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1. PROJECT NAME AND DEFINITION

Project Name: [REDACTED]

Project Definition: The purpose of this visit was to perform BSI and visual inspection on ESN: [REDACTED] Gas Turbine.

2. EQUIPMENT INFORMATION

Brand: General Electric
Model: 7LM2500-PK-MD
ESN: [REDACTED]
Year of Manufacture: 1999
GT Running Hours: 48,725Hrs.
Package Running Hours: 102,430 Hrs.
Fired Start: 855/44
TSN (Time Since New):
TSLO (Time Since Last Overhaul) No overhaul was performed.
Current Status: Not running, has been cranked once a week.

CHRONOLOGIC HISTORY OF ESN 557-052	
1999	Year of manufacture

3. CONCLUSION

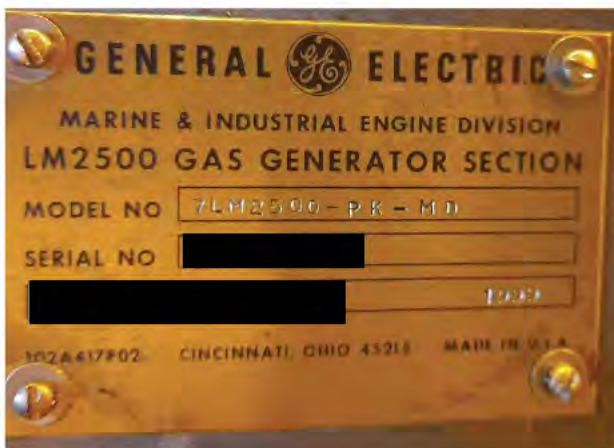
- According to visual inspections, GT looks in good condition without damages on tubing, piping, components, and any other external parts.
- Based on borescope inspection results, HPC, Combustor, HPT 1st&2nd stg. rotor, STG1& 2 Nozzles, TMF, PT Inlet and out inspected; damages was detected on some of HPC Rotor blades they are serviceable as per GE O&M Manual, GEK105054, WP406 00.
- Unit was stopped on 1st Aug. 2018 with 8.774 running hours and 225 start cycle.
- Gas Turbine periodically cranked once a week.

4. VISUAL INSPECTION

Performed visual inspection for general condition of gas turbine. Checked FF, HPC, CRF, HPT, TMF PT Modules and Accessory Gearbox. All modules and its attached parts below.

- VSV system (actuators, VSV bushings, arms etc.)
- Oil system,
- Fuel system (fuel nozzles, manifolds etc.).

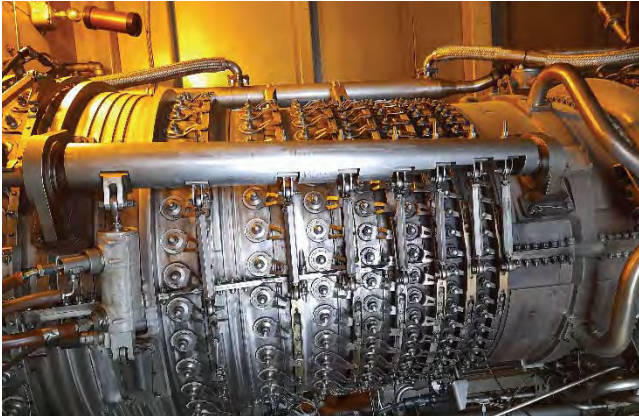
GT are observed in satisfactory condition.



