


EVENT ANALYSIS REPORT				
UNIT NO : 02	TPS : Khaperkheda TPS		Unit Capacity : 210 MW	
1. *HO Code :	Station Code : T003	Time - 10:07Hrs	Date - 13/04/2016	No. of days from last sync. : 109 days
2. Operating conditions at the time of Event :-				
Load		Coal Cycles in service		Oil Support
69 MW		C		AB-1*AB-4
3. Nature of Event : Set withdrawn (hand tripped) for extension of boiler validity and ID fan A brg. Work.				
4. Name of First Up , Main Protections & Protection on which GCB tripped : Gen. Protection Operated, Manual Turbine Trip, Protection PT Fuse Fail, Generator Reverse Power Relay Operated.				
5A) Observations. On date 13/04/2016 at 10:07 Hrs set was forced withdrawn due to ID fan problem, when the load was 69 MW with coal mill C in service and oil support at AB (1,4) elevation.				
5B) Remedial Action/Work done: ID fan 2A DE bearing replaced. NDE bearing clearances checked. Coupling brushes replaced. Fan casing leakages attended. For extension of boiler validity statutory hydraulic test carried out in presence of Joint Director of Steam Boiler, Nagpur at 201.88 Kg/cm <sup>2</sup> and found satisfactory.				
6. Root Cause Analysis: At 09:37 hrs on Dt. 13/04/2016 ID Fan-2A tripped due to bearing temperature very high (Fan DE). Also, boiler validity of Unit-2 was expiring on 16/04/16 and needed to be extended further.				
7. Preventive action suggested (Short Term) :-				
8. Preventive action suggested (Long Term) :-				
9. Similar event occurred last time:-		Unit No # 2 , 210 MW	Time : 05:08 Hrs	Date 10/05/2014
Event : T.A. Set withdrawn due to ID Fan-2A tripped on DE Bearing Temp. very High. Remedial Actions : <u>EM</u> : ID Fan Motor A & B Seal Air Fan Motor A, B, C Preventive Maint. were carried out. <u>BM</u> : ID Fan 2A Internal Inspection done. DE & NDE bearing inspected. <ul style="list-style-type: none"> <li>DE Bearing replaced as it was found damaged.</li> </ul> NDE Bearing found OK. All allied work carried out & trial found OK.				
9A. Implementation Status of Long Term/Short Term measures stated at Sr. No 7 & 8 :-				
10. Boiler lighted up		Time - 18:38 Hrs	Date - 15/04/2016	
11. T-A Set Synchronized		Time - 23:29 Hrs	Date - 15/04/2016	
12. Remark :- Furnace second pass water washing done. Both AHs water washing done. Seal trough leakages attended. A sheet showing details of work attached herewith.				
 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)				

## **Unit # 2 Short Shut down Report ( dtd.13/04/2016 to 15/04/2016 )**

Unit 2 boiler MR No. 11614 was withdrawn on dated 13/04/2016 at 10:07 Hrs. for ID fan & boiler recertification. Statutory hydraulic test was carried out in presence of Joint Director of Steam Boiler, Nagpur on Dtd. 14/04/2016 & found satisfactory. The unit was lighted up on Dtd. 15/04/2016 at 18:38 Hrs. and synchronized on Dtd. 15/04/2016 at 23:29hrs.

### **Furnace**

1. Furnace first pass and second pass door open for forced cooling of boiler.
2. After sufficient cooling furnace pressurization test carried out and observation are as follows.
  - Flue gas leakages observed in cat house front and rear side.
  - Wind box top LHS & RHS side water washing done. At corner no. 1,2,3 & 4 LHS & RHS top portion corner leakages attended by welding and refractory 6 bags provided.
3. Above flue gas leakages attended by welding work and pouring of refractory.
4. Furnace first pass neck scaffoldings done.
5. Furnace second pass water washing completed and second pass inspection carried out found OK.
6. Departmental Boiler hydraulic test taken at 200 kg / cm<sup>2</sup> at 12:30 Hrs. Dtd. 14/04/2016 & found satisfactory.
7. Statutory hydraulic test carried out in presence of Joint Director of Steam Boiler, Nagpur at 201.88 kg / cm<sup>2</sup> at 17:50 Hrs on Dtd. 14/04/2016 & found satisfactory.
8. All men and material are removed all man hole door closed as a clearance given for boiler light up at 17:28 Hrs. on dtd. 15/04/2016.

### **Burner Tilt**

#### **A) Burner tilt / wind box.**

- a. Wind box corner 1, 3 & 4 top insulation removed after LHS + RHS water washing corner leakages attended and refractory provided.
- b. Wind box corner 2 & 3 bottom end air tip side panel opened and corner leakages attended and boxed up.
- c. LHS & RHS wind box ash removed.
- d. EF1 & DE 2, scanner guide pipe cleaned.
- e. CD2 & CDD 4 igniter guide assembly cleaned.
- f. BTPC corner no. 4 decoupled. After power cylinder servicing work again coupled and tilt trial taken and found normal.
- g. Oil the old guns cleaned. 4 nos. of oil gun front end assembly replaced and 4 Nos. oil gun mixing chamber replaced.

### **Air Preheater 2A & 2B**

1. APH 2A & 2B, washing done. HE manhole doors & FD discharge duct during opened.



2. Both APH Internal inspection done.
3. Both APH drive unit checked, fluid coupling oil level checked & found normal. GB & drive unit cleaned.
4. Both APH flue gas side damaged by pass seal removed. Damaged bypass seal holding angle 04 Nos. replaced by new and gas side all the bypass replaced by new and setting done.
5. APH 2A & 2B, damaged HE radial seal 36 Nos. replaced by new and other seals resetting done.
6. Rotor angle patching done 09 Nos.
7. APH 2A, slant portion leakage attended by patch welding.
8. Both APH HE back side casing patching done and leakages attended.
9. Water washing header 2 Nos. patching done and leakages attended.

#### **BOTTOM ASH HOPPERS**

1. B.A. hopper made empty and hopper cleaned. After opening man hole doors, scaffolding erection done in both side.
2. All the damaged bend seal through wire mesh removed and replaced by new.
3. RCW header shrouding replaced.
4. After completion of internal repair refractory casting done.
5. All the flushing nozzles cleaned and all the headers trial taken one by one.
6. Seal through cleaned and corner leakage attending by welding.
7. Seal through wire mesh fitting done all the damaged mesh and holding bolts replaced by new.
8. Scaffolding and scrap material removed hopper cleaned.
9. B.A. hopper seal through stiffeners welding done.
10. Seal through & B.A. hopper filled and trial taken. Trial found normal.

#### **LP, HP valves**


1. Auxiliary steam drain line valve of corner 4 replaced by new "1" globe valve 800 Class.
2. OS 27 isolating valve servicing done and flange gasket replaced.

#### **Duct**

- a. APH out let to ESP inlet duct inspection done.
- b. Duct "C" back side casing patching done and leakages attended.

#### **ID fan**

- a. ID fan 2A DE bearing replaced. NDE bearing clearance checked. Coupling bushes replaced. Fan casing leakages attended.

  
**Executive Engineer (BM-I)**