NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
POTABLE WATER LINE ITEM, 412A --- SV771722-7 (1)	2/2	412AFN01A: External leakage, potable water, EMU attached. CAUSE: Failure of hose, or hose fitting seal failure.	END ITEM: Water leakage to ambient. OPE INTERFACE: Depletion of the EMU water reservoir. MISSION: Unable to use one EMU during airlock activity. CREW/VEHICLE: Possible crew discomfort (hot) if second SCU is lost.	A. Design - The hose fittings are progressive-swaged design, fabricated of stainless steel, type 304, 321, 347 or 17-4 PH. The hose inner core material is convoluted polytetrafluoroethylene (TFE Teflon) laminated to woven glass cloth. The hose reinforcement is high temperature Nomex nylon braid. The hose is rated for 250 psi operating pressure compared to the 40 psi operating pressure requirement for this item. The Nomex reinforcement provides abrasion resistance as well as giving support to the inner core. The hose fitting at one end is a vendor - patented design with threads per MIL-S-8879. The other fitting is a 37 degree seat design to mate with an ms33656-4 OR ms24385-4 style G fitting. Assembly torque for the fittings is controlled to 10-14 ft-lbs. The vendor-patented hose fitting seal is a metal lip seal. Sealing is provided by surface finish control and the preload provided by the lip seal. B. Test - Component Acceptance: The hose/fitting is subjected to a proof pressurization of 48 psig and then a leakage test at 32 psig during which no visible water leakage is allowed. PDA: The potable water line integrity is tested in SEMU-60-005. The water line undergoes a proof test in which the line is pressurized to 60-64 psig for 5 minutes minimum. Next the hose is leak tested by pressurizing the line to 39-41 psig with water. While the hose is pressurized, it is examined for evidence of leakage for a period of 60 minutes. No leakage is allowed. Certification: The item completed leakage testing to 23 psig. proof pressure testing to 34.5 psig and was analyzed for its acceptability to burst pressure (46 psig) during 1/82. The following engineering changes have been incorporated and certified since that time: 42806-202 and 202-1 (revised SCU potable water max. op. press. to 40 psig, proof press. to 60

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	2/2	412AFM01A:		psig, and burst press. to 80 psig); 42806-454 (weight update); and 42806-691 (eliminate loosening of SCU multiple connector set screws).

C. Inspection -
At receiving inspection the fitting seat surfaces (32 micro-finish required) and the external hose surfaces are inspected. At final inspection after PDA test the hose (assembled to SCU at this point) is examined for damage to the external surface.

D. Failure History -
3-EMU-400--004 (2/9/93) - The SCU potable water line exhibited leakage during an ETA chamber run due to hose fatigue/cracking after 1538 mate/demate cycles. The item's 15 year life requirement is 906 cycles, indicating the hose exceeded its cyclic requirements. No corrective action required.

E. Ground Turnaround -
Tested per FEMU-A-801, Orbiter SCU Checkout.

F. Operational Use -
Crew Response -
Pre/PostEVA: Troubleshoot problem. If no success, discontinue use of SCU. Operate EMU on battery power. Consider sharing other SCU for cooling and O2 if battery constraints permit. Consider in-suit battery swap using spare battery(s).
Special Training -
Standard EMU training covers this failure mode.
Operational Considerations -
At least one spare EMU battery is manifested for each flight. EVA checklist procedures verify hardware integrity and systems operational status prior to EVA.