

E01-SAA29PP129-001
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~~SAA29PP129-001~~
B/L: 72.06
72.63
SYS: Fuel Cell
Deservicing

MAY 19 1992

Critical Item: Relief Valve (303 PSI) (1 Item Total)

Find Number: A113031

Criticality Category: 1S

SAA No: 29PP129-001

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

NASA
Part No: 79K80159-7

PMN/ S70-1225-04
Name: GN2/GHe Supply/Purge Pnl

Mfg/ Anderson, Greenwood & Co.
Part No: 81JS48-3

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

Function: Relieve overpressurization in the vehicle tank pressurization and vent stack purge system.

Critical Failure Mode/Failure Mode No: Fail Open/29PP129.001.005

Failure Causes: Broken Spring

Failure Effect: Possible loss of the LH2 vent stack purge. Loss of purge when flowing H2 could result in an explosive mixture in the vent line, causing a fire or explosion with loss of life and/or vehicle. Loss detectable on gage A113030.

Time to Effect: Immediate

Acceptance Rationale

<u>Design:</u>	<u>Rated:</u>	<u>Actual:</u>
Operating Pressure	236-350 PSI	275 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	316 SST	
Spring Material	316 SST or 17-7PH SST	
Internal Metal Parts	300 Series	
Seat Material	Teflon	
Seal Material	Teflon	

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A113031 (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 79K80159, 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 vent stack purge flow to be verified audibly, prior to starting H2 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.

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