GT Name Plate



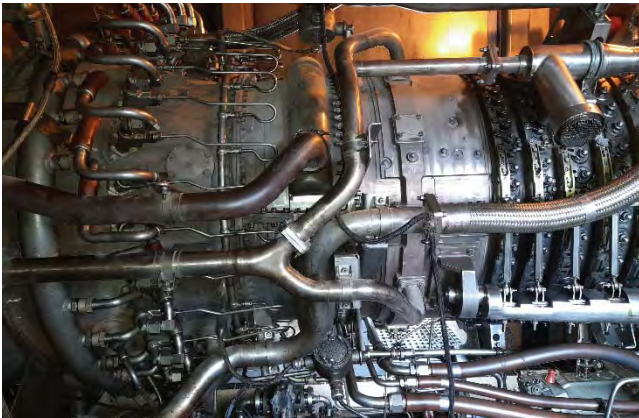
Front Frame View



HPC General View L/H



HPC General View R/H



CRF General View



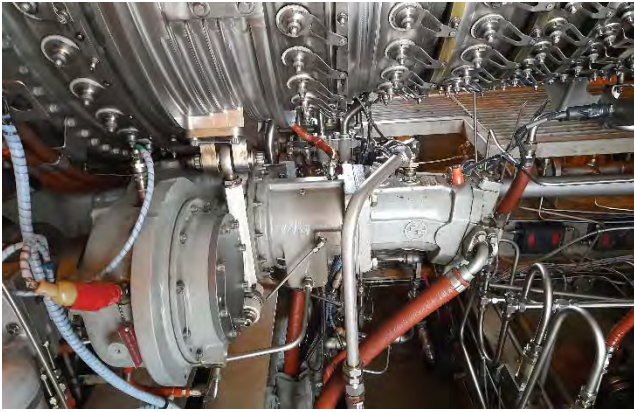
AGB View



AGB & LS PUMP General View.



PT& HPT Modules View



AGB, Starter & Clutch View



Gas Manifold and Piping's View



Piping View



General View

5. BORESCOPE INSPECTION

Performed borescope inspection as per GE O&M Manual GEK105054, WP406 00

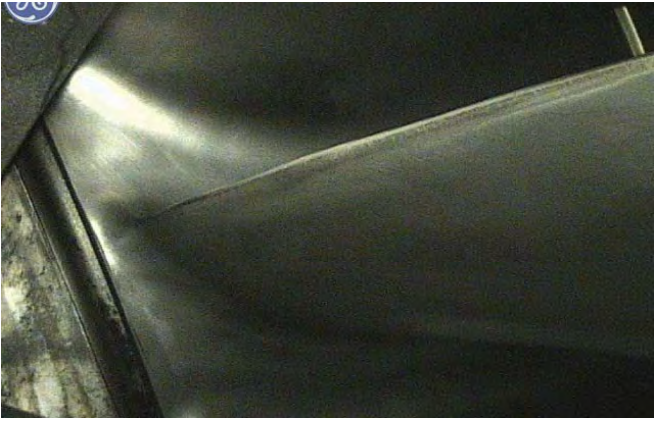
Findings are as follow.

5.1. HPC Module:

- HPC STG5 Blade, nick on the Leading Edge.
- HPC STG11 Blade, Nick on L/E side.
- HPC STG12 Blade Missing on T/E side (2 blades have missing.) WP 406 00Table:4/ 2b
- HPC STG12 Blade damage on Tip Cord area
- HPC STG12 Blade Dent on L/E wall



