**Water Target Situation**

Resummarize; the bag 28 level continues to drop. Before Dec ~20, the level was 15.9 cm. Now the level is 33 cm. This drop is confirmed with the 2nd pressure sensor and in Jan 3, the binary sensor tripped. So we believe there has been a drop of about 17 cm starting from ~Dec 20. The bag is ~100 cm wide and 2.8 cm thick, so 17*100*2.8 is about 4500 cm or 4.5 liters or about one gallon of water has gone. This is about 1 water drop per 10 seconds.

Currently, Dima has not yet been able to find out if the water is actually leaking into the pan. Apparently the lab gate is locked and the magnet is still closed(?). Dima is checking (~9am, Tuesday) now if access is possible. Scott is now scheduled to arrive Jan 5 evening and the magnet is supposed to be closing Jan 9 (Martin H. message from Dec 16).

Walter will draft a note to the run coordinators about the current situation. If today we decide we need more time to understand the leak, we might warn the run coordinators about a request to delay the magnet closure.

I talked to Warner about current plans. Here are some thoughts

1) check asap if there is water in the pan (Dima, says he will try on Jan 4 when he thinks he can get into the lab). In particular we need to know if the water is coming out of the drain tubing of the bag 28 gasket and no other leaks are occurring along the bottom of the gasket frame. Is there water dripping in the gap between the two drip pans?

2) if there is no water to be found, check if the water is coming out of the 2 siphon tubes. This is unlikely, but worth trying if no leak is found. Disconnect the tubes from outside and check for water in the tubes. If necessary blow air into the tube to clear out any water. If there is a hole in the tubing, then other checks might be needed.

3) if the leak appears to be under control consider topping off bag 28, so we are above the fiducial boundary.

Assuming a physical leak is found, we should make certain we can continue to run this way (bag 28 filled for 1-2 months) without dripping water into the P0D Ecal underneath the two drip pans. Perhaps some additional work can be done to minimize water dripping into the ECAL. Something like a "bed skirt" can be taped to the P0D bottom and the edge of the drip pan to keep the water dripping into the pan? I don't know if Scott plus Dima (or Chang Kee, the next on site expert) can do this before the magnet closes? We need to verify clear top/bottom access to bag 28 for bag replacement in Summer or April(?).
Bag 28 (readout from Alysia); Scott reported a drop in bag 28 on Dec 24. Since then there was a steady water level drop ~17 cm since ~Dec 20. This is about 4500cc or 300cc/day or one water drop per 10 seconds. The two pressure sensors and one binary sensor confirm a level drop.
According to Warner, the gap between North & South Pans is only a 1/16 inch gap. This should be confirmed.
Shutdown

Currently planning for the shutdown. Expected schedule:

- **25/12 (morning): Lose beam.**
- **25/12 – 26/12 (later if beam continues):** Turn off magnet and electronics, evacuate cooling loops. Subdetector experts make systems safe for magnet opening.
- **29/12: Magnet opening** (Tsukamoto-san). Contractors will work extended hours to get this done in one day.
- **5/1 – 9/12:** DAQ and electronics updates and testing.
- **5/1 – 9/12:** ECAL LI initial commissioning on services level.
- **6/1 (morning): TPC outer box craned out.**
- **6/1 – 7/12:** Replacement of TPC FEM.
- **8/1 (morning): TPC outer box craned back in.**
- **9/1:** Magnet closing. Again done in one day.
- **10/1:** Magnet back on, shifts start.
- **12/1:** Ready for beam if it comes.
- **10/1 to Beam start:** Final commissioning of ECAL LI if there is time.