CIL

EMU CRITICAL ITEMS LIST

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Date: 3/27/2002

NAME	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE	
		103FM24Z			
LOWER ARM ASSEMBLY CABLE, 12 VOLT (1) LEFT, (1) RIGHT	2/2	Short in cable. Short in wiring or connector. Degraded insulation or contamination.	Loss of electrical power to	A. Design - The cable is constructed of 3 insulated high strength 24 gauge copper alloy wires P/N M27500-24TN3S06, which are then bound in Teflon tape. Attachment t the TMG is achieved by whipstitching the cables, preventing relative motion	
0103-212419 (2)			thermofoil heaters. GFE INTERFACE: Loss of active heating in glove finger tip area. MISSION: Terminate EVA. CREW/VEHICLE: None. TIME TO EFFECT	<pre>between the cable and the TMG. The connectors are LEMO series K connectors which are environmental connectors with triple wall construction to provide water and dust resistance. The LEMO connectors utilize a "QuickLok" feature that assures connection when the lock is engaged. The locking mechanism is protected By a rugged outer shell, eliminating accidental disconnections and damage to the locking mechanism, cable, or contacts. The connectors have a contact arrangement of five pins and are mechanically keyed with an alignment key on the shell which prevents errors in alignment. The contact terminations are crimps, performed per NHB 5300.4 3(H). A crafted metal collet type strain relief is provided to secure the cable around its circumference preventing accidental damage to the connection if the cable is stressed. In addition, a shrink tubing strain relief is placed over the end of the LEMO connector at the junction of the cable to the connector to provide</pre>	
			/ACTIONS: Minutes. TIME AVAILABLE: Hours.	additional strain relief. The connectors meet the electrical requirements for both voltage and current derating per MIL-STD-975. B. Test - Acceptance: See Inspection.	
			TIME REQUIRED: Minutes. REDUNDANCY SCREENS: A-N/A B-N/A C-N/A C-N/A	<pre>PDA: The connectors undergo 100% visual inspection when received from the vendor. Crimp joints are visually inspected by Government Quality Assurance Inspectors when fabricated. In addition, the cable assemblies are visually inspected and electrical continuity, insulation verification and electrical bond testing are performed during PDA. Certification: The system was successfully tested (manned) during certification testing to duplicate operational usage (Ref. Certification Test Report for the Lower Arm Assembly Cable, ILC Doc. 0111-712742). The following usage reflecting requirements of significance to the glove assembly was documented during certification testing.</pre>	
				Requirements:S/ADActualWrist Rotations4022480800Wrist Flexion/Extension2529250800Wrist Adduction/Abduction3420868800Elbow Flexion/Extension4966099600Don/Doffs98218Connector engagements300628Electrical verification tests conducted at each of seven Interim Test Points	
				determined that the cable was functional throughout certification testing. C. Inspection -	

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				The connectors undergo 100% visual inspection when receive addition, the cable assemblies are visually inspected and insulation verification and electrical bond testing are pe	electrical continuity,
				D. Failure History - None.	
				E. Ground Turnaround - Tested for non-EET processing per FEMU-R-001, Enhanced Arm Test Requirements. None for EET processing.	n Assembly, Pre-Flight
				F. Operational Use - 1. Crew Response - Pre-EVA/Post EVA: Troubleshoot problem. If no success, t	cerminate EVA.
				EVA: If loss of fingertip heating occurs in one glove, tu glove, terminate EVA. If loss of fingertip heating occurs off power from the battery, terminate EVA.	
				2. Special Training - None.	
				3. Operational Considerations - Not Applicable.	

EXTRAVEHICULAR MOBILITY UNIT

SYSTEMS SAFETY REVIEW PANEL REVIEW

FOR THE

I-103 ARM ASSEMBLY

CRITICAL ITEM LIST (CIL)

EMU CONTRACT NO. NAS 9-97150

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