DATE: October 21, 1988

FMEA #: 465-S70-0606-01-FH5 thru FH8

END ITEM EFFECTIVITY:		
X	X	X
OV102	OV103	OV104

MODEL NO./NAME: S70-0606

ORBITER SUBSYSTEM: Auxiliary Power Unit, Lubricating Oil

PART NUMBER:	PART NAME:	REFERENCE DESIGNATION:	QTY.:
S1000012-2880 Titeflex Corporation	Flexhose	FH5 to FH8	4

CRITICALITY NUMBER: 2

FUNCTION: Contain oil between cart and APU.

CRITICAL FAILURE MODE: Rupture

CAUSE: Mechanical damage.

FAILURE EFFECT ON:

(A) END ITEM: None.

(B) INTERFACING SUBSYSTEM(S): None.

(C) ORBITER: Oil spill in aft fuselage may reach tiles on underside of orbiter.

(D) PERSONNEL: None.

HAZARDS: Oil spill would require extensive cleanup of orbiter aft fuselage and possible replacement of tiles.

CORRECTIVE ACTION: Replace flexhose.

DATE: October 21, 1988

ACCEPTANCE RATIONALE

DESIGN: The Springfield 510 flexhose from Titeflex is a 3/4" diameter, flexible, lightweight hose consisting of a convoluted triple ply Teflon innercore reinforced with Nomex nylon braid. Aluminum end fittings are permanently attached. Operating temperatures are -65°F to +400°F. The maximum working pressure, proof pressure, and burst pressure are 175, 350, and 700 psi respectively. With a maximum APU inlet pressure of 25 psi, the hose has a factor of safety of 7:1. The bend radius of the hose is 2 inches.

TEST: The flex hose is tested per specification by the hose supplier. Upon receipt, Rockwell proofs the hose and tags it to the system pressure of the unit. The flexhose is used in a low pressure, non-hazardous application. The hoses in this unit are visually inspected semi-annually per OMI V6A14.

INSPECTION:

RECEIVING INSPECTION: Incoming materials are verified and documented for identification, size, certs, and materials.

CONTAMINATION CONTROL: All parts are cleaned in controlled areas rated for class 300,000 clean room per MA0110-306, and verified and documented by inspection. Cleaning is done to 110M301M01, Rev. 'D', Level 300. (Ref. Mfg. Orders Control #34148P (703B) Authorization #EA4366).

CRITICAL PROCESSES: All hoses are tested before use per ATP ML0206-0115, Sect. 4. Visual inspection of hoses that indicate crushing, twisting, or chafing are replaced immediately. (Ref. M.O.C. #34148P, Auth. #EA4366).

TESTING: Testing of the lubricating oil service unit and hoses is per ATP ML0206-0115, and Item #3, Mfg. Order #34148P.

HANDLING/PACKAGING: Handling and packaging are verified and documented by inspection. (Ref. MK0116-0011.)

OPERATIONAL USE: The hoses are routed from the servicing cart through the aft fuselage access doors. The hoses are used at 25 psi and have a safety factor of 7 to 1. This assures that the hoses will not burst if properly maintained. Emergency procedure is to open circuit breaker 1 and close manual valve 3 stopping the flow of oil to the APU.

DETECTION: Leakage will be visually detected during servicing.

CORRECTIVE ACTION: Oil will be cleaned up and any damage repaired before flight.

TIME TO EFFECT: Failure will occur upon pressurization of unit.

FAILURE HISTORY: PRACA database shows history of damaged and kinked flexhoses requiring replacement (one in 1982, three in 1984, three in 1985 and two in 1988). These damaged hoses were found during p operation inspections. No damage occurred to the orbiter.