

12/24/94 SUPERSEDES 12/24/92

ANALYST:

NAME P/R QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
COOLANT ISOLATION VALVE, (ITEM 17) ----- BV7B4982-3 (1)	2/2	171FRO3: Full solenoid winding (pull-in) current maintained continuously. CAUSE: Capacitor shorts or opens.	END ITEM: The valve solenoid will draw 0.5 amp current for an extended time period. OPE INTERFACE: After a 5 to 15 minute time period, the valve coil will burn open and become non-operational. The valve position will be the last position (closed). MISSION: Loss of EMU. CREW/VEHICLE: None for single failure.	A. Design - If the failure occurs while in the "open" drive direction, the 0.5 amps coil current will be continually flowing. A 65 ohm limiting resistor is in series with the coil reducing continuous dissipation in the power "closed" direction to 2 amps. The maximum current draw of 0.5 amps reduces a 7 hour mission by less than an hour. B. Test - Component Acceptance Test (Eckel Valve Co.) - Response time of item is tested with 30-33 psig to inlet and 17 +/- 1 VDC. The time for current to start decay shall not exceed 200 milliseconds. PBA Test - The CLIV is subjected to open and close power applications during PLSS testing, including Para. 46 and 51 of SEMU-60-010. This check at the PLSS level ensures the valve is operating properly and no continuous current flow. Certification Test - The item completed the 15 year structural vibration and shock certification requirement during 10/83. C. Inspection - All internal wires associated with the item are inspected during source inspection for assembly per print and for cleanliness, and all external wires during PLSS assembly for proper installation during PLSS assembly. D. Failure History - None. E. Ground Turnaround - Tested per FEMU-R-001, Water Servicing, Leakage, and Gas Removal. F. Operational Use - Detection: CMS Message: I..XX PMR LF TIME LF:KK. Action: The CMS will cumulate the battery power consumed

CIL
EMU CRITICAL ITEMS LIST

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	2/2	171FM03:		during EVA and project time remaining based on use rate. A warning is issued when the time remaining is 30 minutes.