

CIL  
EMU CRITICAL ITEMS LIST

12/24/94 SUPERSEDES 12/24/91

ANALYST:

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Date: 11/10/94

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
OXYGEN/WATER MANIFOLD ASSEMBLY, ITEM 385 ----- SV779301-8 (1)	2/2	385FM04: Electrical open, loss of power through EMI inductor.  CAUSE: Broken connection, failed inductor winding.	END ITEM: Unable to power OCM from SCU vehicle power.  GFE INTERFACE: Unable to power EMU from SCU.  MISSION: Loss of use of one EMU.  CREW/VEHICLE: None.	A. Design - The inductor is an enclosed, potted, torroid and is qualified per MIL-T-27 for a class Y device. The inductor has two threaded studs for external electrical connections.  Lead wires are crimped into terminal lugs per SVMS 4909. The lugs are then bolted onto the external studs on the inductor. All lead wires are per W22759/11.  The inductor is hard mounted to the oxygen/water manifold.  The inductor is rated at 10 amps. Actual nominal current is less than 5 amps.  B. Test - Component Acceptance: The inductor is burned in for 96 hours at 10 amps and 125 degree C prior to shipment from the vendor.  In-Process: Continuity through the inductor and associated wiring is verified during two separate in-process tests during Item 385 assembly.  POA: Continuity through the inductor is verified during POA electrical tests per SEMU-60-015.  Certifications: The inductor was qualified to the requirements of MIL-T-27 by the vendor. The Item 385 completed the 15 year structural vibration and shock requirement and the four hour thermal vacuum requirement as part of the OCM Item 300 during 7/86 and 8/86. No Class I Engineering changes have been incorporated since this configuration was certified.  C. Inspection - All wiring on Item 385 (external wiring assembly, Item 387) is inspected during Item assembly by HS & DCAS QA for damage and wear and to insure all crimping meets the requirements of SVMS 4909.

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	2/2	J85PH04:		G. Failure History - None.

E. Ground Turnaround -  
Tested per FEMU-R-001, Y1103-02 Orbiter Checkout.

F. Operational Use -  
Crew Response -  
PreEVA: Troubleshoot problem. If no success, consider third EMU if available. Otherwise, EMU go for EVA prep on battery power. Consider use of spare battery for in-suit battery swap prior to EVA.  
PostEVA: Remain on battery power until EMU doffed.  
Special Training - Standard training covers this failure mode.  
Operational Considerations - EVA checklist procedures verify hardware integrity and systems operational status prior to EVA. Flight rules define go/no go criteria related to SCU power.