

ATTACHMENT
340944X - 61 - 225

SAA09PP03-001
REV. E
B/L 8/30
MPS LH2, LOA SYSTEM

Critical Item: Heater Control Panel
Ref. Des. No.: 6414
Criticality Category: 2

SAA No: 09PP03-001

System/Area: LH2 MPS/LOA-VAA

NASA
Part No: 79K09842

PMN/ S72-0812/
Name: MLP Electrical, LH2 System

Mfg/ Weigand/
Part No: 381-865710-002

Drawing/ 79K06414/79K40025
Sheet No: 83

Function: Supplies power to heater A105958

Critical Failure Mode: Fail deenergized, loss of power. FM. No. 09PP03-001.025

Failure Effect: A loss of capability to heat GHe for the anti-icing purges. Ice formation on the ET prepressurization lines, with subsequent loosening and falling, could damage the Orbiter Thermal Protection System.

Acceptance Rationale

Design:

- o This component is only Criticality Category 2 when the ambient temperature is 36°F or below because the unheated backup helium supply is not effective at these temperatures.
- o Failure is detectable by the 6413MT3 and 6413MT4 GHe output temperature sensors.

Test/Inspection:

- o File VI verifies the following:
 - Functional operation of the primary purge prior to each launch and at component replacement. The purge is verified via pressure switch indication and must satisfy a temperature specification after heater activation.
 - Functional operation of the redundant purge prior to each launch and at component replacement. The purge must satisfy a purge pressure specification.

ATTACHMENT
840204K - LH2 - 22

SAAO9PP03-001
REV. E
B/L 8/30
MPS LH2, LOA SYSTEM

Heater Control Panel, 6414 (Continued)

- o Drawing 79K12402 requires an annual operational/functional check and a test following component replacement for the A105958 heater and its associated electrical power/control system.

Failure History:

- o PRACA - There were 6 Problem Reports for this type component found in the PRACA Data Base.

No failures found in the critical failure mode.

- o GIDEP - The GIDEP Failure Data Interchange System has been researched, and no data on this component was found.