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SAAOITR01-001
REV. A
B/L: 315.50
SYS: SRM/PC TRANSPORTER

JAN 14 1988

Critical Item: Cylinder Valve

Find Number: None

Criticality Category: 15

SAA No: OITR01-001

System/Area: Halon 1301 Fire
Protection/SRM/PC
Transporter

NASA
Part No: None

PMN/
Name: P77-0828

Mfg/ 897691
Part No: Walter Kidde 897698

Drawing/ Walter Kidde Catalog
Sheet No: 2.1

Function: Controls flow of Halon 1301. Valve is normally closed.

Critical Failure Mode: Fails Closed. FM No. OITR01-001-001
OITR01-001-002

Failure Cause: Frozen by Contamination.

Failure Effect: Unable to release Halon 1301 fire extinguishing agent in response to fire alarm in the engine compartment of the SRM/PC Transporter. An uncontrolled engine fire could result in loss of life/SRM segment and/or payload.

Acceptance Rationale

Design:

- o Component Specification
Operating Temperature -65° to 200°F
- o Materials:
 - 'O' Rings: Synthetic Rubber
 - Valve Body: Brass
 - Stem Spring: Steel
 - Piston: Aluminum
 - Seat: Synthetic Rubber
- o Meets requirements of NFPA-12A "Standard for Halon 1301 Fire Extinguishing Systems".

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Cylinder Valve (Continued)

Test:

- o Validated by Acceptance Test.
- o NFPA-12A requires Hydrostatic Test every 12 years.

Inspection: The OMI will specify the following inspection requirements in accordance with NFPA-12A.

- o Verify cylinder pressure prior to payload/SRM movement.
- o Monthly: Check all parts of system for physical damage, rust, corrosion, e.g. piping, nozzles, cylinders, elbows, auxiliary equipment.
- o Semi-annual: Check flexible piping or hose for obstructions. Remove cylinder and valve. Blow piping out with clean dry air or nitrogen.
- o OMRSD File VI will require verification that cylinder PN897619 is pressurized to 360 ± 5 psig at 70°F prior to payload/SRM movement.

Failure History:

- o No KSC PRACA history of failure in the critical failure mode.
- o No GIDEP alerts were reported.

Operation:

- o Observers are assigned on both sides of the transporter to monitor safety requirements.
- o Fire department is notified to stand by when moving SRM segments.
- o Fire truck is in convoy when moving payloads.
- o Portable extinguishers are available in each cab and in convoy vehicles.
- o A power kill switch is activated to turn off all power to the transporter systems.
- o The engine compartment and the SRM segment are approximately 12 feet apart along the surface of the structural steel deck of the transporter.