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PRINT DATE: 08/09/89

SHUTTLE CRITICAL ITEMS LIST - ORBITER NUMBER: GO-AA-201000-01-000-X

SUBSYSTEM NAME:

REVISION : 1 89/08/09

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	PART NAME VENDOR NAME	PART NUMBER VENDOR NUMBER
■ SRU :	VOLTAGE REGULATOR SUBASSEMBLY	G073-700184-001

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- EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:  
VOLTAGE REGULATOR SUBASSEMBLY COMPRISING NATIONAL SEMICONDUCTOR P/N LM117H INTEGRATED CIRCUIT AND ASSORTED ELECTRONIC PARTS.
- QUANTITY OF LIKE ITEMS: 2  
TWO; ONE FOR EACH TANK CIRCUIT.
- FUNCTION:  
VOLTAGE REGULATORS PROVIDE REGULATED 10.00 VDC TO GALILEO RPM TANK PRESSURE TRANSDUCERS. VOLTAGE SOURCE IS STATUS MONITOR BATTERY PACK.

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PRINT DATE: 08/28/89

SHUTTLE CRITICAL ITEMS LIST - ORBITER NUMBER: GO-AA-201000-01-000-02

SUBSYSTEM: GALILEO RPM TANK MONITOR

REVISION# 1 89/08/25

ITEM NAME: VOLTAGE REGULATOR SUBASSEMBLY

CRITICALITY OF THIS  
FAILURE MODE: 1S

- **FAILURE MODE:**  
VOLTAGE REGULATR FAILS TO REGULATE, WRONG VOLTAGE OR FULL BATTERY PACK  
VOLTAGE APPLIED TO A PRESSURE TRANSDUCER.

**MISSION PHASE:**  
LS LANDING SAFING

- **VEHICLE/PAYLOAD/KIT EFFECTIVITY:** 104 ATLANTIS STS-34

- **CAUSE:**  
PIECE PART FAILURE, VIBRATION, MECHANICAL SHOCK, THERMAL STRESS

- **CRITICALITY 1/1 DURING INTACT ABORT ONLY?** N

- **REDUNDANCY SCREEN** A) N/A  
■ B) N/A  
■ C) N/A

**PASS/FAIL RATIONALE:**

- A)  
■ B)  
■ C)

- FAILURE EFFECTS -

- **(A) SUBSYSTEM:**  
FAILURE TO PROVIDE CORRECT EXCITATION TO A PRESSURE TRANSDUCER,  
POSSIBLE FAILURE TO DETECT RUNAWAY TANK OVERPRESSURE.
- **(B) INTERFACING SUBSYSTEM(S):**  
POSSIBLE TANK RUPTURE, FIRE/EXPLOSION.
- **(C) MISSION:**  
POSSIBLE LOSS OF THE GALILEO/IUS PAYLOAD

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- (D) CREW, VEHICLE, AND ELEMENT(S):  
POSSIBLE LOSS OF THE ORBITER, POSSIBLE LOSS OF LIFE.
- (E) FUNCTIONAL CRITICALITY EFFECTS:  
FAILURE TO DETECT POSSIBLE RUNAWAY TANK OVERPRESSURE, POSSIBLE FIRE/  
EXPLOSION, POSSIBLE LOSS OF ORBITER, POSSIBLE LOSS OF LIFE.

-DISPOSITION RATIONALE-

(A) DESIGN

THE VOLTAGE REGULATOR ASSEMBLY IS FABRICATED TO THE G073-700184  
DRAWING. SOLDERED PER MA0107-318 ASSEMBLED PER MA0113-312.

(B) TEST

A CONTINUITY TEST IS PERFORMED ON UNIT PER DRAWING. *16*

(C) INSPECTION

ACCEPTANCE TEST PROCEDURE ARE APPROVED BY QUALITY ASSURANCE AND  
PROVIDES ISOLATION, CONTINUITY, ADJUSTMENT AND FUNCTIONAL TEST OF  
THE ASSEMBLY.

(D) FAILURE HISTORY

NO GENERIC FAILURES

(E) OPERATIONAL USE

CONTINGENCY ONLY IN THE EVENT OF MISSION ABORT WITH THE GALILEO  
ABOARD. CONVERTS BATTERY VOLTAGE TO A REGULATED 10 ±0.1 VDC FOR  
TRANSDUCER EXCITATION. UNIT OPERATES AT 70% OF RATED POWER AND IS  
TO BE USED INTERMITTANTLY. A SPARE UNIT WILL BE AVAILABLE AT THE ABORT  
SITE.

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RELIABILITY ENGINEERING:	W. R. MARLOWE	:	<i>W. R. Marlowe</i>
DESIGN ENGINEERING	: L. COLEMAN	:	<i>L. Coleman</i>
QUALITY ENGINEERING	: C. ROLLINS	:	<i>C. Rollins</i>
NASA RELIABILITY	:	:	<i>[Signature]</i>
NASA SUBSYSTEM MANAGER	:	:	<i>[Signature]</i>
NASA QUALITY ASSURANCE	:	:	<i>[Signature]</i>