

Advanced Turbine Support

MS7001FA Stator Vane Cracking

UNIT TYPE

This newsletter addresses the MS7001FA.

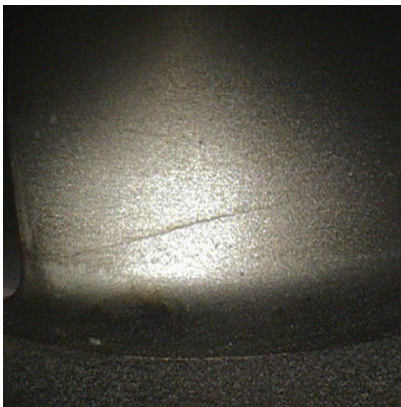
HISTORY

We recently found significant cracks on the trailing edge of several S-0 stator vanes that showed no signs of impact damage. We identified cracks on S1's on two units in 2009 and there are a high number of compressor failures attributed to S-2 and S-3 failures. It is very likely that these cracks would have lead to a total vane failure with continued unit operation. Cracking in this area may be the result of harmonics due to stator vane lock up caused by corrosion.

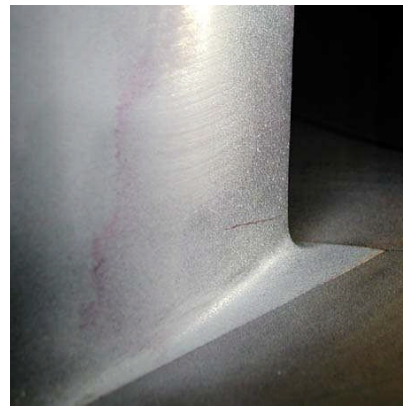
Fired Hours	Total Starts	All Flared Compressors
36696	1363	
18932	935	
14224	969	
18284	708	
17831	690	

RECOMMENDATION

Until the Eddy Current inspection can be performed we recommend users should perform a visual inspection of the stator vanes using a mirror and flashlight as soon as practical. Any suspect indications should be dispositioned using eddy current. Perform a full eddy current of the S-0 leading and trailing edges plus the S-1 leading edges as soon as possible. Perform an ECI of as many S-2 and S-3 leading edges as possible. We can normally get at least 25% of these stages. The remaining vanes are inspected using the high resolution videoscope. Some of the S-0 cracks we have found could only be identified using ECI so this inspection should be performed as soon as possible.



This photograph shows a crack in the trailing edge of an S-0 stator vane.



This photograph shows a crack in the trailing edge of an S-0 stator vane after dye penetrant testing.