

AUG 11 1988

Critical Item: Circuit Breaker

Find Number: CB1, CB13, CB4

Criticality Category: 15

SAA No: 09GS05-003

System/Area: ECS/SLF/SLS

NASA

PMI/ 570-0534/

Part No: N/A

Name: Portable Purge Unit

Mfg/ General Electric/

Drawing/

Part No: TJK636500L

Sheet No: 79K06061/1

Function: Protects compressor and main line circuits from electrical overload.

Critical Failure Mode: Premature trip. FM No. 09GS05-003.016  
FM No. 09GS05-003.021  
FM No. 09GS05-003.024

Failure Cause: Structural failure of internal piece part.

Failure Effect: Tripped breaker causes compressor shutdown. Blower interlock stops blower, causing loss of purge to Orbiter compartments. Loss of ability to monitor purge air for leaks. Possible loss of life or vehicle during a hazardous condition such as leakage of hazardous fluids or gases.

#### Acceptance Rationale

##### Design:

- o Meets or exceeds the design requirements of KSC-SPEC-E-0026A.
  - molded-case type
  - manually operated
  - trip free
  - inverse time actuated
  - thermal overload
  - rated load - 500 A
  - estimated operating load - 350 A

880720swf1-256

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Circuit Breaker CB1, CB13, CB4 (Continued)

Test:

- o The OMRSD, File VI will require overcurrent trip test after a fault.
- o The purge unit is powered up and verified operational approximately three hours prior to Orbiter landing per OMI S0028 and S0025.

Inspection:

- o The OMRSD, File VI will require inspection for indication of arcing or overheating annually.

Failure History:

- o PRACA failure history indicates that there was one Problem Report in the critical failure mode:
  - CB1 Main Circuit Breaker had loose internal parts, causing overheating and premature trip.
- o No GIOEP failure history identified.

Operational Use:

- o There is nothing that can be done immediately to mitigate the effect of the failure.
- o The purge unit is monitored for any indication of malfunction. If any anomalies are observed, appropriate steps are taken to repair or replace the item.