

Advanced Turbine Support

General Electric 7FA:

Dovetail cracking on the standard R-0 blades and the R-1 blades.

PURPOSE

To inform users of dovetail cracking that has been identified on the standard R-0 and R-1 blades.

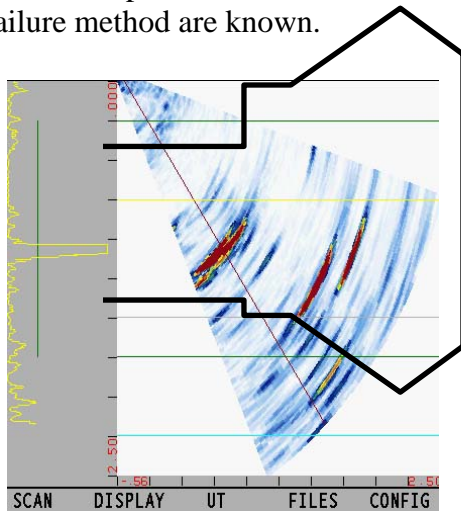
UNIT TYPE MS7001FA

HISTORY

We have identified cracked standard R-0 blades on approximately 20% of the units we've inspected (69 blades). The hours and starts for the lowest unit that had cracks was 316 total starts with 2781 total hours. We have recently identified a cracked R-1 blade using our proprietary phased array technique. To date we know of one unit that had a catastrophic failure due to R-1 blade liberation and now three that have had cracks identified prior to failure.

RECOMMENDATION

Perform a phased array ultrasonic inspection of the R-0 and R-1 blade platforms as soon as possible. Any fretting indications found should be monitored on a 15-start interval. Normal inspection interval should not exceed 6 months until more details about the failure method are known.



7FA Standard R-0 blade on unit 1 with a 1.8" dovetail crack.



This close-up photograph shows where a crack was identified on unit 2. The crack was verified using UT in place and ET when removed. Best viewed at 200% zoom.