UNIT TRIPPING REPORT

UNIT No: 1 STATION: NTPL,
TUTICORIN.

OUTAGE: NO.56

REPORT NO: 56

1.Date of tripping : 22-02-2021
2.Time of tripping : 06:50:54 Hrs
3.Status before tripping
a) Unit load : 500 MW
b) Mills in service : A, B, D, E, F & G
c) Oil guns in service : Nil
d) Boiler feed pumps in service : TDBFP A &B
e) CEPs in service : B & C
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 : Generator got tripped on "Low Forward Power Protection"
5.Similar occurrences in the Financial Year : Nil
6.Other relays/protection acted : Turbine tripped_TO pr < 2 Ksc
Boiler tripped on Drum level low
7.Supporting documents attached : S.O.E & Trends
8.Any operation done prior to tripping : Nil
9.Analysis of tripping :

HPCF Pump-2 tripped on Under Voltage Protection @ 06:50:48 hrs due to some transient disturbance in the Y-phase relay. Immediately at 06:50:49 HPCF pump-1 which was in standby mode started in auto on electrical interlock. The control fluid pressure buckling during the changeover period resulted in Trip Oil dip from 9.6 ksc to 2.3 ksc. All turbine stop valves and governing valves got closed due to the "Low Trip Oil Pressure" resulting in generator trip on low forward power.

10.Root cause (9+6) :

A total of 15 numbers of Pressure Accumulators are provided in the HP and LP lines of governing control fluid in order to absorb short term pressure buckling during HPCF pump changeovers. In Unit#1, 8 nos (7 HP & 1 LP) of accumulators were in isolated condition which was an inadequate backup support for the pressurised CF system. Reserve HPCF starting on electrical interlocking and take over was normal except for the accumulator pressure backup support. Very low TO pressure during the HPCF pumps change over led to closure of all stop valves and control valves resulting in unit trip on low forward power.

MDBFP got started on Turbine trip but boiler could not be saved from drum level protection trip even though run back sequence acted.

11.Remedial measures taken/to be taken:

Two of the HP accumulators were taken into service after attending seal leaks and pressure buckling was tested during HPCF change overs. It was found that TO pressure dip could be limited to above 5.0 ksc during both the change overs. Later on Boiler was lighted up at 12:28 hrs and the unit was synchronized at 13:56 hrs. Remaining one LP accumulator line welding crack was attended on line and was also taken into service. Five more accumulators on HP side in the Oil Canal below 17.5 ML were checked and N_2 pressures corrected and they will also be taken into service soon gradually.

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

Light Up: : 12:28 Hrs on 22-02-2021

Sync'd: : 13:56 Hrs on 22-02-2021

13.Delay for light up : Accumulator repairs for 4 hrs.

14.Recommendation / Action plan :

Sl.No.	Recommendations/Action plan	Responsibility	Time line
1)	All N_2 accumulators in the HPCF system are to be made ready and taken into service. A PM schedule to be made for periodic online checking of N_2 pressures.	TM-1	In a phased manner (in one month).

15.Any specific learning / feedback :

Healthiness of low voltage protection relays to be checked periodically by EM1. All HPCF system accumulators healthiness to be checked and corrected periodically by TM1. Inadequacy of MDBFP to support drum level during turbine runback from full load has to be studied in detail.

ADGM / OS DGM/EEMG ADGM / C&I DGM / ELECT

GM / O&C

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