

SEP 11 1995

B/L: 072.09

SYS: SSME GSE

Critical Item: Relief Valve (1 Item Total)**Find Number:** A524641**Criticality Category:** 1S**SAA No:** 29SL01-026**System/Area:** SSME Purge GN2 and GHe System/SLS-1**NASA****PMN/**

S70-1247-01

Part No: 79K80450-3**Name:**SSME DFRF GN2 DRYING
PANEL**Mfg/** Anderson, Greenwood, & Co.**Drawing/**

80K57234

Part No: 83JS48-4 with 3-0043-2 spring**Sheet No:**

9

Function: Provide overpressure protection for purged electrical component enclosures in the panel (heater and heater controller).**Critical Failure Mode/Failure Mode No:** Fail open/29SL01-026.002**Failure Cause:** Contamination or structural failure.**Failure Effect:** Continuous vent. Loss of hazard purge of panel electrical component enclosures. Possible fire and/or explosion if hazardous gases are present in the vicinity of the Orbiter during postlanding servicing. Potential loss of life and/or vehicle. This failure is detectable by low pressure reading on gage A524640 and noise created by the continuous venting. Time to effect: 30 Seconds.

ACCEPTANCE RATIONALE

Design:

- This component was procured in accordance with NASA Dwg. 79K80450-3.
- This component is operated within the design specifications.
- Component specifications:

	Rated	Actual
• Pressure (psig)	47-69	55 (set)
Flow (scfm)	55.5	34.88
Temperature (°F)	-20 to +250°F	Ambient at SLS-1

- Type: Direct acting; spring-loaded.

SEP 11 1995

- **Material:**

- Body - 316 Series Stainless Steel
 - Spring - 316 or 17-7PH Stainless Steel
 - Seat - BUNA - N
 - Seals - Teflon

- **Burst pressure:** Four times maximum rated set pressure minimum.

Test:

- **Manufacturer's Certification Test per 79K80450-3**
 - Proof
 - Operational
 - Leakage

Inspection:

- **OMRSD File VI requires:** verification that the hazard purge is applied to heater A524615 and Controller Panel 4112 by verifying audible purge is present at fitting A524653 and silencer A524645 prior to application of GN2 Heater Electrical Power.

Failure History:

- **Current data on test failures, unexplained anomalies, and other failures experienced during ground processing activities can be found in the PRACA database. The PRACA database was researched and no failure data was found on this component in the critical failure mode.**
- **The GIDEP failure data interchange system was researched and no failure data on this component was found.**

Operational Use:

- **Correcting Action:** OMI V1038 Appendix Z (Emergency Instructions) turns S70-1247-01 GN2 heater AC power off in event of an emergency.
- **Timeframe:** Immediately, on detecting failure of the hazard purge of the electrical enclosures.