PFR-112   Title: ESA HV Script Problem

Assembly : GSE	SubAssembly : Scripts	
Component : ESA Scripts	Units Affected:	Units fixed:
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Failure Occurred During (Check one √)

x Functional test   □ Qualification test □ S/C Integration □ Launch operations □ Other (Flight Assy)

Environment when failure occurred:

x Ambient	□ Vibration	□ Shock	□ Acoustic
□ Thermal	□ Vacuum	□ Thermal-Vacuum	□ EMI/EMC

Problem Description

During the ESA_HV_CPT on FM1 when the High Voltage was turned on to low levels it was noticed that the HV supply was sweeping the ESA Anodes when it should not have been. Further more the sweep levels were set higher than the raw sweep HV supplies. This would have caused the optocouplers to be operated in a non-nominal configuration such that they were being overdriven.

Analyses Performed to Determine Cause

Analysis of the GSE scripts showed that the ESA Pulser test is run prior to the ESA_HV_CPT. This sends sweep commands to the ESA to vary the pulser rate. At the end of the test the ESA Actels are not re-initialized to the zero sweep state and so when the raw HV supply reached the threshold of 1kV and the actel sweep outputs were enabled the optocouplers would have been overdriven. The manufacturer of the optocouplers was consulted and it was determined that for the short period when the optocouplers were overdriven that would not have caused any detriment to the parts.

Corrective Action/ Resolution

The scripts were changed to re-initialize the ESA Actels with the 6A00 command at the end of the pulser script and to again re-initialize the ESAs at the start of the ESA_HV_CPT. All other ESA scripts were checked and no similar problems were found. This PFR is closed.

Acceptance:
MAM: Ron Jackson_____; MSE: Ellen Taylor_____

PM: Peter Harvey_____; Cognizant Engineer_____

Date of Closure_____