EVENT ANALYSIS REPORT

UNIT NO : 04	TPS : Khaperkheda TPS		Unit Capacity : 210 MW
1. *HO Code :	Station Code : T003	Time – 14:14 Hrs	Date - 16/04/2017	No. of days from last sync. : 21 days

2. Operating conditions at the time of Event :-

Load	Coal Cycles in service	Oil Support
96 MW	B & C	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 Nature of Event : TA set withdrawn due to boiler tube leakage in steam cooled wall zone.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 :
Furnace Pressure Very High (First Up), Turbine Tripped, Gen. Protection Operated, Gen. Class-A Trip, MFT Acted.

5 A) Observations : On dt. 16/04/2017 at 13:00 hrs, set was on load at 187 MW with five coal mills in service and no oil support. Coal mill-E was standby. Boiler tube leakage sound was noticed at 33.8 meters level near LRSB No.82. DM make up found increased to 61 TPH. Flue gas temperature after economiser found dropped from 351 to 280 degree celsius. After confirming boiler tube leakage, load reduced gradually by withdrawing coal cycles one by one. Boiler tripped on 'Furnace Pressure Very High' protection when the load was 96 MW with coal cycle - B & C in service. This ultimately resulted in tripping of unit. GCB opened on Reverse Power Protection.

5 B) Remedial Action/work done :
Primary Failure - SCW inlet header SHH5 to SHH4A connecting centre offset bend at corner no.1 found punctured
Secondary failure - (1) SCW inlet header SHH5 tube no.1 found punctured.
(2) SCW inlet header SHH4A tube no.1 found punctured.

Work carried out :
(1) Replacement of steam cooled wall inlet header SHH5 to SHH4A connecting center offset bend at corner no.1.
(2) Replacement of SCW inlet header SHH 5 tube No.1.
(3) Replacement of SCW Inlet header SHH 4A tube No.1 **(Total No. of HP weld Joints = 09 Nos.)**

6. Root Cause Analysis : Thermal fatigue is the root cause of failure of steam cooled wall inlet header SHH5 to SHH4A connecting center offset bend.

7. Preventive action suggested (Short Term) :

8. Preventive action suggested (Long Term) : Dimensional measurement, Hardness measurement and Ultrasonic test of SHH4A to SHH5 will be carried out during forthcoming overhaul (July-17) of Unit-4.
DP test of stub joints of SHH5 to SHH4A will be carried out during forthcoming overhaul (July-17) of Unit-4.

9. Similar event occurred last time :	Unit No # 4 , 210 MW	Time : 15:38 Hrs	Date : 19/11/2016

Event : T. A. set forced withdrawn due to boiler tube leakage at RHS extended steam cooled walls.
Remedial Actions :
1) Replacement of SH screen tube No.97 & 98.
2) Replacement of RHS Extended SCW tube No. 1, 2, 3, 4 & 5.
3) Replacement of RHS SCW tube no.1&2. **Total No. of HP weld joints = 20 Nos.**

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

10. Boiler lighted up	Time – 23:50 Hrs	Date - 17/04/2017
11. T-A Set Synchronized	Time – 05:17 Hrs	Date - 18/04/2017

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)