

ADVANCED TURBINE SUPPORT

WESTINGHOUSE 501F: COMPRESSOR STAGE 1-R BLADE TIP DISTRESS

PURPOSE

To inform users of potential compressor rotor blade tip distress that has led to the liberation of blade tips.

UNIT TYPE

501F Gas Turbines.

HISTORY

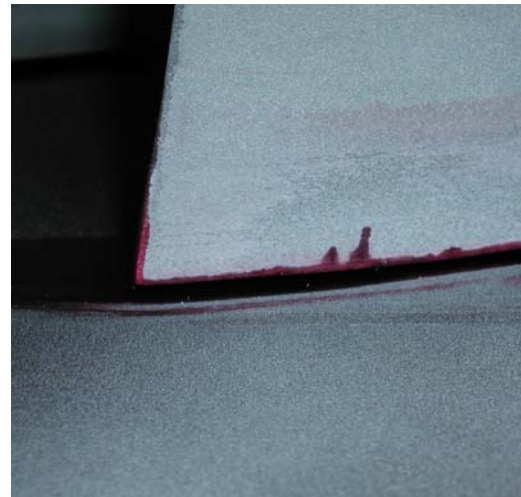
The stage 1-R rotor blade tip failures have typically occurred on units that have had rubs between the blade tips and the compressor case. A primary indicator of distress is tip discoloration and or rolled metal along the blade tips. The degree of damage caused by tip failures has ranged from minor impact damage to major damage that required the rotors to be removed for repairs.

RECOMMENDATION

Perform a visual inspection of the stage 1-R rotor blade tips by utilizing a borescope or a flashlight. The inlet guide vanes should be fully open to allow a visual inspection of as many blade tips as possible. If any gray or black discoloration is evident or if any of the blade tips are missing a remote penetrant test should be scheduled at the earliest opportunity. If a cracked rotor 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 1-R rotor blade tip failure.



This view is showing a stage 1-R rotor blade tip crack identified using dye-penetrant testing.