

Advanced Turbine Support 6B Inspection Recommendations

Full Borescope: This includes the following areas:

Inlet Guide Vanes for damage or out of calibration issues.

R-1 Visual Inspection per TIL 1382-R3

All stages of the compressor: The inlet to R-13 at the top, bottom and along both case breaks.

All of the aft-compressor stages-Ensure all stator vanes are inspected.

Full Combustion Section including all liners, the interior of the transition pieces

Turbine and Exhaust

Frequency: At least annually or semi-annual depending on run hours and starts. Some units that experience high starts and hours should be inspected before or after each heavy run season. The TIL 1382 R3 Visual Inspection is recommended every 25-Starts.

S-1 to S-4 Shim Map: This inspection will document whether there are shims at any of the 20-ring segment locations.

Frequency: Once to determine if and or where the shims are located. If there are properly seated shims this inspection should be done during each scheduled borescope inspection.

Frequency if there are shims protruding: If any shims are protruding from the case less than ½” they should be monitored every 25 starts until they reach ½”. At that point removal or grinding should be performed per TIL 1562. If shims are found ½” or more out of the case the unit should not be run until removal or grinding has taken place.

Remote dye penetrant testing of the R-1 blade tips: This inspection is designed to check for radial tip cracks that may have occurred due to the blades rubbing the compressor case.

Frequency: Annual or 50-starts with no signs of a rub

Frequency with Rubs: Every 25-starts if there is tip discoloration or rolled metal on the blades. We have determined that this interval is most likely to identify cracks prior to the liberation of material from the blades. This interval is not affected by tip grinding. We regularly find cracks on units that have been tip ground.

Phased Array Ultrasonic Inspection of the R-1 blade platforms: This inspection is designed to identify cracks in the compressor blades. We recommend this inspection be used in addition to the visual inspection recommended in TIL 1382 R3.

Frequency: At least every 6 months until better data can be gathered about the root cause of the failures.

S-1 to S-3 High Resolution Corrosion Pitting Inspection: This inspection is designed to identify corrosion pitting, minor impact damage or linear indications in the stator vanes that may contribute to catastrophic compressor failure.

Frequency: Once to determine if pitting is present. If pits are present a baseline eddy current inspection should be performed to determine if any cracks have originated out of the pits.

Frequency with known pitting or minor FOD: Every 25-50 starts until the vanes can be replaced.