

ASSIGNMENT
84034K 965 - F 2 -
SAA09PP03-001
REV. E
B/L 8/30
MPS LH2, LOA SYSTEM

Critical Item: Fuse
Find Number: F-19
Criticality Category: 2

SAA No: 09PP03-001

System/Area: LH2 MPS/LOA

NASA
Part No: 75M04662-263AG1

PMN/ S72-0685-5/MLP Electrical,
Name: LH2 System

Mfg/ Standard part made by
Part No: several manufacturers.

Drawing/ 79K06414/79K40025
Sheet No: 32

Function: Provides overload protection for the control power for HIM operations of the ET LH2 tank prepressurization line heater (A105958) and for the 28V dc control power to the prepressurization He anti-icing shutoff valve (A105961).

Critical Failure Mode: Fail open. FM. No. 09PP03-001.027

Failure Effect: Loss of heated helium to the ET LH2 and LO2 prepressurization lines. Ice formation on ET prepressurization lines, with subsequent loosening and falling, could damage the Orbiter Thermal Protection System.

- 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.

Acceptance Rationale

Design:

- o This fuse is rated at 5 amps and the load on F19 is approximately 4 amps.
- o Failure is detectable by the 6413MT3 and 6413MT4 GHe output temperature sensors.

Test/Inspection:

- o File VI verifies the following:

Fuse, F-19 (Continued)

- 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.
- o Drawing 79K12402 requires a functional check of the A105958 heater (S72-0685-5 panel) which includes its associated electrical power/control system annually and at component replacement.

Failure History:

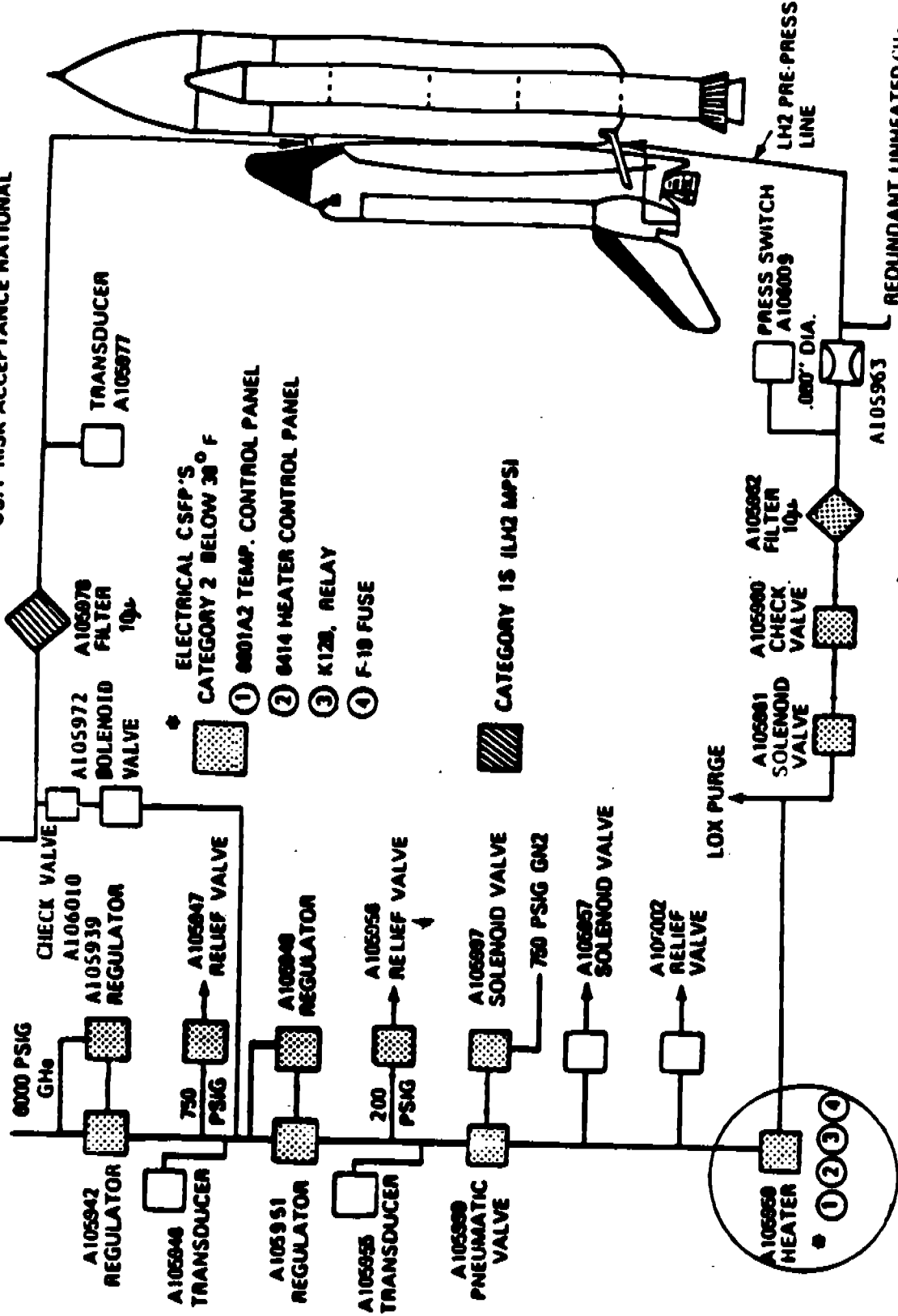
- o PRACA - The PRACA data base was queried, and there were no Problem Reports found for this component.
- o GIDEP - The GIDEP Failure Data Interchange System has been researched, and no data on this component was found.

S40304K = 67 = 22
 SAA088P03-001
 REV. F

From S72-0685-4
 Panel.

LH2 SYSTEM PAD A/B AND VAA
 CSFP RISK ACCEPTANCE RATIONAL

750 PSIG GHe



- ELECTRICAL CSFP'S
 CATEGORY 2 BELOW 30° F
- ① 8001A2 TEMP. CONTROL PANEL
 - ② 8414 HEATER CONTROL PANEL
 - ③ K128, RELAY
 - ④ F-18 FUSE

CATEGORY 1S (LH2 MPSI)

ORBITER HELIUM ANTI-ICE PANEL (S72-0685-06)