UNIT TRIPPING REPORT

UNIT No: 2 STATION: NTPL, TUTICORIN.

OUTAGE: NO. 17

REPORT NO: 17

1. Date of tripping : 03-03-2018
2. Time of tripping : 23:15:27 Hrs
3. Status before tripping
   a) Unit load : 480MW @ 19:30 Hrs
   b) Mills in service : A, C, D, E & F
   c) Oil guns in service : NIL
   d) Boiler feed pumps in service : TDBFP A&B
   e) CEPs in service : B&C
   f) ID fans in service : A&B
   g) FD fans in service : A&B
   h) PA fans in service : A&B
   i) CWP in service : A&B
4. First Up protection acted : Turbine was hand tripped
5. Similar occurrences in the Financial Year: Nil
6. Other relays/protection acted : Turbine trip/Generator trip/Boiler trip
7. Supporting documents attached : SOE & Trend
8. Any operation done prior to tripping : Load was reduced to 80 MW
9. Analysis of tripping :

   @18:00 Hrs, while the unit was in normal operation, ASLD-13 picked up a weak signal of about 3 Db and a difference of about 100 T/hr was noticed between Feed water and Steam flows. However, no audible noise or any other abnormalities could be detected during local inspection in that area. Drum level was also maintaining around (-)150 mm. No appreciable loading could be noticed in ID Fans. Average system make up found to have increased.

   @ 21:00 Hrs, after detailed inspection at local, it was decided to hand trip the unit to attend BTL @ 25 ML. Load was gradually reduced to 80 MW and turbine was hand tripped from Control Room. Generator got tripped on 'reverse power' and subsequently Boiler got tripped on 'SH-RH Conditions' since the HPBP didn't come into service.

10. Root cause :

    Front water wall tube no.20 from LHS was damaged due to steam erosion from WB 67, since its seal box sleeve was damaged and missing. The pin hole puncture in tube no.20 at 21 ML resulted in erosion thinning of three more tubes, viz. 21, 22 & 23 at the same level and location.

    The failure of tube no.20 @ 21 ML resulted in starvation of the same tube resulting in 'fish-mouth opening' @ 31 ML elevation. Tube nos. 21 to 25 were also affected by erosion from tube no. 20 @ the same level and location.

    ASLD in that area didn't pick up due to instrument cable fault.

11. Remedial measures taken/to be taken : See recommendations.

12. Time / Date of boiler light up and sync : Light Up: 11:52 Hrs on 06/03/2018
Sync'd : 17:50 Hrs on 06/03/2018.

13. Delay for light up : Other pending works were attended.

14. Recommendation / Action plan :

Sl.No.	Recommendations/Action plan	Responsibility	Time line
1)	After WB operation ensure complete closing of all poppet valves. Physically ensure @ local that steam passing noise dies out after closure of valves.	Operation	Immediate
2)	Periodically check ASLD for its healthiness.	Operation/C&I	Immediate
3)	Periodically conduct make-up tests for checking increase in system losses. Make up flow variations to be closely monitored.	Operation	Immediate
4)	Periodically carry out local visits around boiler furnace area for any abnormalities.	Operation/BM	Immediate

15. Any specific learning / feedback : WB steam leak leads to tube erosion and has a cascading effect leading to further tube failures. Monitor make-up flow for early detection of leaks. Maintain ASLD healthiness for an early alarm. Frequent local visits around furnace is emphasized.

16. Signatures / Date :

CM / OS DGM / C&I DGM / ELECT DGM / O&C

GM / O&M

Copy submitted to CEO / NTPL