NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
		126FM02		
FILTER AND ORIFICE, ITEM 126 ---------- SV772158-3 (1)	2/1R	External gas Leakage. Seal failure.	END ITEM: Suit gas leakage to ambient. GFE INTERFACE: Excessive consumption of the primary oxygen supply. The SOP is automatically activated during EVA if the suit pressure drops to 3.33 psid. MISSION: Terminate EVA. Loss of use of one EMU. CREW/VEHICLE: None for single failure. Possible loss of crewman with loss of SOP. TIME TO EFFECT /ACTIONS: Seconds. TIME AVAILABLE: Minutes. TIME REQUIRED: Immediate. REDUNDANCY SCREENS: A-PASS B-PASS C-PASS	A. Design - The static, radial type seals at the CO2 filter prevent external leakage at the joint connecting the CO2 sensor bracket and the CO2 sensor cover. The application is low pressure (4.4 psi max.), and the elastomeric O-rings provide the sealing force over the tolerance and environmental ranges of this item. B. Test - Component Acceptance Test- No acceptance test performed. PDA Test - The item is leakage tested per SEMU-60-010. The vent loop is pressurized completely to 18 -20 psia. The leakage shall be 4.66 scc/min. O2 max. Certification Test - Certified for a useful life of 15 years (ref. SEMU-46-004). C. Inspection - Seal Failure - The sealing interfaces between the filter and orifice assembly the CO2 bracket and inserts, and the CO2 cover and inserts are 100% inspected to meet dimensional and surface finish requirements. The O-seals are inspected for surface characteristics per SVHS3432; 100% for Classes I and II, at least a 1.5 AQL for Class III. D. Failure History - None. E. Ground Turnaround - Tested for non-EET processing per FEMU-R-001, Final SEMU Gas Structural and Leakage. None for EET processing. F. Operational Use - Crew Response - PreEVA: Troubleshoot problem, if no success, consider EMU 3 if available. EMU no go for EVA. EVA: When CWS data confirms an accelerated primary O2 use rate, terminate EVA. If CWS data confirms and accelerated primary O2 use rate coupled with a loss of suit pressure regulation. Abort EVA. Training - Standard EMU training covers this failure mode. Operational Considerations - Flight rules define go/no go criteria related to EMU pressure regulation. Flight rules require termination of EVA upon activation of the SOP. Real Time Data System allows ground monitoring of EMU systems.

EXTRAVEHICULAR MOBILITY UNIT

SYSTEMS SAFETY REVIEW PANEL REVIEW

FOR THE

I-126 FILTER AND ORIFICE

CRITICAL ITEM LIST (CIL)

EMU CONTRACT NO. NAS 9-97150

Prepared by: 3/27/02
HS - Project Engineering

M. Snyder
HS - Reliability

Alan Ploych for RMu
HS - Engineering Manager

Approved by: RMB 4/3/02
NASA - SSA/SSM
25

NASA - EMU/SSM

NASA - S&MA

NASA - MOD

NASA - Crew

NASA - Program Manager