Meyers, Charles

From: Swanson, Greg
Sent: Thursday, August 22, 2002 12:27 PM
To: Meyers, Charles; Finnegan, Charles; Oliver, Stan; Aggarwal, Pravin
Subject: RE: SRB APU fuel pump inlet port crack - technical issue review

Was there any discussion about other areas of the fuel pump, or other components in the system?

-----Original Message-----
From: Meyers, Charles
Sent: Thursday, August 22, 2002 11:14 AM
To: Finnegan, Charles; Oliver, Stan; Aggarwal, Pravin; Swanson, Greg
Subject: SRB APU fuel pump inlet port crack - technical issue review

I attended a technical issue review for the SRB APU fuel pump inlet port crack issue. Just wanted to pass on USA's rationale for flight that they presented. I have not worked this issue, but am passing this on to those that did.

Rationale for flight, STS-112/BI115

- cracked fuel pump housing will be screened prior to flight
  - Sundstrand hotfire
  - GHe leak test
  - ACO hotfire with subsequent sniff checks

- minimal risk of crack growth during flight
  - small flight loads do not grow crack
  - water impact not considered

- redundant seal
  - metal-to-metal seal primary
  - o-ring is secondary

- inspection of 48 pumps in inventory shows no corrosion

- this occurrance of corrosion is believed to be unique due to inadequate corrosion inhibitor

Comment from USA presentor did indicate that this is not the most robust design. Yielding of housing under normal installation conditions is not good design, but change to Krytox grease reduces preload such that yielding does not occur.

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