

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
WATER PRESSURE REGULATOR, ITEM 113E ----- SV778873-15 (1)	2/2	113EFM04  Drifts below regulation band limits.  Contamination. Regulating spring relaxes, adjusting nut moves.	END ITEM: Unable to maintain water reservoir pressure at 15.15 psig.  GFE INTERFACE: Reduced water tank pressure. Dissolved gases in the water will come out of solution during EVA. The amount of gas released is in proportion to the degree of shift in the regulation band. Poor LCVG cooling water circulation.  MISSION: Terminate EVA if cooling is insufficient. Loss of use of one EMU.  CREW/VEHICLE: Crew discomfort (HOT).  TIME TO EFFECT /ACTIONS: Minutes.. If EVA, return to vehicle, If EMU, cooling cannot be maintained.  TIME AVAILABLE: N/A	A. Design - Springs operate at a stress below yield point. Valve and sense cavity protected by a 25 micron filter upstream and downstream. The demand stem is harder than its mating bore for a compatible sliding interface. The adjusting nut is lockwired in place.  B. Test - Vendor Component Acceptance Test - The regulator manufacturer, Carleton, performs a sea level performance test to assure that the regulator has not drifted below spec. Contamination is reduced/minimized by cleaning all of the internal details and oxygen passageways to HS3150 EM50A. The test facility and gases also meet the requirement.  PDA Test - Performance tests per SEMU-6-010 verify proper feedwater regulator function. With the oxygen bottles pressurized to 850-950 psia, the regulator must regulate to 14.6 - 15.7 psig at flow rates of 0.01 -0.02 lb/hr and 0.03 - 0.05 lb/hr O2. With the bottles pressurized to 75-85 psia, the regulator must regulate to 14.6 - 15.7 psig at a flow rate of 0.03 - 0.05 lb/hr O2. For bottle pressures of 850-950 psia and 75-85 psia, the regulator must regulate to 13.6 - 16.7 as monitored on the 132A transducer.  Certification Test - Certified for a useful life of 20 years (Ref. EMUM-0083).  C. Inspection - Details are 100% inspected per drawing dimensions and surface finish characteristics. Details are manufactured from material with certified physical and chemical properties. All details, gases and test facilities are cleaned and inspected to HS3150 EM 50A to preclude contamination clogging. The running and final torque of all threaded connections are verified by Vendor and DCAS inspection. A trial assembly is run on all details and then they are visually inspected. the demand valve pintle is manually depressed to assure free motion.  D. Failure History - H-EMU-113-A005 (1-17-81) Feedwater loop pressure was low. The regulator was set to the low end of the band and then shifted out of spec. The vendor is instructed to set all future regulators to the midpoint of the band.  E. Ground Turnaround - Tested for non-EET processing per FEMU-R-001, V1103 Performance Data and Item 113 Regulator Check. FEMU-R-001 Para 8.2 EMU Preflight KSC Checkout for EET processing.  F. Operational Use - Crew Response - PreEVA: Trouble-shoot problem, if no success, consider EMU 3 if available, otherwise continue. PostEVA: N/A. EVA: When CWS data confirms loss of feedwater gas pressure, terminate EVA if

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			TIME REQUIRED: N/A	cooling is insufficient. Training - Standard EMU training covers this failure. Crewman are trained for one man EVA scenario.
			REDUNDANCY SCREENS: A-N/A B-N/A C-N/A	Operational Considerations - Flight rules define go/no go criteria related to EMU thermal control. Flight rules define EMU as go to remain on SCU (available for rescue if required). EVA checklist and FDF procedures verify hardware integrity and operational status prior to EVA. Real Time Data Systems allows ground monitoring of EMU Systems.

EXTRAVEHICULAR MOBILITY UNIT  
SYSTEMS SAFETY REVIEW PANEL REVIEW  
FOR THE  
I-113 PRIMARY PRESSURE CONTROL MODULE  
CRITICAL ITEM LIST (CIL)

EMU CONTRACT NO. NAS 9-97150

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