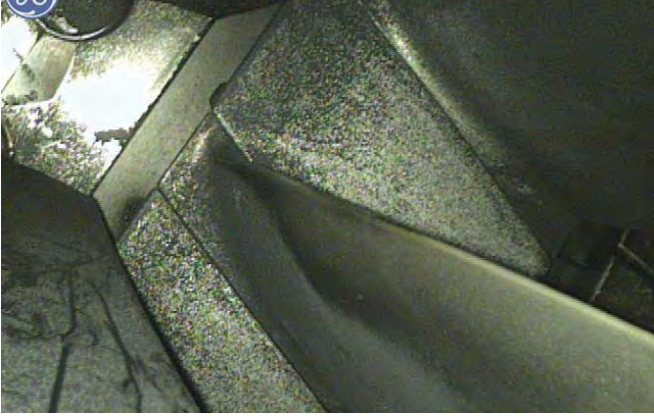
HPC STG0 BILISK



HPC STG0 BILISK



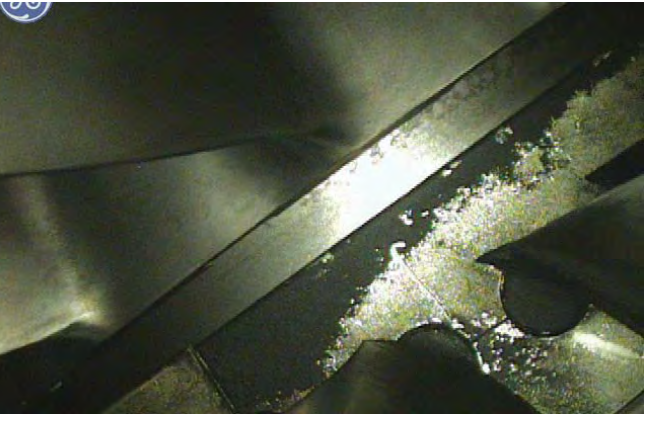
HPC STG1 Blade



HPC STG1 Blade ROOT



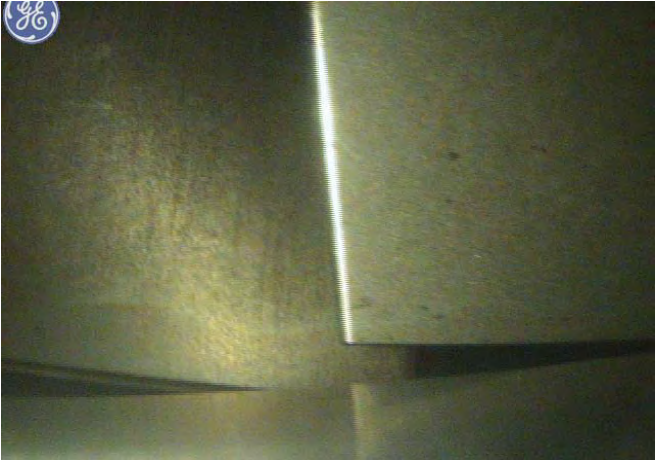
HPC STG2 Blade



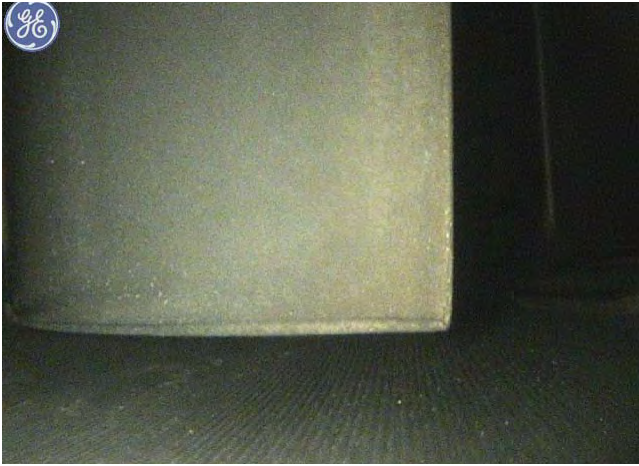
HPC STG2 Blade and vane



HPC STG3 Blade Tip



HPC STG3 Blade



HPC STG4 Blade Tip



HPC STG4 Blade root



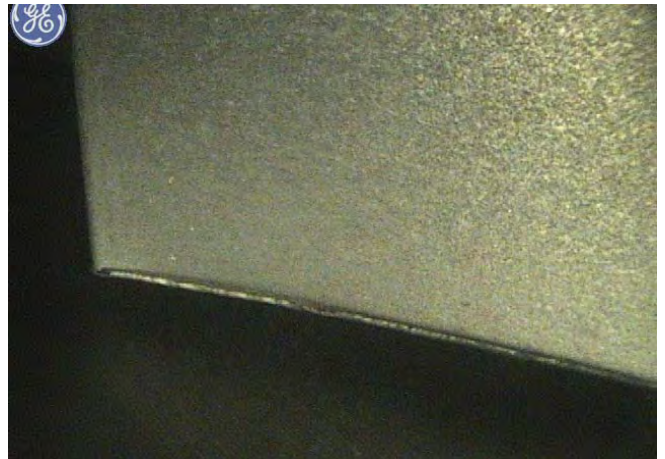
HPC STG5 Blade



HPC STG5 Nick on L/E side



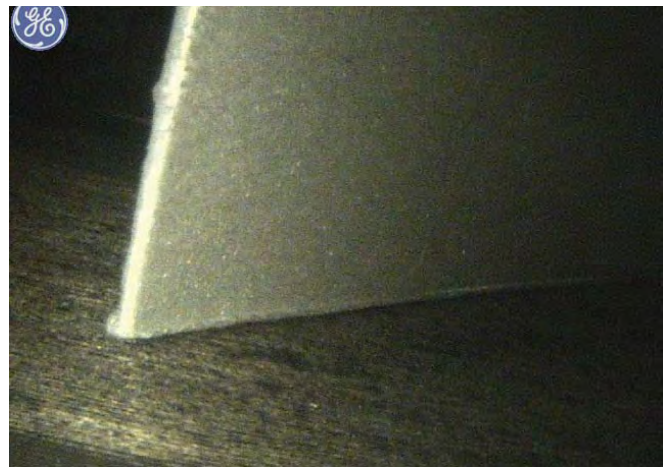
