EVENT ANALYSIS REPORT

UNIT NO : 03	TPS : Khaperkheda TPS		Unit Capacity : 210 MW	
1. *HO Code :	Station Code : T003	Time – 07:09 Hrs	Date - 11/02/2017	No. of days from last sync. : 6 days

2. Operating conditions at the time of Event :-

Load	Coal Cycles in service	Oil Support
100 MW	A, B & C	NIL

3. Nature of Event : TA set forced withdrawn due to boiler tube leakage at steam cooled wall zone.

4. Name of First Up , Main Protections & Protection on which GCB tripped :
Hand Tripped (First Up), MFT) Operated, Turbine Tripped, Generator Class A Tripped.

5 A) Observations : On dt. 11/02/2017 at 06:00 hrs. set was on load at 187 MW with coal mills - A, B, C, D & F in service (E - Stand by). Abnormal sound was observed in corner no.2 at 30 mtrs. level. DM make-up found increased due to boiler tube leakage. Load was reduced by withdrawing coal cycle – D & F and finally set was withdrawn when load was 100 MW with A, B & C coal cycles in service. GCB opened on Reverse Power Protection.

5 B) Remedial Action/work done :

Primary Failure – Steam cooled wall inlet header SHH-4A to SHH8 connecting elbow tube no.1 at corner no. 2 found punctured.

Secondary Failure –

1) Rear steam cooled wall inlet header SHH8 tube no.1 & 2 found punctured.
2) LHS steam cooed wall inlet header SHH4 tube no. 1 found punctured and tube no. 2 found eroded.

Work carried out -

1) Replacement of steam cooled wall inlet header SHH 4A to SHH8 connecting elbow tube no.1, carried out.
2) Replacement of rear steam cooled wall inlet header SHH8 tube no. 1 & 2, carried out.
3) Replacement of LHS steam cooled wall inlet header SHH4 tube no. 1 & 2, carried out.

Total No. of HP welded Joints – 11 Nos.

6. Root Cause Analysis : Thermal stress rupture due to pulsating load variation and cyclic loading & unloading which resulted into laminar cracks.

7. Preventive action suggested (Short Term) :

(1) Steam cooled wall inlet header stubs & tubes with casing scalloped bar 8 nos. at each corner (Total 64 nos. of all corners) strengthening done.
(2) DP test of rear SCW inlet header SHH8, Front SCW inlet header SHH5, LHS & RHS SCW inlet header SHH4-4A, LTSH inlet header SHH9, Economiser intermediate header EH 2A, EH 2B & EH 2C is carried out.
(3) Tube thickness survey of steam cooled wall inlet header is carried out.

8. Preventive action suggested (Long Term) :-

(1) The heat flow pattern will be checked during AOH.
(2) Ultrasonic test of stub joints of SHH8 and SHH4 connecting elbow will be carried out during AOH of Unit-3.

9. Similar event occurred last time:-	Unit No # 3 , 210 MW	Time : 20:37 Hrs	Date: 16/10/2015

Event: T.A. Set withdrawn for attending Boiler Tube Leakage at Steam Cooled Water Wall Zone.
Remedial Action / work done : Replacement of eroded and punctured tubes and bends of centre stub No.2 of connecting elbow of steam cooled water wall inlet header SHH4 to SHH5, stub No.1 of bent steam cooled water wall header SHH5 & stub No. 1 & 2 of LHS steam cooled water wall header SHH4.

9A. Implementation Status of Long Term/Short Term measures stated at Sr No 7 & 8:-

10. Boiler lighted up	Time – 12:30 Hrs	Date - 12/02/2017
11. T-A Set Synchronized	Time – 16:34 Hrs	Date - 12/02/2017

12. Remark :

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)