UNIT TRIPPING REPORT

UNIT No: 1 STATION: NTPL, TUTICORIN.

OUTAGE NO: 86

REPORT NO: 86

1.Date of tripping : 28-04-2024

2.Time of tripping : 09:53Hrs

3.Status before tripping

a) Unit load : 288MW

b) Mills in service : C, D, E, G & H

c) Oil guns in service : 3 HFO oil guns at CD Elevation

d) Boiler feed pumps in service : TDBFP A &B

e) CEPs in service : A & B

f) ID fans in service : A & B

g) FD fans in service : A & B

h) PA fans in service : A & B

i) CWP in service : A & B

4.First Up protection acted : Boiler tripped on drum level high

5.Other relays/protection acted : Turbine & Generator tripped on MFT.

6.Supporting documents attached : S.O.E & Trends

7.Any operation done prior to tripping : Nil

8.Analysis of tripping :

Unit was running at 288 MW in CMC. At 9:38 hrs PA FAN-B Current increased to 250A and both PCD demand reduced from 43% to 20%. On observation it was found that PA-B PCD got fully opened. at 9.45 hrs CD elevation 3 HFO oil guns were taken. 9:49 hrs Mill-H was stopped to reduce PA Flow. PA-A PCD opened to 84% to support PA header pressure while stopping PA Fan-B. PA-B O/L gate was closed to 50% and PA Fan-B stopped at 9:51hrs. PA header and Furness pressure fluctuated and drum level was 21mmwc at 9:52:30 hrs, high alarm (+150mm) came at 9:52:58hrs. Drum Level high (+250mmwc) acted at 9:53:06 hrs and MFT acted and unit tripped.

9. Root cause :

Atmospheric ash has contaminated the PA Fan Lube oil, which has accumulated in the Hydraulic Adjustment Device (HAD) internals. This has led to failure of HAD internals and PCD opened 100% & became Inoperative to the command.

10. Remedial measures taken/to be taken:

Fugitive ash leakages in and around the fan area to be minimized. During Opportunity (shutdowns) HAD to be inspected. Lube oil quality (NAS &TAN value) to be analysed.

11. Time/Date of boiler light up and sync:

Light Up: : 10:12 Hrs on 28/04/2024

Sync'd: : 14:54 Hrs on 28/04/2024

12. Delay for Synchronization : LSR acted during trip but not getting reset while resetting turbine. Due to this Turbine tripped while synchronization @11:53 hrs & @12:37 hrs. LSR bypassed and synchronized at 14:54 hrs

13. Recommendation / Action plan :

i) SOP to be reviewed in detail for stoppage of PA Fan in case of failure/in operation of HAD.

ii) In case of stoppage of fully loaded PA fan unit load shall be reduced 200 MW with oil gun support & with 3 mill condition.

iii) The O/L gate of PA Fan to be stopped may be closed to 80% before stopping the fan.

iv) Lube oil analysis NAS, TAN value to be checked.

v) LSR relay healthiness to be checked in next opportunity.

14. Any specific learning / feedback :

i) Similar failure of PA Fan HAD & stoppage of PA Fan to be studied in other NTPC or similar units

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DCE / C&I

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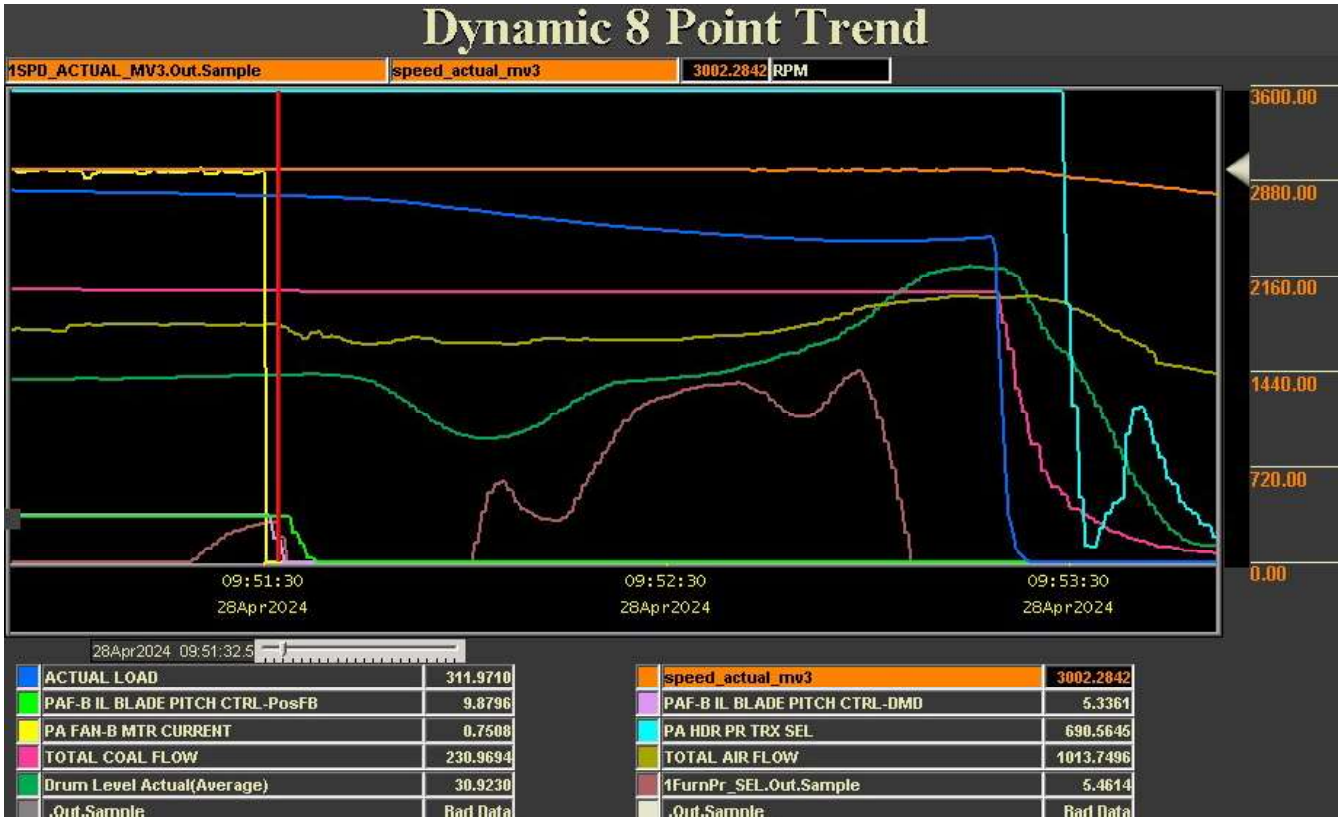
Dynamic 8 Point Trend
1SPD_ACTUAL_MV3.Out.Sample
speed_actual_mv3
3002.2842
RPM
3600.00
2880.00
2160.00
1440.00
720.00
0.00
09:51:30
28Apr2024
09:52:30
28Apr2024
09:53:30
28Apr2024
28Apr2024 09:51:32.5
ACTUAL LOAD 311.9710
PAF-B IL BLADE PITCH CTRL-PosFB 9.8796
PA FAN-B MTR CURRENT 0.7508
TOTAL COAL FLOW 230.9694
Drum Level Actual(Average) 30.9230
.Out.Sample Bad Data
speed_actual_mv3 3002.2842
PAF-B IL BLADE PITCH CTRL-DMD 5.3361
PA HDR PR TRX SEL 690.5645
TOTAL AIR FLOW 1013.7496
1FurnPr_SEL.Out.Sample 5.4614
.Out.Sample Bad Data