HPC STG6 Blade



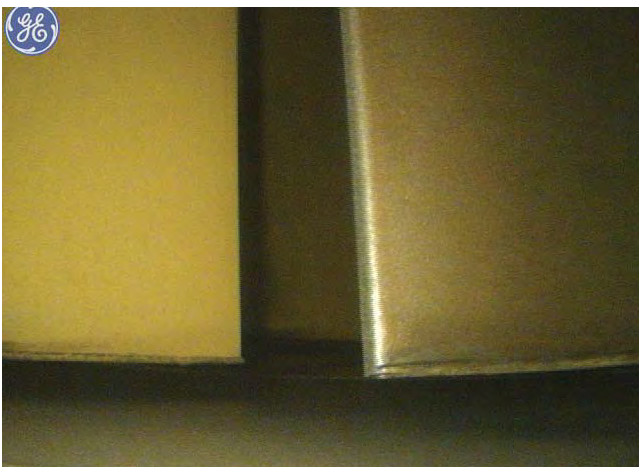
HPC STG6Blade



HPC STG7 Blade.



HPC STG7 Blade



HPC STG8 Blade



HPC STG8 Blade



HPC STG9 Blade LE



HPC STG9 Blade - LUCKING LUG



HPC STG10 Blade



HPC STG10 Blade - LUCKING LUG



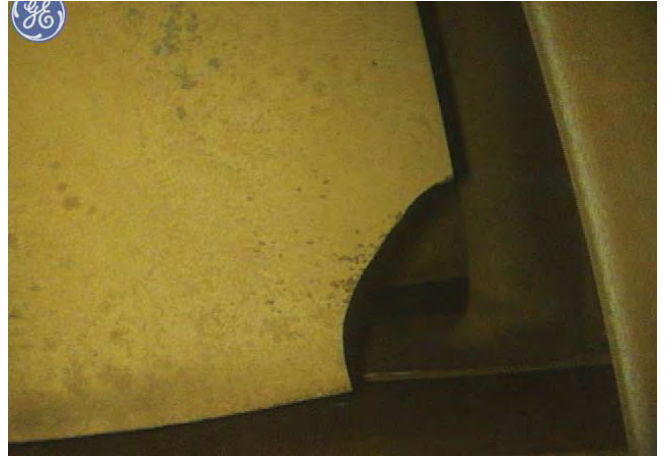
HPC STG11 Blade Nick on L/E Blade



HPC STG11 Blade Lucking Lug



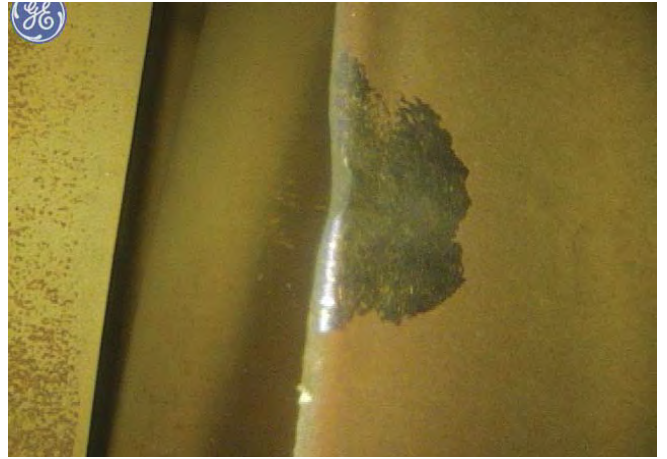
HPC STG12 Blade Missing on T/E side
Serviceable Table:4, 2/b



