SSME FMEA/CIL
REDUNDANCY SCREEN

Component Group:	**Ducts and Lines**	**Prepared:**	**D. Early**
CIL Item:	**N700-01**	**Approved:**	**T. Nguyen**
Part Number:	**RS007298**	**Approval Date:**	**7/25/00**
Component:	**Adapter Standpipe**	**Change #:**	**1**
FMEA Item:	**N700**	**Directive #:**	**CCBD ME3-01-5638**
Failure Mode:	**External structural failure.**		
		Page:	**1 of 1**

Phase	Failure / Effect Description	Criticality Hazard Reference
PSMCD 4.1	Oxidizer leakage into aft compartment. Overpressurization of aft compartment. Loss of vehicle. Redundancy Screens: SINGLE POINT FAILURE: N/A	1 ME-C3P,D, ME-C3S, ME-C3M, ME-C3A,C

SSME FEA/CIL
DESIGN

Component Group:	Ducts and Lines	Prepared:	D. Early
CIL Item:	N700-01	Approved:	T. Nguyen
Part Number:	RS007298	Approval Date:	7/25/00
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Design / Document Reference

FAILURE CAUSE: **A: Parent material failure.**

THE ADAPTER ASSEMBLY (1) IS MANUFACTURED UTILIZING INCONEL 718 TUBE AND BAR. INCONEL 718 WAS SELECTED FOR ITS STRENGTH, RESISTANCE TO STRESS CORROSION, CORROSION RESISTANCE, HIGH/LOW CYCLE FATIGUE CHARACTERISTICS AND WELDABILITY (2). MATERIALS ARE HEAT TREATED TO DEVELOP FULL MATERIAL STRENGTH AND HARDNESS. ALL MATERIALS USED IN THE STANDPIPE FABRICATION ARE LOX COMPATIBLE (2). FLANGE SECTIONS INCORPORATE RADIUS JOINTS TO REDUCE STRESS CONCENTRATIONS. MINIMUM FACTORS OF SAFETY FOR THE ADAPTER ASSEMBLY MEET CEI REQUIREMENTS (3). HIGH AND LOW CYCLE FATIGUE LIFE OF THE ADAPTER ASSEMBLY MEET CEI REQUIREMENTS (4). THE ADAPTER ASSEMBLY WAS CLEARED FOR FRACTURE MECHANICS/NDE FLAW GROWTH, SINCE IT CONTAINS NO FRACTURE CRITICAL PARTS (5). THE POGO ACCUMULATOR HAS COMPLETED PRESSURE CYCLING AND BURST PRESSURE DVS TESTING (6).

(1) RS007298; (2) RSS-8582; (3) RSS-8546, CP320R0003B; (4) RL00532, CP320R003B; (5) NASA TASK 117; (6) RSS-106-23

SSME FMEA/CIL
INSPECTION AND TEST

Component Group: Ducts and Lines
CIL Item: N700-01
Part Number: RS007298
Component: Adapter Standpipe
FMEA Item: N700
Failure Mode: External structural failure.

Prepared: D. Early
Approved: T. Nguyen
Approval Date: 7/25/00
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Failure Causes	Significant Characteristics	Inspection(s) / Test(s)	Document Reference
A	ELBOW ADAPTER STANDPIPE		RS007298
	MATERIAL INTEGRITY	MATERIAL INTEGRITY IS VERIFIED PER DRAWING REQUIREMENTS.	RS007298
	HEAT TREAT	HEAT TREAT IS VERIFIED PER SPECIFICATION REQUIREMENTS.	RA0611-020
	ASSEMBLY INTEGRITY	THE ELBOW IS PROOF PRESSURE TESTED PER DRAWING REQUIREMENTS.	RS007298
	FLIGHT FLOW TESTING	THE EXTERNAL SURFACE IS VISUALLY INSPECTED PRIOR TO EACH LAUNCH.	OMRSD V41BU0.030
		A HELIUM SIGNATURE LEAK TEST IS PERFORMED PRIOR TO EACH LAUNCH. (LAST TEST)	OMRSD S00000.950

Failure History: Comprehensive failure history data is maintained in the Problem Reporting database (PRAMS/PRACA)
Reference: NASA letter SA21/88/308 and Rocketdyne letter 88RC09761.

Operational Use: Not Applicable.

SSME FMEA/CIL
WELD JOINTS

Component Group: Ducts and Lines
CIL Item: N700
Part Number: RS007298
Component: Adapter Standpipe
FMEA Item: N700

Prepared: D. Early
Approved: T. Nguyen
Approval Date: 7/25/00
Change #: 1
Directive #: CCBD ME3-01-5638

Component	Basic Part Number	Weld Number	Weld Type	Class	Root Side Not Access	Critical Initial Flaw Size Not Detectable HCF	Critical Initial Flaw Size Not Detectable LCF	Comments
STANDPIPE	RS007298	1,3,4,5	GTAW	II	X			
STANDPIPE	RS007298	2	GTAW	I	X			