

CEL
 CRITICAL ITEMS LIST
 FILE: CEL7/3

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	DAMAGE EFFECT	RATIONALE FOR ACCEPTANCE
NEGATIVE PRESSURE RELIEF VALVE ITEM 147 SV705027-2 (1) 1C154-B 06	E/IN	EXTERNAL LEAKAGE, INTERNAL LEAKAGE. CAUSE: FAILURE, HOUSING SEAL BYPASS LEAKAGE, CONTAMINATION, SEAT.	END ITEM: SUDE GAS LEAKAGE TO AMBIENT, QFE INTERFACE: EXCESSIVE CONSUMPTION OF THE PRIMARY OXYGEN SUPPLY. THE SOP IS ABNORMALLY REBIVED DURING EVA IF THE SUIT PRESSURE DROPS TO 3.38 PSIA. MISSION: TERMINATE EVA, END OF USE OF ONE EMB. CREW/VEHICLE: NONE FOR SINGLE FAILURE. POSSIBLE LOSS OF CREWMAN WITH LOSS OF SOP.	A. DESIGN - EMB ITEM UTILIZES AN ELASTOMERIC POPPET SEAL AND A STATIC FACE TYPE "O" SEAL COMPRESSED BETWEEN SMOOTH SURFACES TO PROVIDE PRELOAD FOR SEALING. THE ELASTOMERIC POPPET SEAL IS OF 30 DIAMETER SILICONE TO PROVIDE HAMMER SEAL COMPRESSION. CONTAMINATION IS MINIMIZED BY A 590 MICRON EXTERNAL FILTER. B. TEST - COMPONENT ACCEPTANCE: A LEAKAGE TEST IS PERFORMED PER AIRLOCK, INC. ATP-7803-02. FOR THE LEAKAGE TEST, THE VALVE IS PRESSURIZED TO 4.0 +/- .12 PSID. LEAKAGE SHALL NOT EXCEED 2.8 K 10 -4 SCC/SEC (0.048 SCC/MI) OF N2 AT 20 DEGREE. TO PREVENT CONTAMINATION OF THE VALVE DURING TESTING, AIRLOCK CLEANS THE NEGATIVE PRESSURE RELIEF VALVE DETAIL PARTS TO MSD50 EMB50 AND MAINTAINS CLEANLINESS DURING TESTING AND ASSEMBLY. POA: A LEAKAGE TEST IS PERFORMED PER SEMJ-60-010 IN WHICH THE VENT LOOP IS PRESSURIZED WITH OXYGEN TO 18.9 - 19.1 PSIA. LEAKAGE IS NOT TO EXCEED 4.66 SCC/MI. CERTIFICATION: THE ITEM COMPLETED THE 15 YEAR STRUCTURAL VIBRATION AND SHOCK CERTIFICATION REQUIREMENT DURING 10/83. NO CLASS I ENGINEERING CHANGES HAVE BEEN INCORPORATED SINCE THIS CONFIGURATION WAS CERTIFIED. THE ITEM COMPLETED 2,215 CYCLES DURING 03/85. THIS IS SEVEN (7) TIMES THE CYCLE CERTIFICATION REQUIREMENT OF 322. C. INSPECTION - O-RING GROOVES ARE 100% INSPECTED PER DRAWING DIMENSIONS AND SURFACE REQUIREMENTS. THE "ALUMINUM HORN" INTERFACE O-RING IS INSPECTED FOR SURFACE CHARACTERISTICS PER SVHS 3422 CLASS 110 13.5 MLL.

CIL
 CRITICAL ITEMS LIST
 FILE: CIL7/E

B/S/00 SUPERSEDES 6/6/1980

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
NEGATIVE PRESSURE RELIEF VALVE ITEM 147 SV78027-2 CIL FC156-2 *	2/IN	147(M01) EXTERNAL GEEGE, INTERNAL LEAKAGE.		<p>C. INSPECTION - (CONTINUED) APPROX CLEANS THE NEGATIVE RELIEF VALVE TO H03150 0H1500 AND MAINTAINS CLEANNES DURING ASSEMBLY AND TEST. THE VALVE SCREEN IS VISUALLY INSPECTED AT FINAL INSPECTION. MS SOURCE INSPECTION VISUALLY EXAMINES THE NEGATIVE RELIEF VALVE.</p> <p>D. FAILURE HISTORY - *RDN H-EMU-147-000 11/20/81) REPORTED LEAKAGE CAUSED BY A DAMPED FILTER SCREEN WHICH RESTRICTED THE MOVEMENT OF THE POPPET RESULTING IN THE IMPEDITY OF THE VALVE TO FULLY CLOSE. A "YELLOW TAG" NOTICE WAS ISSUED TO USE CAUTION WHILE HANDLING.</p> <p>RDN J-EMU-147-001 10/24/81) OBSERVED AN INTERNAL PROBLEM, A DAMPED SCREEN RESTRICTING VALVE POPPET MOVEMENT. YELLOW TAG NOTICE 2003 WAS ISSUED TO INSTALL A VENDED PROTECTION CAP (SD 3010204-101) WHEN THE IMPACT SHIELD WAS REMOVED. IMPACT SHIELD INSTALLATION PROCEDURE (ESEP-2-50) WAS INITIATED TO INSPECT THE FILTER SCREEN PRIOR TO INSTALLATION OF THE IMPACT SHIELD.</p> <p>*RDN H-EMU-147-002 10/20/81) INTERNAL LEAKAGE CAUSED BY CONTAMINATION ON THE POPPET SEALING SURFACE IS CONSIDERED AN ISOLATED CASE. THE PRESENT PASS FOR TEST SEQUENCE CONSISTING OF AN INITIAL LEAK TEST, CYCLING TEST (10 CYCLES), FLOW TEST, AND A FINAL LEAK TEST IS CONSIDERED ADEQUATE TO DETECT LEAKING 147 VALVES.</p>

CII
 CRITICAL ITEMS LIST
 FILE: CIL7/1

0/1/88 SUPERSEDES 4/4/1986

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
NEGATIVE PRESSURE RELIEF VALVE ITEM 147 SV705027-2 131 PC156-2	2/1R	1477981: EXTERNAL LEAKAGE, INTERNAL LEAKAGE.		<p>E. CRAND TURNDOWN - TESTED PER FEM-R-001, GAS STRUCTURAL AND LEAKAGE.</p> <p>F. OPERATIONAL USE - CREW RESPONSE PRE EVA; TROUBLE-SHOOT PROBLEM, IF NO SUCCESS CONSIDER EVA 2 IF AVAILABLE. EVA NO GO FOR EVA. EVA; WHEN CMS DATA CONFIRMS AN ACCELERATED PRIMARY O2 USE RATE, TERMINATE EVA. IF CMS DATA CONFIRMS AN ACCELERATED PRIMARY O2 USE RATE COUPLED WITH LOSS OF SHUT PRESSURE REGULATION, ABORT EVA. TRAINING STANDARD EVA TRAINING COVERS THIS FAILURE MODE OPERATIONAL CONSIDERATIONS FLIGHT RULES DEFINE COMMON GO CRITERIA RELATED TO EVA SHUT PRESSURE REGULATION. FLIGHT RULES REQUIRE TERMINATION OF EVA UPON ACTIVATION OF SOP. EVA CHECKLIST AND SOP PROCEDURES VERIFY HAZARD INTEGRITY AND SYSTEMS OPERATIONAL STATUS PRIOR TO EVA. REAL TIME DATA SYSTEM ALLOWS CONTINUOUS MONITORING OF EVA SYSTEMS.</p>