HPC STG12 Blade Missing on T/E side
Serviceable Table:4, 2/b



HPC STG12 Blade damage on Tip Cord area



HPC STG12 Blade Dent on L/E wall



HPC STG12 Blade Nick on L/E Blade



HPC STG12 Blade - Locking Lug



HPC STG13 Blade



HPC STG13 Blade filed on L/E side



HPC STG14 Blade



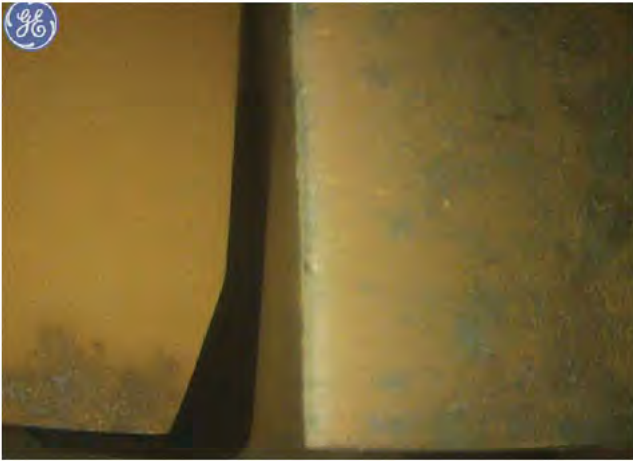
HPC STG14 Blade



HPC STG15 Blade



HPC STG15 Blade



HPC STG16 Blade

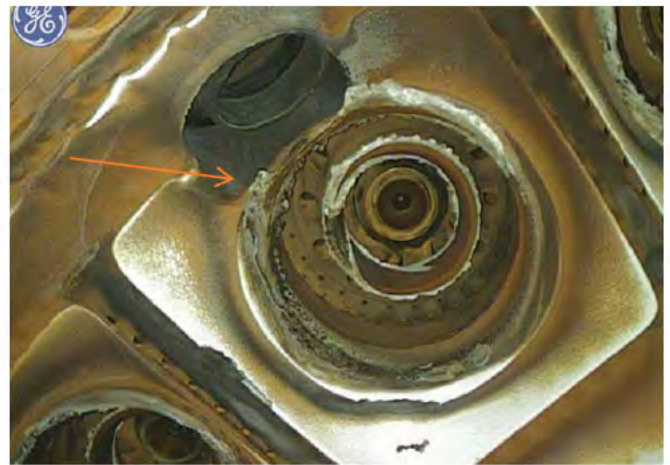
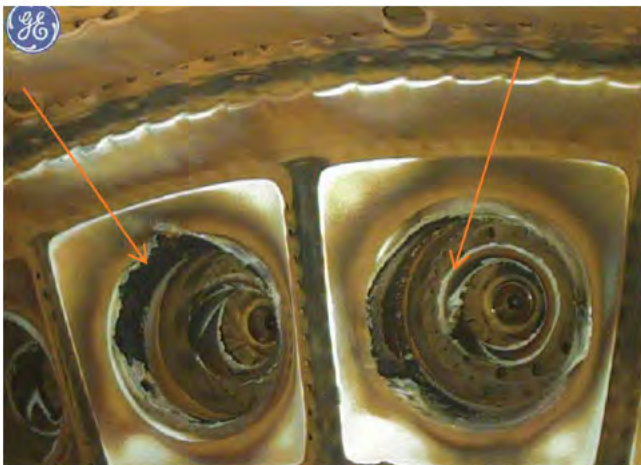


HPC STG16 Blade Locking Lug

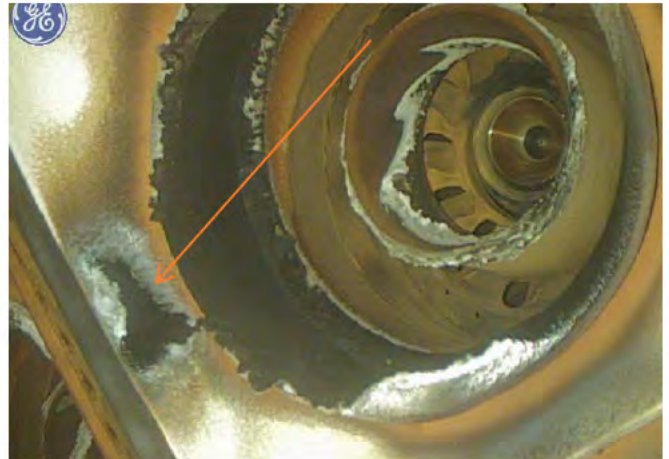
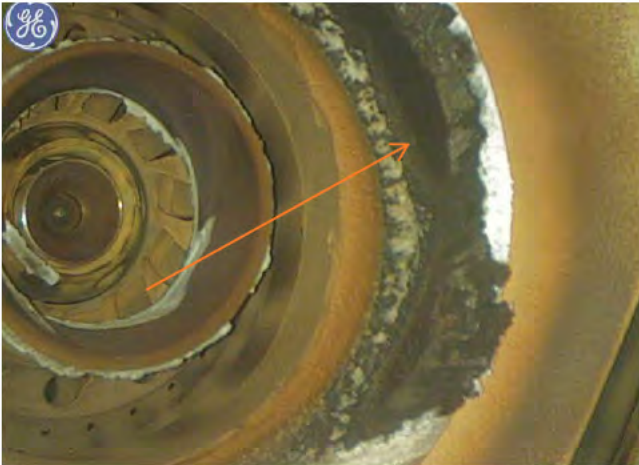
5.2. Combustion Chamber

