NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
SECONDARY OXYGEN PACK CHECKOUT FIXTURE RELIEF VALVE, ITEM 495 --- SV799099-00 (1)	2/2	495FM01: External gas leakage. CAUSE: Damaged or missing housing seals or neck ring seal.	END ITEM: SOP or primary oxygen leakage to ambient. GFE INTERFACE: Excessive consumption of the emergency oxygen supply during the SOP regulator checkout or excessive consumption of primary O2 during fan checkout/and water dump. MISSION: Loss of use of one EMU if SOP tank pressure is below 5800. CREW/VEHICLE: Elevated cabin PPO2.	A. Design - This item has a 140 micron filter at the inlet to limit contamination to the valve seat and seal. The seal is a low durometer elastomer (Fluro Silicon) to provide maximum seal compression. The valve lower housing has stroke limit stops to prevent excessive elastomeric creep. In addition, the elastomer is checked for hardness to assure adequate seal force. The interface seal is a radial type silicone rubber "O" seal. This seal is also made of elastomeric material which allows conformance of the seal to the housings being sealed and provides a sealing force over the tolerance and environmental ranges of the item. B. Test - PDA: A leakage test is performed during SEMU-60-018 in which the vent loop is pressurized with oxygen to 4.3 +/-0.1 psig. Leakage is not to exceed 114 scc/min O2. Certification: The SCOF is certified to meet all requirements except shock testing based on analysis, acceptance testing of the first production unit and similar equipment experience with the Item 146 positive pressure relief valve. Shock testing for the ground handling and test environments, was completed as of 5/30/89 (Ref. TER 3644). C. Inspection - O-ring grooves are 100% inspected per drawing dimensions and surface requirements. The interface "O" ring is visually inspected. A cleanliness level of NS3150 EM150B is maintained during assembly and testing of the checkout fixture relief valve. The SOP Checkout fixture is visually inspected at EOP and Final Inspection. EM1050 Cleanliness, EOP, and Final Inspection requires inspection points. D. Failure History - Related failures:

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	2/2	495FR01:		The SCBF Relief Valve is identical to the Item 146 Positive Pressure Relief Valve. J-EMU-146-AD02, J-EMU-146-AD03 and J-EMU-146-AD04 were written against the old design 146 aluminum valve, SV767705, for creep of the elastomeric seat. This problem was addressed during the redesign to the stainless steel valve, SV757036. Included in the redesign were the addition of steps to prevent compression/creep of the elastomeric seat. Other redesign features include the relocation of the flow orifice to isolate it from the valve seat/seat area. Three other RRR's J-EMU-146-A007(1/11/88), J-EMU-146-A008(1/10/84), and J-EMU-146-D06(1/17/88); leakage at reseat were caused by contamination of the valve seat caused by migration of corrosion products from the PLSS structure (all three RRR's involve PLSS 1011 only). E. Ground Turnaround - Tested per PEMU-R-001, Preflight Leakage test. F. Operational Use - CREW RESPONSE. Pre EVA (GOP CHECK): If detected during EVA prep (gop check), trouble-shoot problem, if no success, consider EMU 3 if available. EMU no go for EVA. Training - Standard EMU training covers this failure mode. Operational Considerations - Flight rules define go/no go criteria related to operational SOP. EVA checklist and EBF procedures verify hardware integrity and systems operational status prior to EVA.