



OIL AND NATURAL GAS CORPORATION LTD.
Ankleshwar Asset, Engineering Services.
Ankleshwar – 393010,

No: ANK/ES/MECH/Maj OH/ST/CCPP/2015-16

Date: 20-07-2015

To whomsoever it may concern

This is to certify that the job of providing technical manpower with tools ,tackles and consumables for carrying out the 2nd Major Overhauling of BHEL make, 12 MW, Steam Turbine, Model: NK/40/56/20-3. Sr No: T-0417 at CCPP, Gandhar was awarded to M/s S V TURBO ENGG WORKS PVT LTD, Hyderabad vide NOA No: ANK/ES/MECH/Maj OH/ST/CCPP/11-12, Dtd 06-12-2011 for Rs 15, 60,000/-.

Broadly scope includes to provide required manpower with tools, tackles and consumables for carrying out the 2nd Major overhauling of Steam Turbine under the technical advisory services of OEM, M/s BHEL, Hyderabad. The S V Turbo has completed the job satisfactorily as per the scope of work of the contract.

20/7/15
Shyam Sundar Behera
C.E. (Mech.)
Engineering Service, MMG
ONGC, Ankleshwar-393010.

MAJOR OVERHAUL REPORT OF 12 MW STG AT CCPP, CPF, "ONGC LTD" – GANDHAR .
DURATION OF OVERHAUL: 13/11/2014 TO 31/03/2015

OBSERVATIONS AT SITE:-

1. Turbine rotor high axial shift occurs during increase of load.
2. Centering of Turbine and Alignment with gearbox got disturbed.
3. Turbine Rotor front journal having scoring marks.
4. Deep Scoring marks observed on active side pads of thrust bearing .
5. Heavy deposits of silica was observed on Turbine Rotor hp stage blades & steam path was almost blocked .
6. Severe erosion observed on top portion of LP stages of rotor blades.
7. Dents found on 16th stage of moving and guide blades.
8. Bottom B.P. gland fins, caulking wire was found in damaged condition.
9. Turbine Front and Rear oil gland radial clearances are high.
10. Servomotor pilot valve inlet flange helicoil found damaged and oil was observed.
11. Emergency Stop Valve oil seals damaged.
12. H.P Control valve spindles got severe worn-out.
13. Gland packing was found in damaged condition.
14. On Yoke , Spindle seating area (LEFT) deep metal erosion observed.
15. Turbine Hand-Barring mechanism not in operation.
16. Turning – Gear clutch lever was in broken condition.
17. Heavy deposits of Carbon/Dust in Generator Stator & Rotor.
18. P.M.G Coupling Bolts and Rubber Bushes found damaged.
19. Generator Front and Rear oil glands radial clearances are high.

ACTIVITIES CARRIED-OUT IN SITE :-

1. Turbine rotor was replaced with New Turbine Rotor.
2. Guide blade carriers are cleaned by Aluminium grit blasting.
3. Turbine Rotor (New) Centering was corrected with New Front & Rear Journal Bearings.
4. B.P Gland & Rear Steam Gland Fins were caucked and repaired at Ankleshwar.
5. Turbine and Generator Oil Glands Fins caucked and machined to maintain clearance.
6. Turbine Front and Rear journal bearings (NEW) blue matching done w.r.t Housing.
7. Thrust bearing Active & Non – Active pads are replaced and machined to maintain Thrust Float according to Turbine Rotor (NEW).
8. M.O.P Housing was permanently removed from its position and dummied at front.
9. Servomotor Pilot valve Inlet-flange aluminium brazing done in Ankleshwar. Also o-ring groove was made on Inlet Flange to avoid oil leak.
10. Emergency Stop Valve , Valve Cone lapping done.
11. E.S.V Hydraulic part seals replaced.
12. H.P Control valve Spindles (New) machining, drilling and reaming done and then assembled.
13. Control Valve Cones (04 No.s) lapping done.
14. Yoke metal eroded area welded and maintained parallelity.
15. Alignment of Turbine and gearbox adjusted and corrected.
16. Condenser Tubes, Lube-Oil Coolers and Generator Air Coolers cleaning carried out.
17. Pinion Hub was replaced with New in oil Bath method to suit with Turbine Rotor (New).
18. D.P Test for Load Gear-Box Journal Bearings & Thrust Pads Done and found ok.
19. Backlash and Gear teeth contact was checked and found ok.
20. Turning Gear Engage/Dis-Engage lever was welded carefully and bring into operation.
21. Generator Stator & Rotor Re-Varnishing was done.
22. All Electrical Tests was carried out on Generator Stator windings , Rotor and Exciter in presence of M/s B.H.E.L supervision.



- 23. Generator Front and Rear Journal Bearings replaced. Blue matching done to the same to suit with resp. Housings.
- 24. Gear-Box To Generator Alignment was corrected and maintained as per M/s B.H.E.L approved.
- 25. Exciter and P.M.G Alignment corrected.
- 26. Generator and Exciter Air Gap was maintained.

STATUS :-

After overhaul unit rolled on 28/03/2015 and loaded upto 10 MW on 04/04/2015.
Unit performance found satisfactory.
All the critical parameters and clearances were recorded and enclosed.

ONGC-CPF
GANDHAR

M. Behar
u/out/15
MM Behar

Behar
04/04/15
S. Behar

N. Smith
S.V. TURBO
HYDERABAD