Combustion chamber is in good condition generally. Ref.WP406 00 Table:6

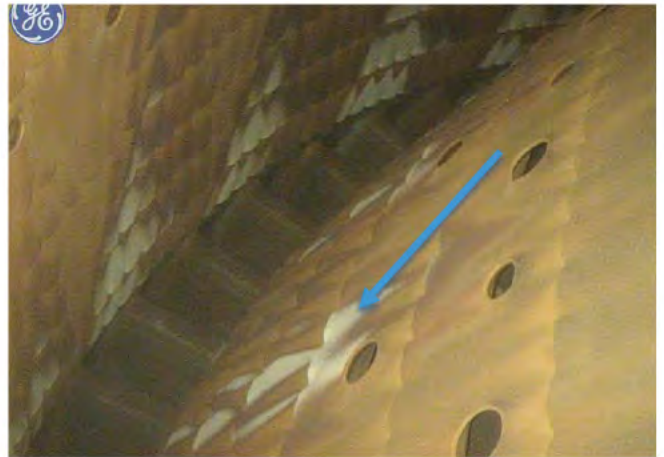
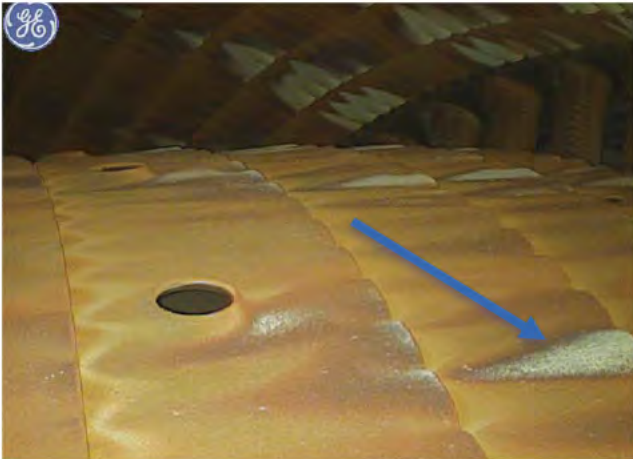
- Observed some Deposit accumulation on the Venturi, Swirl cups and Trumpets,
- TBC missing and an erosion on splash plates.
- Discoloration on the Inner & outer liner scoop louvers.



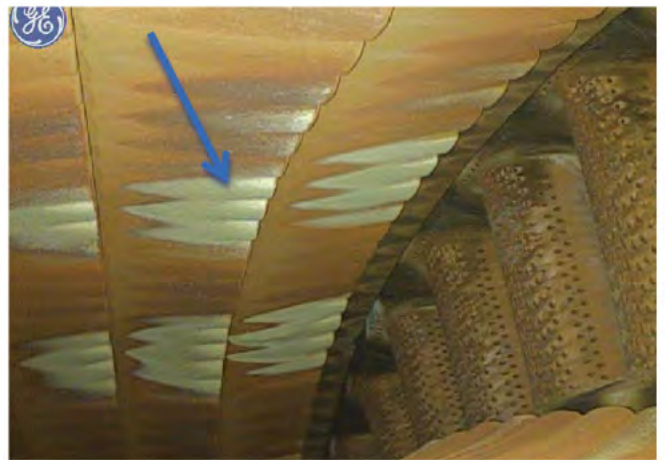
Deposit accumulation and TBC missing on the Venturi (Secondary Swirler), Swirler Cup & Trumpet area.



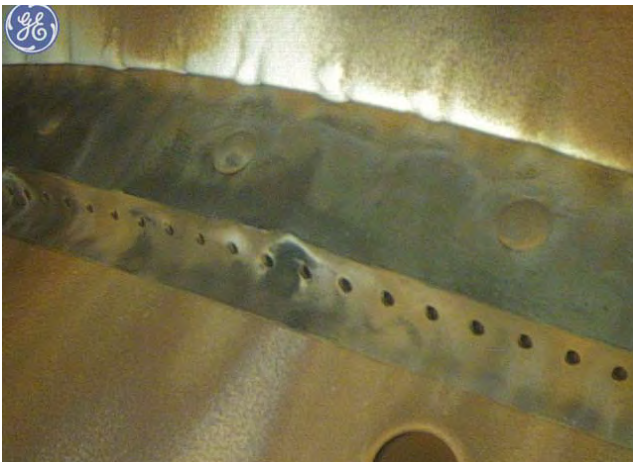
TBC missing and erosion on Trumpet/Splash Plates



Combustor Inner Liner Condition observed some discoloration areas on the scoop louvers.



