

Sol 111 Emission turn on failure - Time Line

EGA Time	Source	Description
95	EGA	Engineering packet, IP current = -3.391 uA, IP voltage = 21.364 V
96.91	TEGA	Turn Ion Pump ON
97	EGA	Command Done, reset IP current and voltage engineering averages
97.71	EGA	Check Ion Pump Pressure
97.9	EGA	IP current < 30uA, voltage > 2500V, Safe to turn on emission
99.3	TEGA	Turn Emission ON
100	EGA	ERROR, IP pressure too high, cannot turn on emission
100	EGA	Engineering packet, IP current=31.736 uA, IP voltage=2989.074 V

Conclusions

The check to determine if the IP pressure is low enough to turn on the emission actually caught the ion pump as it was firing, but still low enough to be considered acceptable. A second later when we tried to turn on the emission the pump was near the peak and the emission was not turned on. The near instant firing of the ion pump was due to the gas pressure from the previous activity where we analyzed the carrier gas. We believe this particular response of the fault protection is an isolated incident.

Recommendations

1. After the call to tega_ega_emission_warmup is done turn the emission on again. If it is already on, we get a harmless error message.
2. Consider increasing the time between the ion-pump being turned on the first pressure check occurring. It is currently set at 0.8 seconds.

