EVENT ANALYSIS REPORT

UNIT NO : 04	**TPS : Khaperkheda TPS**		**Unit Capacity : 210 MW**	
1. *HO Code :	**Station Code : T003**	**Time** –08:47 Hrs	**Date** - 03/11/2016	**No. of days from last sync. :** 19 days

2. Operating conditions at the time of Event :-

Load	Coal Cycles in service	Oil Support
97 MW	C & D	NIL

3. Nature of Event : T. A. set forced withdrawn (hand tripped) due to boiler tube leakage at steam cooled walls.

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

5 A) Observations : On dt. 03/11/16 at 13:00 hrs, set was on load at 190 MW with five coal cycles in service (F - S/by) and no oil support. The furnace draft went on positive side and drum level was also found dropping to low level. DM make up found increased to 80 TPH. After confirmation of boiler tube leakage, coal mills were withdrawn one by one for reducing load in order to withdraw the set. Finally, set was withdrawn at 13:49 Hrs. when the load was 97 MW with coal cycle - C & D in service. GCB opened on Reverse Power Protection.

5 B) Remedial Action/work done : Primary Failure – Super heater screen tube No.1found punctured.

Secondary failure –

1) Super heater screen tube No. 2 found punctured near stub at SHH-7 header.
2) LHS Extended SCW tube No. 1 & 2 found punctured and tube No. 3 found eroded.
3) LHS SCW tube No.1 found punctured & tube No. 2 found eroded.

Work Carried Out –

1) Replacement of SH screen tube No.1 & 2.
2) Replacement of LHS Extended SCW tube No. 1, 2 & 3.
3) Replacement of LHS SCW tube No. 1 & 2. Total No. of HP weld joints = 19 Nos. (18 HP joints + 01 stub joint)

6. Root Cause Analysis : Stress rupture due to uneven load variation is the root cause of failure of tube No.1 of Super Heater screen (Fish mouth opened).

7. Preventive action suggested (Short Term) :

8. Preventive action suggested (Long Term) : Visual inspection, Dimensional measurement, Replication test, Fibroscopic inspection, Hardness measurement, Ultrasonic test & MPI test of stub joints will be carried out at super heater SHH7 header during forthcoming COH of unit No.4. Dye penetrant test of joints of SH screen tubes stub joints will also be done during forthcoming overhaul.

9. Similar event occurred last time:	**Unit No # 4 , 210 MW**	**Time:** 02:04 hrs	**Date:** 01/06/2014

Event : T.A. withdrawn to attend "Boiler Tube Leakage" at 'LTSH Zone'.

Remedial Actions :

1. Replacement of LTSH Coil No. 120 of Tube No. 5, 6, 7, 8,9,10 & 11.
2. Replacement of LTSH Coil No. 119 of Tube No. 5, 6, 7, 8, 9 & 10.
3. Replacement of LTSH Coil No. 118 of Tube No. 4, 5, 6, 7 & 8.
4. Replacement of LTSH Coil No. 117 of Tube No. 5, 6, 7, 8 & 9.
5. Replacement of LTSH Coil No. 116 of Tube No. 7, 8,9,10 & 11.
6. Replacement of LTSH Coil No. 115 of Tube No. 10 & 11.

Total No. of HP Weld Joints = 137 Nos. (62 Repair Joint + 75 End Connection Joint)

9A. Implementation Status of Long Term/Short Term measures stated at Sr No 7 & 8 : Dye penetrant test of joints of S.H. screen tubes stub joints will be done during forthcoming AOH.

10. Boiler lighted up	**Time** – 21:18Hrs	**Date** - 04/11/2016
11. T-A Set Synchronized	**Time** – 05:18 Hrs	**Date** - 05/11/2016

12. Remark :

R 29/11

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)