

E01-SAA29PP129-001 ~~SAA29PP129-001~~
 Sheet 3 of 8 B/L: 72.06
 72.63
 SYS: Fuel Cell
 Deservicing

MAY 19 1992

Critical Item: Relief Valve (61 PSI) (1 Item Total)

Find Number: A113046

Criticality Category: 1S

SAA No: 29PP129-001

System/Area: Fuel Cell Detank &
 Safing SLS, SLF and CLS

NASA
Part No: 79K80296-4

PMW/ 570-1225-04
Name: GN2/GHe Supply/Purge Pnl.

Mfg/ Fluid Mechanics Valve Co.
Part No: 1/2 X1, 151102 2110

Drawing/ 79K15491 - Pg 1-2
Sheet No: 79K15493 - Pg 1-2

Function: Relieve overpressurization in the GHe scupper purge system.

Critical Failure Mode/Failure Mode No: Fail Open/29PP129-001.002

Failure Causes: Broken Spring

Failure Effect: Loss of scupper purge. Loss of purge if coupled with a system leak could result in fire or explosion with loss of life and/or vehicle. Loss detectable on page A113045.

Time to Effect: Immediate

Acceptance Rationale

<u>Design:</u>	<u>Rated:</u>	<u>Actual:</u>
Operating Pressure	- 60-71 PSI	50±5 PSI
Proof Pressure	- 1-1/2 times operating pressure	-
Burst Pressure	- 4 times operating pressure	-
Operating Temp	- 20°F to +250°F	Ambient
Body Material	- ASTM A351 SST	-
Spring Material	- 17-7PH-SST	-
Internal Metal Parts	- 300 Series SST	-
Seat Material	- Teflon	-
Seals Material	- Teflon	-

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A113046 (Continued)

All material in this Relief Valve is compatible for use with dry air, helium, hydrogen and nitrogen. This Relief Valve is designed so it will not crack at less than 90% of the specified set pressure and shall reseal at not less than 90% of specified set pressure. It will hold test pressures for at least 1 minute with no leakage.

Test: Per Dwg 79K80296, the manufacturer performs the following tests:

- o Proof pressure test
- o Crack and reseal operational test
- o Leakage pressure test

Inspection:

- o OMRS 79K16224 requires this Relief Valve to be calibrated annually and at component replacement by a crack and reseal and leakage pressure check.
- o File VI requires the Scupper Purge Flow to be verified audibly, prior to starting N2 drain operations.

Failure History:

- o The PRACA database was queried and no failures in the critical failure mode were found.
- o The GIDEP failure data interchange system has been researched and no failures of this component were found.

Operational Use:

- o Corrective Action:
 There is no action which can be taken to mitigate the failure effect.
- o Timeframe:
 Since no corrective action is available, timeframe does not apply.