Combustor Outer Liner Condition observed some discoloration areas on the scoop louvers.

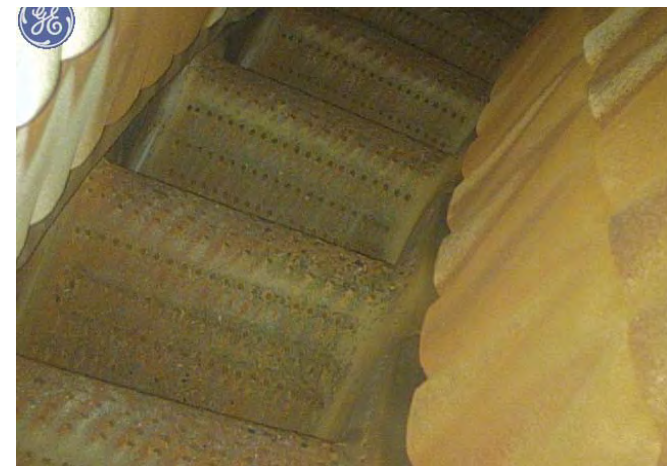


Inner Dome plate cooling holes and rivets are good conditions.

5.3. HPT Module

5.3.1. HPT STG1 Nozzle Ref.WP406 00 Table:7

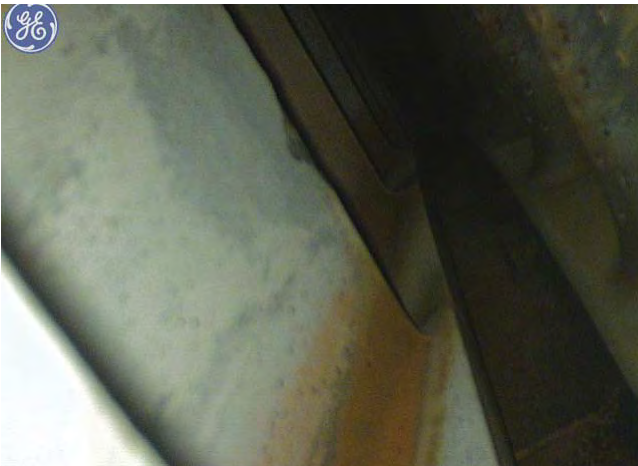
- Observed Eroded areas on the two HPT STG1 Nozzle Vane Trailing edge sides. Serviceable.
Ref: Table:7 /2f



HPT STG1 Nozzle Vane Leading edge.



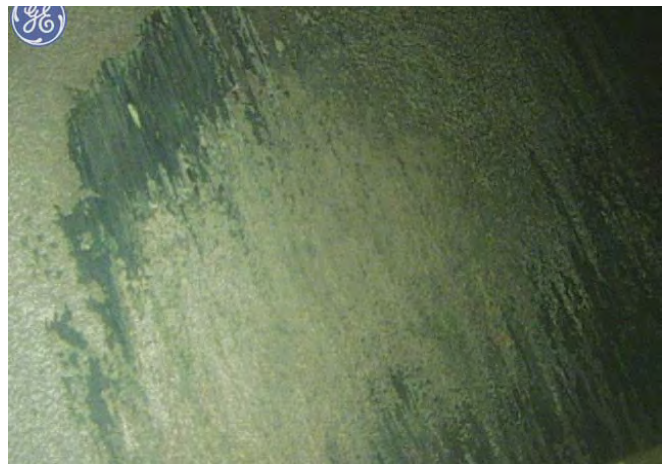
HPT STG1 Nozzle Vane Trailing Edge



Eroded areas on the HPT STG1 Nozzle Vane Trailing edge side. Serviceable

5.3.2. HPT STG1 Shroud WP406 00

Observed blade rubbing and corrosion on HPT STG1 Shroud. Ref.: Table: 7/ 5a



Blade rubbing and corrosion on HPT STG1 Shroud.

5.3.3. HPT STG1 Rotor Blades

Observed below defects on HPT STG1 Rotor Blades.

