

## Advanced Turbine Support Frame 5 Inspection Recommendations

**Full Borescope:** This includes the following areas:

Inlet Guide Vanes for damage or out of calibration issues.

The inlet to R-10 at the top and bottom

The S-9 bleed air hook fit should be inspected at the top, bottom and both case breaks to check for cracking that has lead to numerous catastrophic compressor failures. This failure method is addressed in TIL 1304-3. Cracking typically initiates at one of the case breaks.

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

Turbine: Check for damage and feather seal migration from between all of the first stage nozzles segments.

**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. If corrosion is present at the 9<sup>th</sup> stage hook fit we recommend a not to exceed 25-start inspection interval.

**Eddy Current Inspection of the S-1 Stator Vanes:** This inspection is designed to identify cracks or linear indications in the stator vanes that have lead to catastrophic compressor failures.

**Frequency:** Annual or semi-annual depending on starts, hours and condition of the vanes.

**Frequency with known pitting or foreign object damage:** Every 25-50 starts until the vanes can be replaced. Larger damage may require a shorter inspection interval.

**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.