Purpose and Description
Purpose: Verify that the SA-3 Drive Mechanism is performing nominally and that the sensed positions are within +/- 3.5 degrees of the commanded position when operating within the range of 0 to 130 degrees and +/- 5.0 degrees if operating outside this range. The maximum command profile error during the solar array slews will also be verified to be less than the safemode test threshold of 10 degrees for 3 seconds. (Req. J.10.4.14.1.1)

Description: SA slews will be commanded in real time during SM-3B and via the SMSs during the SMOV period. Real-time data and routine trending data will be analyzed to determine if the final SA sensed position is within +/- 3.5 degrees of the commanded position when operating within the range of 0 to 130 degrees and +/- 5.0 degrees if operating outside this range. During a SA slew, real-time data and routine trending data will be analyzed to determine that the maximum command profile error is less than the safemode test threshold of 10 degrees for 3 seconds. These activities will take place for all SA slews throughout SM-3B/SMOV period.
Purpose: The SA-3 power generation performance will be assessed to determine that SA-3 is providing sufficient power to support HST’s load range. (Req. J.10.4.14.1.2)

Description: Power performance will be assessed and compared to beginning of life predictions that account for expected degradation. To the extent possible, power measurements will be calculated when HST is at orbit noon, when the sun vector is within +/- 10 degrees of the –V1 axis, when the solar array to sun incidence angle is less than 5 degrees, and when all the available CCC K-relays and SPA Trim Relays are closed. Adherence to this criteria insures that the SA output measurement is not influenced by sun incidence angle or reflections from the HST body. Analysis will be performed on real-time and routine trend data. No commanding to specific attitudes for the purpose of this analysis is planned.
Purpose: Verify the PCU-R will support HST’s charging. (Req. J.10.4.14.2.1).

Description: PCU-R performance will be validated by verifying Battery current and voltages are within expected values. Bus voltages, Bus Impedance, load currents and structure currents will also be monitored to ensure correct power performance. Verify SA output, and SPA Trim Relay and CCCK Relay operation via status telemetry and current flow. Analysis will be performed on real-time and routine trend data.