

SRB CRITICAL ITEMS LIST

SUBSYSTEM: THRUST VECTOR CONTROL

ITEM NAME: APU Isolation Mounts

PART NO: 10201-0060-801, 10201-0061
801, 10201-0062-801

FM CODE: A01

ITEM CODE: 20-01-22A

REVISION: Basic

CRITICALITY CATEGORY: 1

REACTION TIME: Seconds

NUMBER REQUIRED: 2 Sets

DATE: March 31, 2000

CRITICAL PHASES: Final Countdown, Boost

SUPERCEDES: March 31, 1997

FMEA PAGE NUMBER: A-71

ANALYST: R. Imre/S. Parvathaneni

SHEET 1 OF 4

APPROVED: S. Parvathaneni

FAILURE MODE AND CAUSES: Failure of APU Isolation Mounts (System A and/or B) caused by:

- o Material defect
- o Manufacturing defect

FAILURE EFFECT SUMMARY: Fire and explosion will lead to loss of mission, vehicle and crew.

REDUNDANCY SCREENS AND MEASUREMENTS: N/A

RATIONALE FOR RETENTION:

A. DESIGN

- o The Isolation Mounts design, construction, performance and testing requirements are in accordance with 10SPC-0058. (All Failure Causes) (BI-1821R2)
- o Material selection is per MSFC-SPEC-522. (Material Defect)
- o Bracket material is titanium (Material Defect)
- o Qualification testing of the Isolation Mounts verified design requirements as reported in Barry Controls Qualification Test Report WD93136-3-005, Rev. A, and Stress Analysis WD93136-3-003, Rev. Basic. (All Failure Causes)
- o Qualification testing of the APU, which includes the Isolation Mounts, verified design requirements as reported in Sundstrand Qualification Test Report AER-1539-6, Rev. B.

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B. TESTING

- o Acceptance testing at vendor's plant is performed per Barry Controls ATP DSW 383 This includes examination of product and dynamic test. (All Failure Causes)
- o During refurbishment and prior to reuse, the isolation mounts are reworked per 10SPC-0131 and acceptance tested at USA SRBE/TBE Florida Operations per the criteria of 10SPC-0058. This includes visual inspection and sine vibration testing. (All Failure Causes)

C. INSPECTION

I. VENDOR RELATED INSPECTIONS

- o Vendor inspection and test records are verified per SIP 1288 by USA SRBE PQAR. (All Failure Causes)
- o Verification of material certifications per SIP 1288 by USA SRBE PQAR. (Material Defect)
- o Witnessing of acceptance testing per SIP 1288 by USA SRBE PQAR. (All Failure Causes)
- o Verification are performed on refurbished units per SIP 1288 by USA SRBE PQAR. This includes witnessing of acceptance test, verification that cleaning operations have been performed and verification that parts meet drawing requirements. (All Failure Causes)
- o Critical Processes/Inspections:
 - None

II. KSC RELATED REFURBISHMENT INSPECTIONS

- o Visual inspection of APU Isolation Mounts will be performed per 10SPC-0131, para. II. (All Failure Causes) CN 038
- o Functional testing of APU Isolation Mounts will be performed per 10SPC-0131, paragraph IV.

All manual tests will be witnessed by Quality or verified for those instances when controlled software is utilized and a test report is generated. (All Failure Causes)

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III. KSC RELATED ASSEMBLY & OPERATIONS INSPECTIONS

- o APU isolator mount installation and torque are witnessed per 10REQ-0021, para. 2.1.4. (Manufacturing Defect)

D. FAILURE HISTORY

- o Failure Histories may be obtained from the PRACA database.

E. OPERATIONAL USE

- o Not applicable to this failure mode.