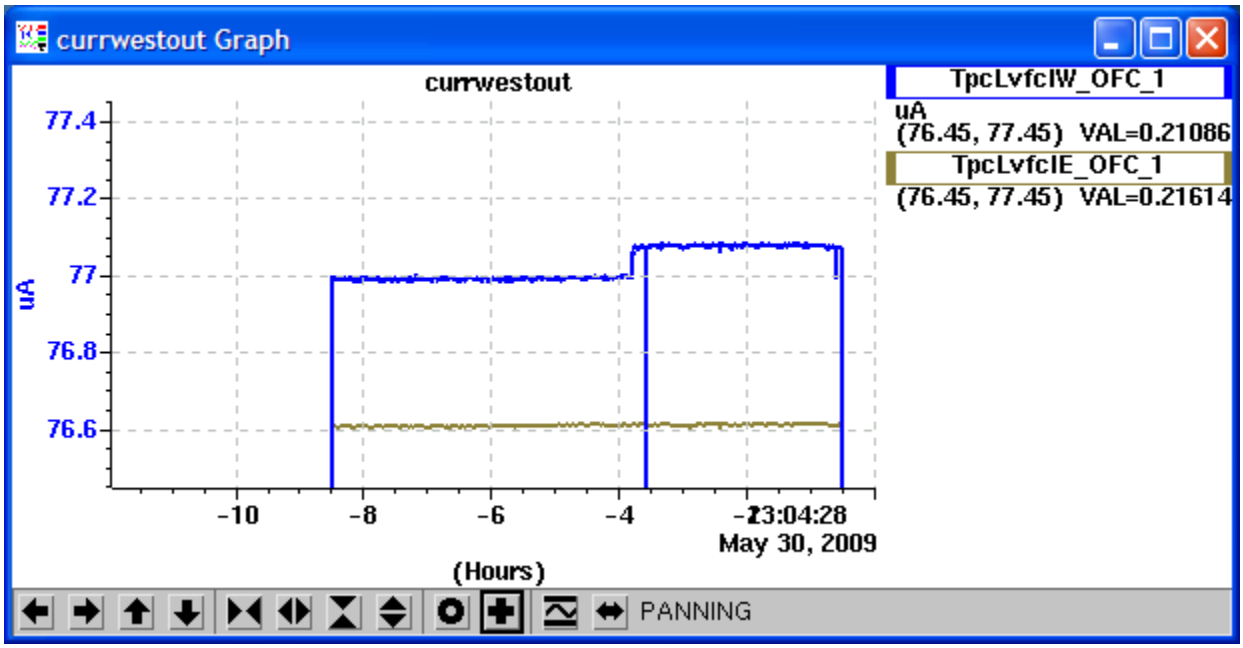
Two shorts on OFC West

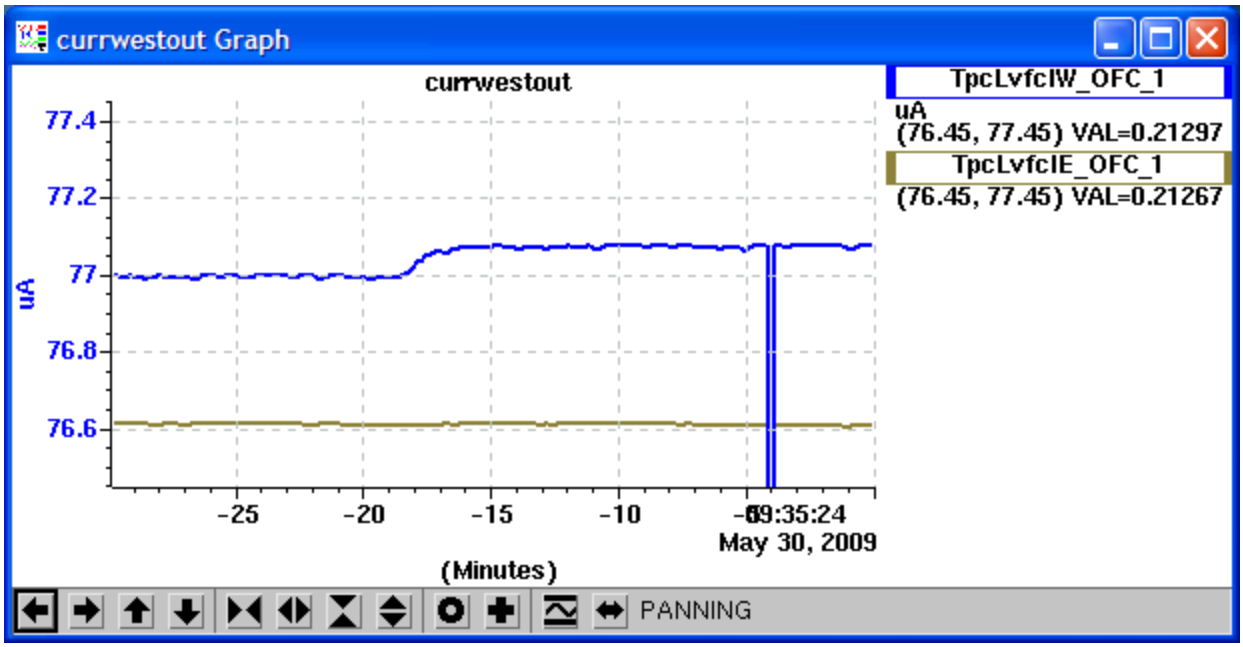
These plots are from Saturday morning, May 30, 2009. They clearly show that we have two shorts on the OFC West. Gene Van Buren and Na Li have explicitly demonstrated this with track data … but here is a demonstration of a different kind.

