NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
FEEDWATER VALVE SWITCH, ITEM 367 SV767795-3 (1)	2/2	367FH02A: Toggle switch stuck in the "OPEN" position. CAUSE: Contact weld caused by arcing or a failure of the hermetic seal and exposure to vacuum, jamming, shorting due to contamination.	END ITEM: Feedwater switch continuously sends current to 137 valve open solenoid. OFE INTERFACE: Unable to close the sublimator feedwater valve. Water leakage into the sublimator to ambient. Unable to complete recharge sequence. MISSION: Loss of use of one EMU. CREW/VEHICLE: None.	A. Design - Switching mechanism and contacts are encased in a hermetically sealed case backfilled with dry nitrogen. Each switch position has dual contacts for redundancy. The external lead wires are potted for strain relief. Contact is accomplished through a roller type contact. This keeps switching forces to a minimum. (Operating Force is 4 +/- 2 pounds) B. Test - Component Acceptance Test - Vendor acceptance tests include 500 actuation cycles, contact resistance, insulation resistance, and dielectric withstanding voltage tests. In-Process Test - Switch operation and continuity are verified during four separate in-process tests during DCM Item 350 assembly. PDA Test - Proper operation is verified during DCM PDA, which includes continuity, functional, and operating torque tests. The switch is vibrated and exposed to thermal cycles during PDA as part of the DCM. Certification Test - The item completed the 15 year structural vibration and shock cert requirements during 10/83. The item is cycle certified by similarity to the Item 368 switch which has completed 127,000 cycles during 8/85. This is 86 times the Item 367 cycle cert requirement of 1,472. EC42806-599-7 added a lead to the switch for the redesigned DCM. This created the -2 switch configuration. Switch certification was not effected. C. Inspection - The external lead wires are inspected for damage as part of the source inspection for the part and again during assembly of the DCM. To preclude failure due to internal contamination, the switches are assembled by the vendor in a Class 100,000 clean room. The switches flushed internally using chlorothene NG and Genesolve D to remove contaminants prior to case welding. After welding, the switches are

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
	2/2	367FM02A:		vacuum baked and back filled with GN2 to a pressure of 3-5 psig and sealed. Leak checks are performed during subsequent processing to verify seal integrity. Two x-ray inspections are performed, prior to run-in cycling and after vibration, to verify absence of weld splatter and loose pieces, and to verify contact alignment. B. Failure History - None. E. Ground Turnaround - Switch operation is verified per SEMU-R-001, PLSS and DCM Electrical Checkout, 137 Activation. F. Operational Use - Crew Response - EVA: No response, failure cannot be isolated to feedwater switch. PostEVA: Perform water dump procedures. For subsequent EVA's consider third EMU if available. Otherwise EMU go for SCU without fan. Training - Standard EMU 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 EMU systems.