CIL
EMU CRITICAL ITEMS LIST

09/01/89 SUPERSEDES 06/02/89 ANALYST:

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
BENDS TREATMENT ADAPTER ITEM 601 ---------- SV792710-1 (1)	1/1	601FM02: External gas leakage. CAUSE: Damaged item 146 O-ring, damaged sealing surface on item 146 or BTA.	END ITEM: Suit gas leakage to ambient (airlock). GFE INTERFACE: Reduced ability to pressurize suit. More frequent O2 actuator cycles required to maintain 7.5-8.0 psig suit pressure. MISSION: Reduced bends treatment capability. CREW/VEHICLE: Possible loss of crewman from decompression sickness if leak is severe enough to completely loose pressurization capability.	A. Design - Sealing surfaces on the BTA are 6061-T6 aluminum coated with Nituff and located on an inside diameter of the adapter body. The other part of this radial O-seal configuration, located on item 146, is protected from damage by the O-seal itself. The chamfered edge and edge breaks on the item 146 make damage to the adapter body sealing surface unlikely, and the controlled edge radius at the entrance to the adapter body inside diameter makes the possibility of damage to the item 146 O-ring low. The radial (silicone) O-seal configuration and the four pin retention feature between the item 146 relief valve and the BTA adapter body provide seal squeeze under all tolerance conditions. The minimum seal squeeze for this configuration is 0.0095 in. B. Test - PDA Test - The BTA is external leak tested per SEMU-60-016 Para. 4.9. 35.0 scc/min O2 maximum is allowed at 7.9 - 8.04 psid. Certification Test - C. Inspection - Both the O-seal and sealing surfaces on the item 146 and BTA are 100% inspected for dimensional and surface finish requirements. D. Failure History - None. E. Ground Turnaround - Tested for external leakage per FEMU-R-001. F. Operational Use - Crew Response - PostEVA: For minor leaks, cycle the O2 actuator more frequently to attain treatment conditions. For greater leaks, consider manual plugging of adapter valve and estimating the pressure achieved. Training -

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	1/1	40EPN02:		Standard EMU training covers this failure mode. Operational Considerations - No constraints for single failure.