Critical Item: Check Valve, (2 Items 1/HB)

Find Number: A79810

Criticality Category: 1S

SAA No:	09PPF125-001	**System/Area:**	FCSS GH2/OPF
NASA Part No:	79K80131-3	**PMN/ Name:**	S70-0815-01 Piping-Valve Panel to Vent Stack
Mfg/ Part No:	Circle Seal KH220T-8BB	**Drawing/ Sheet No:**	79K06045 1/3

Function: Prevent reverse flow of LH2/GH2 in the GHe purge line from the LH2 vent stack.

Critical Failure Mode/Failure Mode No: Fails closed/09PPF125-001.001

Failure Cause: Jammed due to contamination/mechanical failure.

Failure Effect: Loss of purge to vent stack prior to and during venting hydrogen could create an explosive mixture in the vent stack, resulting in fire or explosion with loss of life and/or vehicle. Failure is detectable by loss of audible GHe purge flow at check valve A79810.

Time To Effect: Immediate

ACCEPTANCE RATIONALE

Design:

- This check valve is operated within all design specifications.
- Component specifications

	Rated:	Actual
Operating pressure:	6,000 psig	750 psig Max
Proof pressure:	1-1/2 times operating press.	
Burst pressure:	4 times operating press.	

- Materials:

Body and trim:	300 series SST
Spring:	302 SST
Seals:	Teflon

Attachment
S050234CA
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Test: DEC 7 1993

- The manufacturer's certification test requirements include the following tests:
  - Proof
  - Leak
  - Functional

Inspection:

- OMRSD 79K11722 requires leak check and forward cracking pressure checks at component replacement.
- File VI requires the H2 vent stack purge pressure switch A509783 (measurement GFHX8215E) to activate when valve A510299 is open, before venting hydrogen to the H2 vent stack.
- File VI requires the H2 vent stack GHe purge flow to be verified audibly, before venting hydrogen to the H2 vent stack.

Failure History:

- 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 was found on this component in the critical failure mode.

Operational Use:

- Correcting Action:

  Do not start venting hydrogen to the H2 vent stack if the H2 vent stack GHe purge is not flowing.

- Timeframe:

  Each time, prior to starting hydrogen venting to the H2 vent stack, verify audible flow of the LH2 vent stack GHe purge.

Attachment
S050234 LA
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