

Minutes/Notes

ICARUS Technical Meeting

1 July 2020

Prepared by Bruce Howard

Participants (Zoom usernames as necessary): BH, Claudio M, Christian F, Andrea S, Animesh C, Carrie M, Donatella T, Franco S, Geoff S, Guadalupe M, Howard B, Justin M, Laura P, Milind D, Minerba B, Niccolo M, Bob W, Tyler B, Tracy U, Filippo V, Vittorio P, Wes K, Zack W, *and possibly more*

Claudio reports that we have 2 (correction 3) presentations today, one on HV installation and two updates on the noise (TPC + CRT)

Claudio reminds that Minerba will present at Neutrino 2020 on SBN tomorrow, expects we will be there listening to her

Claudio reports that the report to the PAC was today, brief (12 minutes), similar to slides at the Collaboration Technical Meeting

- > He got a bunch of questions that he forwarded to the relevant people (planning, stability of system, shift, etc.)
- > Those involved like Minerba, Geoff, Bob, should have received a copy of the email

No significant news from the cryogenic perspective

- > Final configuration of parts for the recondenser pump verified - for now continue to operate in the usual way. Expect installation in few weeks

Claudio reports that Linda reviewed aspects of the HV system and wire bias racks

- > Donatella said we passed ORC for the wire bias racks

Claudio reports that Justin is progressing with fiber installation (e.g. to connect to the horizontal wires)

- > Justin reports that the work is progressing, has had to some extra things that weren't expected, but work is still progressing
- > Discussion with Linda about securing the fibers and such
 - > Justin reports that he thinks there is a scheme to use moving forward now
- > Justin reports that last night he got the EE corner chimneys read out (EE 01 Top, Middle Bottom, EE 02, EE 19, EE 20 top, middle, bottom -> 8 crates)
 - > He had a look at the data, looks interesting in some places but says he thinks they are reading out successful

Claudio asks about status of the PMTs

- > Animesh says can control the Bertan and HV remotely and verified this on (this past) Thursday, Friday

- > Some minor issues that Niccolo is working on
- > Preparing Wiki page and instructions for shifters
- > Claudio says that he understand Geoff is working on the servers
- > Geoff clarifies that he powered on the PC for the strain gauge
- > Geoff said he also wants to experiment with the camera, the camera base unit

Claudio reminds that tomorrow is the meeting with Carrie (1:30 pm), not sure yet what the status for next week will be. Depends on the status of the fibers and HV, expects there will be some discussion tomorrow (heads up to Zack, Justin, and Donatella).

- > Carrie will send email reminder later today

Zack presented some slides on the Drift HV installation, see slides on indico agenda.

- > Showed in broad sense the steps involved
- > Pictures of the racks and diagrams
- > Showed diagram inside the cryostat and noted readout:
 - > stepped down 10^{-4} , so 56 kV would read 5.6 V
- > Mentioned the splitter and feedthrough with some pictures
- > pORC was sent in, needs to check with Linda the status
- > Next steps:
 - > Address findings of pORC review
 - > Some tests to ensure safe operation
 - > Finish implementation of control/monitoring the power supply and system into slow controls
- > Questions related to talk:
 - > Claudio says that a key condition will be showing that it can be controlled remotely, since we cannot spend 24/7 at the lab, what is timescale?
 - > Zack says assuming he can get back on-site on Monday of next week, then tentatively say 2 weeks time scale
 - > Claudio asks if there is a way to speed up the activity?
 - > Zack says ideally it could be faster than that, but depends on various factors (including results of pORC which he hasn't heard about)
 - > Claudio says that Linda has some comments, and they should be sent to Zack when ready
 - > Claudio asks if Geoff is available to help?
 - > Geoff said he can help, but they should do some planning this week to get ready. They can meet on Zoom tomorrow to discuss.
 - > Geoff said that 2 weeks to put it into EPICS may not be possible... but may be.

Justin will report on TPC noise:

- > Didn't have time to update plots from last week's TPC working group meeting but is showing those

- > Can see data after resuming after ground short search
- > Not so much to talk about on a global scale, but note that some of the EW mini-crates jumped
- > WE05 maybe some change on the first board, but this is the board being used to generate the TTLink signal so maybe
- > noted not so much change in WE 06,07,09
- > WE18 maybe some improvements in some places and worse in others, strange noise spectrum
 - > Similarly some worsening and improvements in WE19
- > On EW mini-crates (especially noticeable in some), notes some broadening toward lower end of the first noise spike in the power spectrum (~100kHz) after the ground short search
- > Hoping to have updates, and with the new mini-crates being added, at the next TPC working group meeting.
- > Questions/comments:
 - > Claudio asked about the cryo boxes being on or off?
 - > BH noted that it seemed like they were off on iFix yesterday
 - > The note was that perhaps this could affect the noise - good thing to keep in mind. Justin remembers seeing an effect from them when they were on.
 - > Claudio said if they need to be turned on then Trevor would have to come do that.
 - > Justin mentioned that it would be good to maybe have some before and after data if this needs to be turned on
 - > Claudio mentioned that some connections were removed from power supplies during search ("white cables")
 - > Donatella confirmed they did not put these back
 - > Perhaps something else to keep in mind
 - > **Note added later: Donatella wrote that the "chimneys that had the PS shield cable removed": WE03, WE05, EW01-M**

Tyler gave update on CRT noise status - Slides on the indico agenda

- > noted West rolling wall getting moved today
- > takes one "standard", one "noise", and 3 "calibration" runs each day
 - > using the artdaqDriver, not in the standard DAQInterface at moment. Working on it
- > Showed plots of noise measurements
 - > See some lower rates *during* the ground short search but then increase again after
- > Questions/comments:
 - > Claudio mentions that Linda might not be available for some time. Tyler notes that they have things in the meantime

-> Claudio said we need to set aside some time to address (investigate and mitigate) high rate on the North Wall (and potentially the north side of the side wall)

-> Minerba said now that there is access to the building can do things

-> There was some discussion about connecting to ground (related to something from Skippy) and hoping that this helps. Tyler suggested that as the wall is being moved northward this might be possible.

-> Claudio re-iterated that setting aside time to work on addressing this would hopefully help

Next week we will move back to having this meeting at the usual time. Might be a good idea to have an update on Monday morning, say at 10-10:30am.

Reminder of tomorrow's Neutrino 2020 talk by Minerba.

Adjourn 12:49pm