

SALSA On Ice Report: 08-14 November 2017

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Other team members on Ice: Bob Zook, Ryan Venturelli

Drill Team Update by Justin Burnett



November 8:

- Morning was spent in GPS training
- Afternoon was spent continuing to wire the with main reel container
 - One of the four traction device motors failed to engage properly. Root cause was determined to be a broken wire inside of the main reel container I/O panel, likely due to cold temperatures and/or shipping vibration.

November 9:

- Start of day was spent wiring a replacement connector bulkhead for the failed traction device motor (slave #1)
 - This system was successfully verified and appears to be in full working order
- The return water hose and cable winch VFD controllers were failing to enable, and could not be controlled with local pendant controls
 - Determined that PLC controller card was not successfully sending enable voltage signal. After removing and reinstalling the digital output card responsible for this signal, the feature started to function properly. Root cause is understood to be dirty and/or improperly seated contacts (e.g. vibrated loose)
 - Identified wiring schematic updates that hindered proper diagnosis of the problem

November 10:

- Morning was spent in snow machine training, followed by collecting parts from town including generator, fuel, and spill containment.
- Updated master wiring schematic to correct inaccuracies found in the previous day
- Updated network driver on drill control computer #1, RS Linx still fails to load, this problem is unresolved, but non critical. Ethernet network interface card verified functional.

- Unboxed, inspected wiring, and powered on new Mcartney winch. All systems appear fully functional. Cable unspooled and a portion is now led into Crary lab phase 3 for termination.

November 11:

- Discovered a traction device motor which was not being enabled by the PLC system. Determined the root cause to be a loose wiring harness in the reel container PLC enclosure. The system appears to be fully functional.
- Tested the main hose reel level-wind system – the behavior was erratic and showed several unexpected motor drive faults.
 - Found the motor controllers and encoder signals to be switched between main reel and level-wind drive systems. This resulted in several fail-to-stop faults on the level-wind system. Swapped (and relabeled) cables – this appears to have solved this issue.
- Remounted level-wind limit switches in preparation for hose spooling and level-wind test.

November 12:

- Did not get out to the drill site today due to weather. Continued updating control computer software and organizing file locations.
- Fabricated a mounting plate assembly for the tether SCINI clump weight high-voltage transformers, based on a solid model provided.

November 13:

- Weather prevented us from heading to work on the drill equipment this morning. Continued working on Deep SCINI clump weight assembly.
 - Added epoxy potting compound to tether strain relief, will allow to cure for 24 hours before continuing assembly and fabrication
- The afternoon was spent at SPOTSA, evaluating the health of the level-wind system and troubleshooting errors.

November 14:

- Spent all day spooling an additional 400m of hose onto the main hose reel this operation was successful with only minor issues
 - Tension was maintained by the traction device, with the jaw-open position adjusted to support the weight of the upper section, while opening just enough to maintain belt contact on the drill hose. Only the rear (main hose reel side) half of the traction motors were engaged
- During system startup an issue was discovered with the main reel manual (local backup) control, failing to respond to the input speed reference from the speed dial located on the pendant control. Trouble shooting revealed the correct setting location, but this error

persists. Regardless, this strictly a minor inconvenience, and system appears to be otherwise operational

