

OCT 21 1994

B/L: 554.50, 554.75,  
353.06  
SYS: TACAN

Critical Item: UPS (2 Items Total, one per site)  
Find Number: 12  
Criticality Category: 1

SAA No:	29CL01-030	System/Area:	TACAN/TALS
NASA		PMN/	K61-2951
Part No:	None	Name:	UPS
Mfg/	Exide Electronics/	Drawing/	Exide UPS Model-12 Service
Part No:	Model 12	Sheet No:	Manual/ N/A

Function: Provide uninterruptible power to the TACAN's three power supplies.

**Critical Failure Mode/Failure Mode No:**

- 1) No output/29CL01-030.016
- 2) High/low voltage output/29CL01-030.017
- 3) High/low frequency/29CL01-030.018

**Failure Cause:**

- 1) Output CB fail open
- 2) Discrete component failure
- 3) Discrete component failure

Failure Effect: Loss of power to power supply unit 11, 13 and 14, resulting in loss of control transfer, system monitoring, antenna control capabilities and loss of azimuth and ID to the Orbiter. Each failure could cause loss of life and/or vehicle. Failure is detected by audible alarm. Time to effect is immediate from 250 nautical miles to 20 nautical miles.

**ACCEPTANCE RATIONALE**

**Design:**

- All controls are housed in an environmentally controlled enclosure to prevent premature component failure due to heat and corrosion.
- The Model 12 System is rated at 12 KVA maximum and during normal operation is loaded at approximately 3KVA.
- The Battery System will provide power to the TACAN system load for approximately 25 minutes. The specification requirement is 15 minutes.

*Attachment  
5050239DK*

OCT 21 1994

SAA29CL01-030

- Battery fuses are provided for battery short-circuit protection.
- The system will withstand up to 25 kilovolts of electrostatic discharge, without damage and with no disturbance or adverse effect to the critical load.
- The TACAN AN/TRN-26 is a portable Inertial air navigation system designed for use at remote landing strips and forward operating areas by the US Air Force.

**Test:**

- TACAN activation is required T-3 hours before the start of Ground Launch Sequence. This activation will provide assurance that the system is functioning as required.
- OMRS File VI requires a system validation test prior to each use of TACAN for Orbiter landing.

**Inspection:**

- Prior to TACAN activation a pre-operation checkout (inspection) is performed per OMI Z3109-A.

**Failure History:**

- Current data on test failures, unexplained anomalies and other failures experienced during ground processing activity can be found in 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:**  
The UPS can be manually bypassed.
- **Timeframe:**  
Two minutes.

*Attachment  
5050234DX*