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10.E / JM (6)

RECORD OF NOTES DISCUSSED AT BASL UNIT – II, NANJANGUD PLANT REGARDING THE 20 MW TG STEAMLEAKAGE RECTIFICATION JOB ON 15.07.2006

M/s BASL

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M/s BHEL HYDERABAD

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1. M/s BHEL Engineers reached BASL Unit – II site on 4th June' 2006 to attend the steam and leakage problems on the 20 MW turbine.

2. The over haul was carried out from 5th June' 2006 to 7th July' 2006
   a) Detailed over haul report enclosed.
   b) Alignment protocol enclosed.

3. The machine was re commissioned on 10th July' 2006.

   a) As the sugar plant crushing operation was not started, only idle mechanical run test carried out.

   b) Rolling started at 11.55 AM and maintained at rated speed until 5.30 PM.

   c) During this period machine performance checked. Found to be no oil leakages from the front and rear bearing housings and also no steam leakage from the parting plane.

   d) Machine stopped at 5.45 PM.

4. On 11th & 12th July attended to the minor problems observed during idle mechanical running.

5. On 12th July' 2006 sugar plant crushing operation started.

   a) 20 MW TG restarted on 13th July'2006 and loaded gradually up to 3.5 MW. (Only in house load).

   b) TG could not be synchronized to grid due to the non-availability of KPTCL clearances at the connected sub station.

6. On 13.07.06, while running with in-house load, at around 6.30 PM abnormal noise observed from the PMG coupling. Machine tripped manually. Inspection covers opened and found that

7 numbers of PMG coupling bolts got loosened and found lying in side the housing. Machine kept on bearing gear and allowed to cool down to attend the problem.

7. On 14.07.06 rectification jobs started from 2.0 PM

   a) Exciter opened & cleaned with air and petrol.

   b) Checked healthy ness of winding and rotating diodes. Found in good condition.

   c) Spacer ring of 5 mm added between PMG and exciter cover plate to get 7 mm of gap between the couplings as specified in the BHEL exciter assembly drawing.

   d) PMG coupling alignment carried out and new coupling bolts with bushes provided. All rectification jobs completed by 4.0 AM.

8. After completing the PMG coupling rectification jobs, machine restarted and synchronized with grid on 15.07.06 at 10.59 AM.

9. After synchronization, while raising the load turbine twice came to island mode, indicating the fault as grid frequency high. M/s BASL is studying the problem. In the mean time at around 3.08 PM machine tripped, indicating the fault as non-active thrust bearing temperature high (115 Deg. C) . At time of tripping, the other RTD element (2 TE 3400D) of the same bearing was indicating temperature as 63 Deg.C only. The RTD tag No 2 TE 3400 E which caused the tripping, had given a sudden variation in the out put. Considering above, the machine restarted back and synchronized with grid after by passing the 2 TE 3400 E. The RTD was found to be giving oscillating out puts in by passed condition. Temperature was showing up to 150 Deg.C. All the other RTDs were found to be healthy and giving stable out puts.

10. During the starting of every rolling of the machine, heavy vibrations observed from the HP control valve servomotor and its control oil lines. This phenomenon was persisting until TG speed is raised from 1000 RPM to further speed. This problem was there since from the date of commissioning the machine.

11. Performance of machine checked on 15.07.06 at a maximum load of 4.7 MW and found satisfactory at this load. However the performance of the machine is to be checked at full load. BASL informed that this is possible only after establishing sugar plant crushing to its full capacity, which is expected with in a couple of weeks. The same will be intimated to M/s BHEL Hyderabad.

M/s BASL

M. [illegible] 15.7.06

M/s BHEL HYDERABAD

(K.S.N. RAJU)