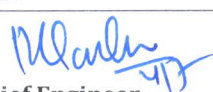


# EVENT ANALYSIS REPORT

|  |                       |                        |                   |                                       |
|--|-----------------------|------------------------|-------------------|---------------------------------------|
| UNIT NO : 03   | TPS : Khaperkheda TPS | Unit Capacity : 210 MW |                   |                                       |
| 1. *HO Code :  | Station Code : T003   | Time -18:02 Hrs        | Date - 15/06/2017 | No. of days from last sync. : 19 days |
| 2. Operating conditions at the time of Event :-  |                       |                        |                   |                                       |
| Load   |                       | Coal Cycles in service |                   | Oil Support                           |
| 90MW   |                       | A, B, C & D            |                   | Nil                                   |
| 3. Nature of Event: TA set withdrawn due to boiler tube leakage in Steam cooled wall zone.   |                       |                        |                   |                                       |
| 4. Name of First Up , Main Protections & Protection on which GCB tripped :<br>Hand Tripped(First Up), MFT Operated, Turbine Trip Gear Operated, Turbine Tripped.   |                       |                        |                   |                                       |
| 5A) Observations: On dt. 15/06/2017 at 17:00 hrs, set was on load at 140MW with five coal cycles in service (F-standby) and no oil support. Considerable variation in feed flow was observed, with abnormal sound at 45 mt. level. Drum level found dropping and DM make-up found increased. After confirmation of boiler tube leakage in steam cooled wall zone, load reduced gradually by withdrawing coal cycle 'E' at 17.50 hrs. Set hand tripped at 18:02 hrs when the load was 90 MW with four coal cycles in service. |                       |                        |                   |                                       |
| 5B) Remedial Action/work done: <u>Primary Failure</u> – RHS Steam cooled wall tube no.2 found punctured at 46 mtr. level.<br><u>Secondary Failure</u> –<br>1) RHS steam cooled wall tube no.3 found punctured and tube no.1 & 4 found eroded.<br>2) SH screen tube no.97 & 98 found punctured and tube no. 96, 95 & 94 found eroded.<br><u>Work carried out</u> -<br>(1) Replacement of SCW tube no.1, 2, 3 & 4.<br>(2) Replacement of Super heater screen tube no. 94, 95, 96, 97 & 98. (Total HP weld Joints = 20 Nos.)    |                       |                        |                   |                                       |
| 6. Root Cause Analysis: Thermal stress rupture is the root cause of failure of RHS tube no.2 of steam cooled wall as the tube was found bend and punctured.  |                       |                        |                   |                                       |
| 7. Preventive action suggested (Short Term) :  |                       |                        |                   |                                       |
| 8. Preventive action suggested (Long Term) :<br>(1) Checking of furnace expansion towards chimney during available opportunity.<br>(2) Strengthening of stub joints of RHS & LHS tubes during AOH.<br>(3) DP Test of stub joints of SCW during available opportunity.  |                       |                        |                   |                                       |
| 9. Similar event occurred last time:-  | Unit No #3 , 210 MW   | Time : 17:49 Hrs       | Date: 28/06/2015  |                                       |
| Event: T.A. Set withdrawn for attending Boiler Tube Leakage at Steam Cooled Water Wall Zone.<br>Remedial Action / work done :<br>BM : Replacement of damaged & eroded tubes & bend of Stun No. 1 & 2.<br>Primary Failure : Steam Cooled Water wall Inlet Header SHH4 to SHH5 connecting elbow at Corner No.4, Stub No.1 found punctured.<br>Secondary Failure: Steam Cooled Water wall Inlet Header SHH4 to SHH5 connecting elbow at Corner No.4, Stub No.2 found eroded.. Total no of HP weld joints: 06 Nos                |                       |                        |                   |                                       |
| 9A. Implementation Status of Long Term/Short Term measures stated at Sr No 7&8:-   |                       |                        |                   |                                       |
| 10. Boiler lighted up  | Time - 14:20Hrs       | Date- 17/06/2017       |                   |                                       |
| 11. T-A Set Synchronized   | Time -18:42Hrs        | Date-17/06/2017        |                   |                                       |
| 12. Remark:  |                       |                        |                   |                                       |
| <br>Chief Engineer  |                       |                        |                   |                                       |
| 13. Recommendations of Works Section:  |                       |                        |                   |                                       |
| 1. Procurement/Replacement Plan:   |                       |                        |                   |                                       |
| 2. Operational Error:  |                       |                        |                   |                                       |
| 3. Delay in Maintenance:   |                       |                        |                   |                                       |
| 4. Delay in bringing back the Unit:  |                       |                        |                   |                                       |
| 5. Training of Staff:  |                       |                        |                   |                                       |
| 6. Whether remedial action is completed satisfactory & point is closed:  |                       |                        |                   |                                       |
| C E/Dy C E (Works)   |                       |                        |                   |                                       |