

CIL  
 CRITICAL ITEMS LIST  
 FILE: CIL-SOP/2

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
ELECTRICAL HARNESS ASSEMBLY ITEM 425 SV771743-3 111	B/C	425FM09; ELECTRICAL SHORT, BATTERY SENSE LINE,  CAUSE: CABLE CRIMPING AGAINST CONNECTOR SHELL OR SHIELD, IMPROPER CONNECTOR STRAIN RELIEF,	END ITEM; BATTERY WILL DISCHARGE DURING IV ACTIVITY.  D/E INTERFACE; BATTERY DISCHARGE UNTIL THE DCN CURRENT SHUNT OPENS.  MISSION: LOSS OF EMI.  CREW/VEHICLE: NONE.	A. DESIGN - THE CABLE/CONNECTOR INTERFACES ON EITHER END OF THE ELECTRICAL HARNESS ARE STRAIN RELIEVED TO PREVENT EXCESSIVE CONDUCTOR LOADS AND POSSIBLE SHORTING. THE MULTIPLE CONNECTOR END IS POTTED WITH RTV AND IS CAPTURED WITHIN A METAL HOUSING. THE VEHICLE CONNECTOR UTILIZES A METAL STRAIN RELIEF TYPE BACKSHELL. THE AIRLOCK HALL AND BCH CONNECTOR INTERFACES HAVE RINGER SEALS TO PREVENT CONTAMINATION FROM ENTERING AFTER BEING MATED TOGETHER. THE WIRE IS Braid AND TEFLON COATED TO PROVIDE THE REQUIRED INSULATION RESISTANCE. CONDUCTORS ARE TIED TOGETHER AT 1-2 INCH INTERVALS AND SHEATHED IN A CLOTH OUTER LAYER TO HOLD CABLES TOGETHER SO THEY SHARE ANY LOADING AND TO PREVENT IMPACT OR ABRASION OF CONDUCTORS.  B. TEST - COMPONENT ACCEPTANCE TEST - INSULATION RESISTANCE AND ISOLATION RESISTANCE TESTS ARE PERFORMED PER SV771743-3 OPERATIONS SHEETS OP'S 110 AND 120 RESPECTIVELY. THE INSULATION RESISTANCE TEST VERIFIES THAT THERE IS A MINIMUM OF 100 MEGOHMS RESISTANCE BETWEEN ANY CURRENT CARRYING CONDUCTOR AND THE HARNESS SHELL AT 500 VDC. THE ISOLATION RESISTANCE TEST VERIFIES THAT THE MINIMUM RESISTANCE BETWEEN EACH CURRENT CARRYING CONDUCTOR AND EVERY OTHER CURRENT CARRYING CONDUCTOR IS 1 MEGOHMS AT 50 VDC. THESE TESTS INSURE NO CONDUCTOR IS SHORTED TO ANY OTHER CONDUCTOR OR TO THE HARNESS SHELL, AND THAT NO CONDUCTOR HAS INSULATION DAMAGE.
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CIL  
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 FILE: CIL-30P/E

NAME P/H QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
ELECTRICAL HARNES ASSEMBLY ITEM 425 SV771743-3 (1)	2/2	425PH09; ELECTRICAL SHORT, BATTERY SENSE LINE.		<p><b>CERTIFICATION TEST -</b>          THE ITEM COMPLETED THE 15 YEAR STRUCTURAL VIBRATION AND SHOCK CERTIFICATION REQUIREMENT DURING 10/83. ENGINEERING CHANGE 42004-124 IDENTIFICATION OF MECHANICALLY LOCKED BACKSHELLS HAS BEEN INCORPORATED AND DEEMED TO HAVE NO IMPACT ON CERTIFICATION SINCE THIS CONFIGURATION HAS CERTIFIED.</p> <p><b>PDA TEST -</b>          INSULATION RESISTANCE AND DIELECTRIC TESTS, ARE PERFORMED PER SEMU-60-086, TESTS 20.0 AND 24.0 RESPECTIVELY TO INSURE THIS LINE HAS NOT SHORTED.</p> <p><b>C. INSPECTION -</b>          FINAL INSPECTION OF THE HARNES ASSEMBLY CHECKS FACE OF CONNECTOR FOR CONDUCTIVE CONTAMINANTS. VISUAL INSPECTION OF CONDUCTORS PRIOR TO POTTING OPERATIONS TO INSURE THERE ARE NO DAMAGED CONDUCTORS AND THAT THE CONDUCTORS ARE PROPERLY ROUTED.          IN-PROCESS ELECTRICAL CHECKOUT OF HARNES BEFORE AND AFTER POTTING TO INSURE THERE ARE NO SHORT CIRCUITS.          VISUAL INSPECTION OF THE CONDUCTORS PRIOR TO ASSEMBLY OF OUTER SWEATH TO INSURE THERE ARE NO DAMAGED CONDUCTORS TO CAUSE A SHORT CIRCUIT.</p> <p><b>D. FAILURE HISTORY -</b>          NONE.</p> <p><b>E. GROUND TURNINRAD -</b>          TESTED PER FEMU-R-001, DABTER POWER INTERFACE AND CHARGEW SYSTEM FUNCTIONAL CHECK.</p> <p><b>F. OPERATIONAL USE -</b>          CREW RESPONSE - PRE/PASTEVAI TROUBLESHOOT PROBLEM. IF NO SUCCESS, DISCONTINUE USE OF EPU. CONSIDER THEIR EPU IF AVAILABLE.          TRAINING - STANDARD EPU TRAINING COVERS THIS FAILURE MODE.          OPERATIONAL CONSIDERATIONS - FLIGHT TIMES DEFINE GO/NO GO CRITERIA RELATED TO EPU BATTERY AND SCW POWER. EVA CHECKLIST PROCEDURES VERIFY HARNARE INTEGRITY AND SYSTEMS OPERATIONAL STATUS PRIOR TO EVA.</p>

0305-2