AIRs blowing hypothosis

From : Greg Flynn <flynng@lafayette.edu> Wed, 10 May, 2017 10:44
Subject : AIRs blowing hypothosis 1 attachment
To : Chris Nadovich <nadovicc@lafayette.edu>

Hi Professor,

So I have identified a likely culprit to the AIRs blowing.
I looked over the crash log from when we blew the AIRs before and I noticed that a cell dropped beneath 2.7V. I am unsure if the voltage was actually that low but the PacMAN has logic to switch to dead if it sees less than 2.7V. I believe that it is likely an AMS is not calibrated correctly. It seems reasonable to speculate that this was the cause of the failure. If we had a multimeter on the cell according to the AMS board we would still read a low voltage so if we cannot use VSCADA we can probe all of the cells. This will not let us know which AMS board is faulty.

I've attached the relevant data from the crash log.

I propose to:
Get pack 3 upstairs.
Test it into the load with VSCADA logging data
Identify the AMS that trips
Checking its calibration or replacing it
Retest into the load and see if it fixes it

Alternatively:
Get pack 3 upstairs.
Get all of the AMS boards off.
Connect them to a PacMAN 1 at a time with a known voltage across the probes (the minimum we see on the cells)
See which one says that the pack is dead.
Recalibrate or replace the AMS
Try a pack into the load.

My concern is that the car works at a low current and I do not want to break it all.
Do you have other suggestions for a course of action?

Greg

crashlog.xlsx.pdf