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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-201000-01-000-01

SUBSYSTEM: GALLILEO RPM TANK MONITOR REVISION# 1 89/08/25

ITEM NAME: VOLTAGE REGULATOR SUBASSEMBLY CRITICALITY OF THIS FAILURE MODE: 1S

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■ FAILURE MODE:  
LOSS OF REGULATED VOLTAGE OUTPUT, NO OUTPUT, ZERO OUTPUT

MISSION PHASE:  
LS LANDING SAFING

■ VEHICLE/PAYLOAD/KIT EFFECTIVITY: 104 ATLANTIS

■ CAUSE:  
PIECE PART FAILURE, VIBRATION, MECHANICAL SHOCK, THERMAL STRESS

■ CRITICALITY 1/1 DURING INTACT ABORT ONLY? N

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

PASS/FAIL RATIONALE:

■ A)  
■ B)  
■ C)

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- FAILURE EFFECTS -

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- (A) SUBSYSTEM:  
LOSS OF EXCITATION TO A TANK PRESSURE TRANSDUCER, FAILURE TO DETECT POSSIBLE RUNAWAY TANK OVERPRESSURE.
- (B) INTERFACING SUBSYSTEM(S):  
POSSIBLE TANK RUPTURE, FIRE/EXPLOSION.
- (C) MISSION:  
POSSIBLE LOSS OF THE GALILEO/IUS PAYLOAD
- (D) CREW, VEHICLE, AND ELEMENT(S):  
POSSIBLE LOSS OF THE ORBITER, POSSIBLE LOSS OF LIFE

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

- (E) FUNCTIONAL CRITICALITY EFFECTS:  
LOSS OF EXCITATION TO A TANK PRESSURE TRANSDUCER, FAILURE TO DETECT AND DISPLAY RUNAWAY TANK OVERPRESSURE, POSSIBLE FIRE/EXPLOSION, POSSIBLE LOSS OF THE ORBITER, POSSIBLE LOSS OF LIFE

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-DISPOSITION RATIONALE-

(A) DESIGN

THE VOLTAGE REGULATOR ASSEMBLY IS FABRICATED TO THE GO73-700184 DRAWING. SOLDERED PER MA0107-318 ASSEMBLED PER MA0113-312.

(B) TEST

A CONTINUITY TEST IS PERFORMED ON UNIT PER DRAWING. *100%*

(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 BOARD. CONVERTS BATTERY VOLTAGE TO A REGULATED 10 ±0.1 VDC FOR TRANSDUCER EXCITATION. UNIT OPERATES AT 70% OF RATED POWER AND IS USED INTERMITTANTLY. A SPARE UNIT WILL BE AVAILABLE AT THE ABORT

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