From: Byron.Harrison@aps.com [mailto:Byron.Harrison@aps.com]
Sent: Tuesday, September 01, 2015 6:54 PM
To: Duvall, Robert (GE, Measurement & Control)
Cc: Nierman, David A (GE, Measurement & Control); Duvier.Navarro@aps.com; Robert.Field@aps.com; Gregory.Hunter@aps.com; David.Rodriguez2@aps.com
Subject: RE: GE Facility Visit

Robert,
Thank you again for taking the time to show us your facility. We were very impressed with the capability to continue maintaining the older controls systems MKI and MKII.

On the subject that we discussed about the R30 (10K ohm) resistor that was removed on the position driver boards being work on when we visited your facility, I could find no GE directive about the issue other that a letter that I generated in 1989 stating the removal of this driver board closing bias circuit would be recommended by the factory (GE) on a case by case basis. One of the factors for the closing bias circuit elimination was if a problem is experienced with the 22VDC power supplies drifting or problems with the closing bias circuit. The reason this circuit is not needed is the Servo Valve already has a closing bias spring in it which will cause the controlling valve to slowly drift closed on loss of signal. There had been industry operating experience where the turbine control valves closed because of the closing bias circuit when the 22VDC power supplies transferred control from one to the other.

Because of this OE and feedback from GE, in 1993 Palo Verde started implementing the removal of the closing bias circuit by clipping the R30 resistor on all of the controlling valve position driver boards (1F1-F) for the 25gpm and 70gpm servo valves.
When we perform valve stroking during outages the Servo Valve closing bias spring is checked on all of the controlling valves.

All of the NEW GE universal driver boards have eliminated this closing bias circuit.

Therefore, we would like to have you remove the R30 (10K ohm) resistor on the 25 gpm and 70 gpm position driver boards.
See attached schematics.

We still owe you the Palo Verde specific Control Valve slope adjustment data. We should be able to forward that information to you this week.

Thanks,
Byron