

Critical Item: Halon Control Panel
(1 each MLP, 3 total)

Find Number: 1

Criticality Category: 1S

SAA No: O9SY01-002

System/Area: Halon 1301 Fire
Protection System/MLP

NASA
Part No: LUF 60002

PMN/
Name: K61-0739-01
K61-0740-01
K61-0741-01

MFG Pyrotechnics
Part No: 315-0850631

Drawing/
Sheet No: 79K30091
11

Function: Receives electrical signals from detectors or remote manual release switches and energizes system to perform early warning, personnel warning, and halon release. Can operate in automatic or manual mode.

Critical Failure Mode: Fails to operate. FMO9SY01-002.005

Failure Cause(s): Switch fails open; relays fail open; relay panels (SR32-1 and -2) fail.

Failure Effect: Loss of fire detection alarms, remote reporting, and halon release. Both arm and release valves could not be activated manually to release halon during launch time which could allow a fire to spread. Possible loss of life and damage/loss of a Space Shuttle Vehicle.

Acceptance Rationale

Design:

- o Operation between 85 and 110% of normal voltage
- o ANSI/NFPA 72 Style D initiating device circuits
- o 60 hour backup battery
- o Control panel conforms to applicable requirements of ANSI/NFPA 12A, ANSI/NFPA 70, ANSI/NFPA 72A, etc.
- o Control panel is listed by Underwriters Laboratories (UL).

Test:

- o File VI OMRSD requires a annual test:
 - Ensure Halon System is in the automatic mode. Activate two ionization detectors on separate circuits to perform end-to-end test and verify dampers close and halon actuator pins do extend approximately 1/4 inch.
- o PMI requires:
 - Quarterly verification of electrical components by energizing initiating and signaling circuits.

Inspection:

- o Verify functional operation annually and at component replacement.

Operational Use:

- o Nons. response by Fire Services Personnel when MLP at Launch Pad:
 1. During normal Pad operation (routine operation/maintenance personnel present), Fire Services Personnel will respond within 2-9 minutes after notification from LOC Room 1P10.
 2. During hazardous operations at the Pad (access limited to essential personnel only), response time after notification of a fire would be 2-9 minutes. Fire Services Personnel will be on-site or in near proximity during all hazardous operations.
 3. During post-launch operations (no operation/maintenance personnel present), response time after notification of a fire is expected to typically be within 20 minutes.

Failure History:

- o No KSC PRACA History of Failure in the Critical Failure Mode
- o No QIDEP ALERTs were reported.
- o No trouble tickets were reported.