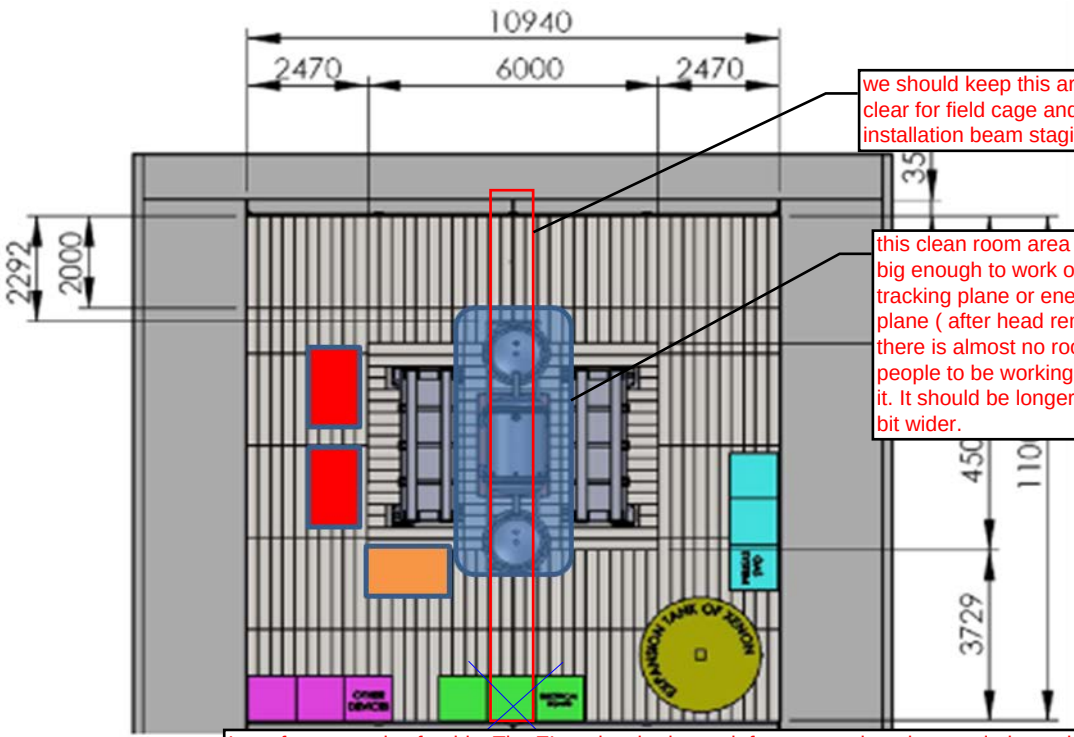
This came up when I started thinking that when we open the vessel we will have to have the clean room around it and therefore the use of the crane would be limited to the outside of the curtains… But let me take it from the beginning.

When we need to open the vessel, we will need to have the mobile clean room around.

How big a surface do we need to cover?

question? do we need some sort of radon control when we open up the vessel? If so, how do we do this? a simple overhead filtered fan type clean room may not work for this

Ideally as much as possible, but given the location of the shielding walls, the best would be to have the curtains on the inside of the walls. Usually the dimensions of these areas can be adjusted to 50cm, therefore I would suggest a room of approx. 5000x2000 mm2 (based on the dimensions given in the drawing) as you can see on the sketch.



I see few scenarios for this. The EL and cathode mesh frames can be taken out independently. if we need to work on the field cage (e.g. check resistors, look for spark damage) we will likely try to do it in-situ. We would make a cantilevered "diving board" for people to lie on while doing this work. The most likely need to have both ends open is to remove the field cage, where the clean room will be in the way

Although it may happen very infrequently, there may be cases that we need to work with both ends open, that is why I would prefer to have it long enough. If that were absolutely out of the question, working at both ends at the same time, then we could discuss making it 1m shorter.

How do we use it?

Despite the fact that it could fit on the platform, we can easily ask Canfranc to have it permanently sitting on the pool floor, between NEXT and ArDM and move it in place with the crane when necessary.

Inside the clean room, I believe that we should be working with the attire appropriate for a clean room but the shoes. That is: gloves, coveralls –not just frocks- and maybe even head covers according to the application. It may appear so, but I don't think I am exaggerating…

Opening the endcap

For the moment, from what we have been discussing based on the movies made by Derek, it seems we will need the crane to hold the SS endcap. However, with the clean room in place, the crane will not be able to get it unless it is standing *outside* the clean room, that is the rails should be long enough to bring it out and lift it so as to reuse the structure for the inner shell where the PMTs or/and the SiPM will be sitting.

In this case we can foresee a sort of a case/bag which impedes the inside of the endcap from being in open air, even if we need it really tight so as to avoid completely specks of dust on the inside. I mention only the inside because it is the most interesting one, however we could do it as a whole.

I am calling for the head to be retracted 1m minimum; its not clear how the seismic frame accomodates this. The clean room should be big enough on the end such that the head would still be inside the clean room at this distance. I think the clean room will need to be staged somehow.

How often will we need to open?

probably many times during initial commissioning, maybe even dozens, if we have problems, such as with voltage holding.

I know this is difficult to think of now, but I wonder because if we have to take out the SS endcap, then we would need to disconnect the services to the vessel (gas pipes, cable FT, pumping ports) and that is something we also want to avoid. Same goes for both endcaps…

Gas system

A detail just to make sure we are talking about the same thing: The placement of Gladys is supposed to go to the yellow rectangular?