

ATTACHMENT
840204K 859 - F 22

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

Critical Item: Temperature Control Panel
Ref. Des. No.: 6601A2
Criticality Category: 2

SAA No: 09PP03-001

System/Area: LH2 MPS/LOA-7AA

NASA
Part No: 79K08439

PMN/ 572-0812/
Name: MLP Electrical, LH2 System

Mfg/
Part No: Unknown

Drawing/ 79K06414/79K40025
Sheet No: 83

Function: Controls input power to the SCR controller on the 6414 heater control panel.

Critical Failure Mode: Fails to transmit control signal. FM. No. 09PP03-001.024

Failure Effect: Loss of temperature control for the A105958 heater which will result in loss of capability to heat GHe for the prepressurization lines. 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.

ATTACHMENT
S 40204K 960 - F 22
SAA09PP03-001
REV. E
B/L 8/30
MPS LH2, LOA SYSTEM

Temperature Control Panel, 6601A2 (Continued)

- Functional operation of the redundant purge prior to each launch and at component replacement. The purge must satisfy a purge pressure specification.
- 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 2 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.