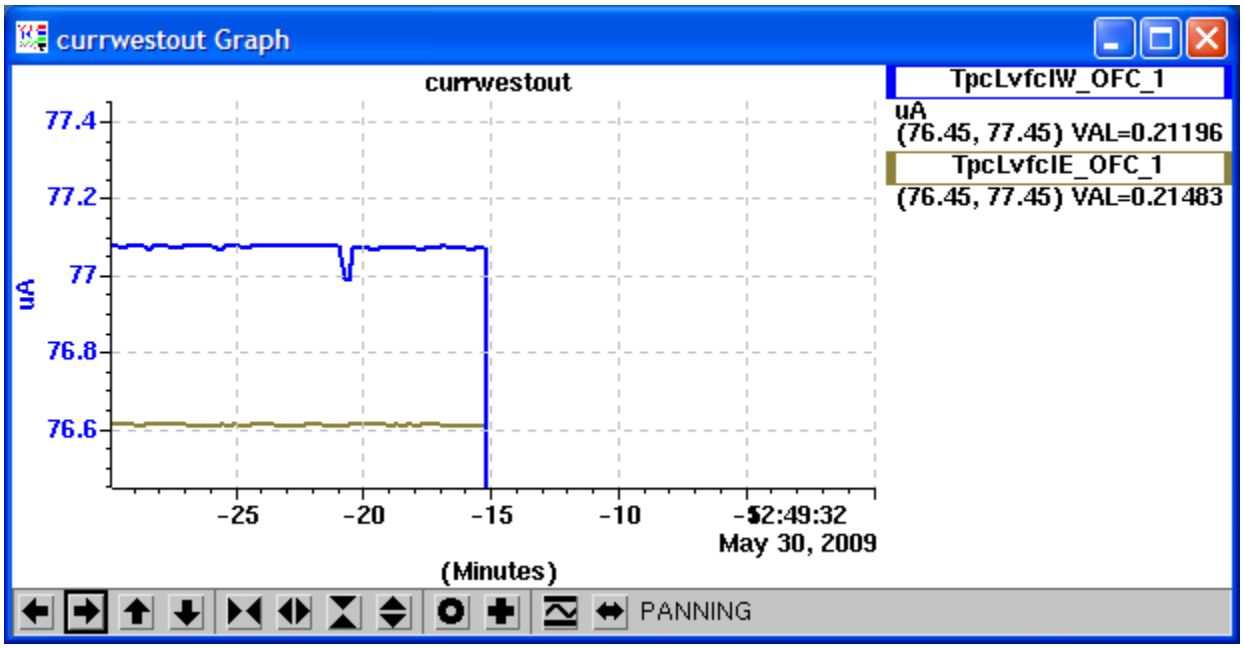
The gray line, below, is the normal current in the IFC west resistor change. The blue line is the current on OFC west. The interesting feature is that the current on OFC west is shifted by ~400 nA. This corresponds to one shorted resistor. But after a few hours of operation, the current jumps up another 100 nA, or so. This is the intermittent short of ¼ resistor that we have been seeing for the past couple of years. It periodically turns itself on and off.



The curious feature about the intermittent short is that it takes about 1 minute to turn on. This is shown in the expanded plot shown below. The third figure shows the intermittent short turning off briefly, and then back on again.

Finally, Alexei reported that the Cathode shut down on Sunday morning. He and Yuri looked into the Slow C code and found that the Cathode was designed to shut down if the current were out of sync by 400 nA. Since neither of the shorts in OFC west is repairable … we are going to have to live with the change in currents and thus will have to raise the limit in the code. The only thing that doesn't make sense is that OFC West was out of sync all day Saturday and apparently didn't trigger the Slow Controls to shut down the cathode. I can't explain why it waited 12 hours before shutting down.


currwestout Graph
currwestout
TpcLvfcIW_OFC_1
uA
(76.45, 77.45) VAL=0.21297
TpcLvfcIE_OFC_1
(76.45, 77.45) VAL=0.21267
77.4
77.2
77
76.8
76.6
uA
-25
-20
-15
-10
-5
09:35:24
May 30, 2009
(Minutes)
PANNING


currwestout Graph
currwestout
TpcLvfcIW_OFC_1
uA
(76.45, 77.45) VAL=0.21196
TpcLvfcIE_OFC_1
(76.45, 77.45) VAL=0.21483
77.4
77.2
77
76.8
76.6
uA
-25
-20
-15
-10
-5
02:49:32
May 30, 2009
(Minutes)
PANNING