REV. A

DATE March 25, 1988
(Revised May 31, 1988)

FMEA #:60-S70-0790-03-MD9, MD26-01

END ITEM EFFECTIVITY:

X	X	X
OV102	OV103	OV104

MODEL NO: S70-0790-03

SUBSYSTEM: ECLSS

PART NUMBER:	PART NAME:	REFERENCE DESIGNATION:
MC621-0008	Disconnect Assembly, Freon	MD9, MD26

CRITICALITY NUMBER: 2

FUNCTION: Freon 21 interface to orbiter from GSE freon service.

CRITICAL FAILURE MODE: Mechanical failure.

CAUSE: Degradation of the assembly due to working environment.

FAILURE EFFECT ON:

(A) END ITEM: Failure would preclude continued operation.

(B) INTERFACING SUBSYSTEM(S): Freon 21 ground servicing GSE would be rendered inoperative, including final ground servicing.

(C) ORBITER: Possible exposure of downstream flight hardware to debris from disconnect breakdown. Possible exposure of TPS to Freon 21 discharge.

(D) PERSONNEL: Exposure of personnel to Freon 21.

HAZARDS: Exposure of personnel to freon 21 discharge.
Damage to flight hardware.
Contamination or flight hardware.

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ACCEPTANCE RATIONALE

DESIGN: Review of assembly documents and Specification Material Document (SMD) MC621-0008 has provided design data points to be complied with for acceptance rationale.

Design data points:
Operational envelope (proof pressure of 480 psig and burst of 1280 psig) is to exceed the expected use envelope of 0 to 320 psig at full flow operation - freon 21. Manual engagement and closure of disconnects with assurances of positive locking feature.

TEST:

PRE-OPERATIONAL: Per OMI V3537, GO70-582445
Pressure test to system operating pressures with GN2, 320 ± 15 psig, are conducted prior to Freon 21 servicing. Per V2001, Physical inspection of all interfaces for signs of corrosion or wear.

INSPECTION:

PRE-INSTALLATION: Per MC621-0008 (5.1 - 5.1.5)
Acceptance Test: Examination of product, The AHC, the AHC cap the GHC, and the GHC cap shall each be carefully examined to determine conformance to the requirements of this specification. Particular attention shall be given to weight, workmanship, finish, dimensions, construction, identification, marking, traceability level, and to the use of certified materials and processes.
AGE LIFE: Per OMI S6013, the assembly is inspected annually (V6F22) for compliance to the material and assembly specifications.
PRE-OPERATIONAL: Per OMI V3537: Components are inspected for cleanliness per MA0110-311, level 300 by visual inspection of bagging and sealing of interface ports and/or research of applicable TAIR books prior to each use.

OPERATION: Manual attachment and monitored filling insure a secure connection by personnel.

DETECTION: Visual detection of freon 21 discharge.

CORRECTION: Isolation and replacement.

FAILURE HISTORY: Review of PRACA Data Base has provided no failure history on component MC621-0008.