- Observed TBC missing on Leading Edge of STG1 rotor blades,
- Discoloration on all surfaces of blades.
- Discoloration on convex surface of STG1 blades and missing on the tip cap trailing edge corner. (only one blade)
- HPT founds slight dirty.

HPT STG1 Rotor Blades are serviceable according to WP406 00, Table 7.



Discoloration on the HPT STG1 Blade LE



Discoloration on convex surface of STG1 blades and missing on the tip cap trailing edge corner. (only one blade)

5.3.4. HPT STG2 Nozzle WP406 00 Table:7/3

Observed below defects on HPT STG2 Nozzle.

- Discoloration all surface on STG2 Nozzle.



HPT STG2 Nozzle LE sides.



HPT STG2 Nozzle TE sides

5.3.5. HPT STG2 Shroud

- HPT STG2 shrouds found intact free from any sign of damage.



HPT STG2 shroud.



5.3.6. HPT STG2 Rotor Blades

HPT STG2 Rotor Blades are in good condition. Observed some deposit on concave surface of blades.



HPT STG2 Rotor Blades LE View.



HPT STG2 Rotor Blades TE View

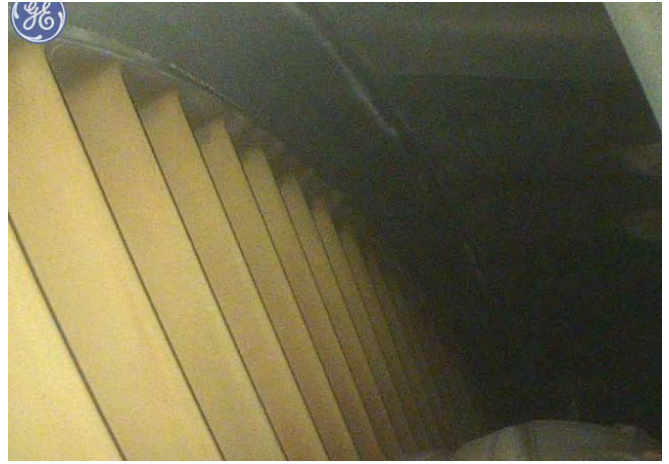


PT Module

PT Rotor Blades are in satisfactory condition.



PT Inlet vanes





PT STG1 Rotor Blades



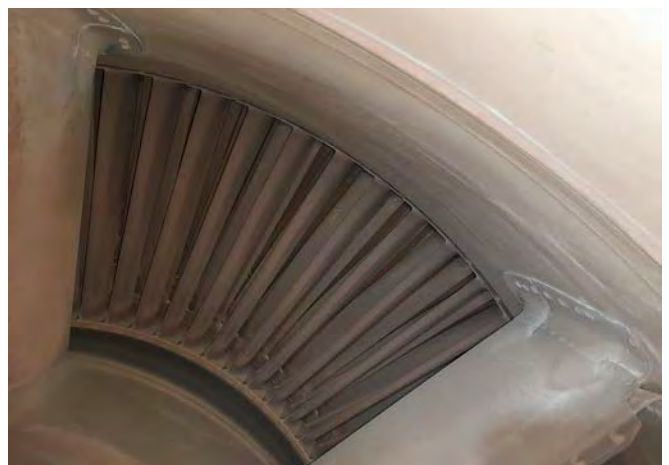
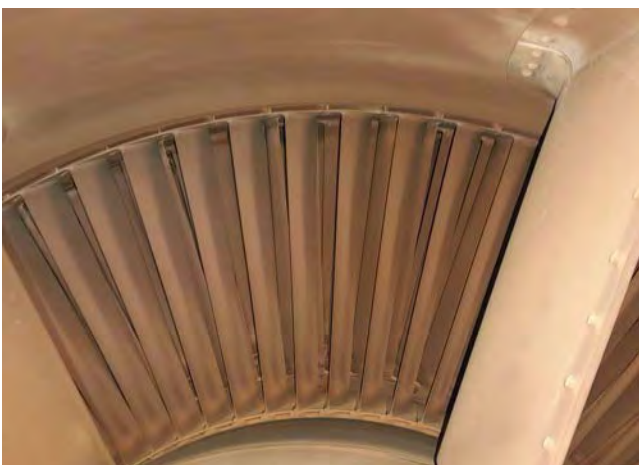
PT STG1 Rotor Blades



PT STG1 Blade



PT STG1 Blade



PT Exhaust



PT Exhaust



5.4. TMF INSPECTION



TMF INNER AND OUTER LINERS.



Inner liner rivets and struts.

