

Advanced Turbine Support Newsletter 3

April 28, 2004

MS7001FA STAGE 0-R AND 1-R BLADE TIP DISTRESS

PURPOSE

To inform users of potential blade tip distress that has lead to the liberation of blade tips.

UNIT TYPE

MS7001FA gas turbines.

HISTORY

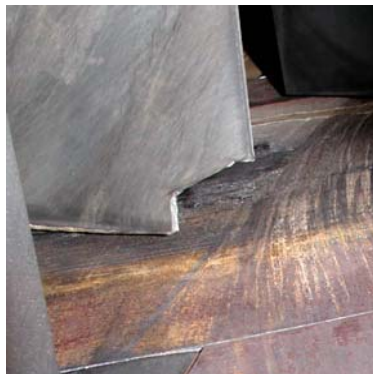
The stage 0-R and 1-R blade tip failures have typically occurred on units that have had rubs between the blade tips and the compressor case. A primary indicator of distress is tip discoloration and or rolled metal along the blade tips. In one case we identified a cracked stage 0-R blade that had virtually no signs of tip discoloration.

The degree of damage caused by tip failures has ranged from minor impact damage to major damage that required the rotors to be pulled for repairs.

RECOMMENDATION

Perform a visual inspection of the stage 0-R and 1-R blade tips by utilizing a borescope or using a flashlight. The inlet guide vanes should be stroked open to allow a visual inspection of as many blade tips as possible. If any gray or black discoloration is evident or blade tips are missing a remote penetrant test should be scheduled at the earliest opportunity. If a cracked blade tip is identified we can either remotely remove the blade tip or an outage can be scheduled through your normal channels.

This view is showing a stage 0-R tip failure.



This view is showing a cracked stage zero rotor blade.



This view is showing collateral damage to a stage zero stator vane.



This view is showing a cracked stage one rotor blade.

