Receipt No : 363305/2023/10004060

UNIT TRIPPING REPORT

UNIT No: 2 STATION: NTPL, TUTICORIN.

OUTAGE: NO.73

REPORT NO: 73

1.Date of tripping :17-04-2023

2.Time of tripping : 15:40Hrs

3.Status before tripping

a) Unit load :500MW

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

c) Oil guns in service : Nil

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

e) CEPs in service : A & 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 : B & C

4.First Up protection acted : Boiler trip on furnace pressure very low

5.Other relays/protection acted : Low forward Power.

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

7.Any operation done prior to tripping : nil

8.Analysis of tripping :

Unit was running at 500 MW in CMC. Suddenly one FD, PA, ID Channels, mills got tripped which resulted in negative furnace pressure and tripping the boiler on furnace pressure very low. 0BB the station bus was under LC for checking the healthiness. During the process, a flashover occurred on the bus while a technician was cleaning the back panel and resulted in tripping of equipment's in 2BA Bus and tripping of unit 2.

CW pump 1-C has two source of supply 1) from 0BB and 2) from 2BA.

CW 1C was in service with the supply source from 2BA as CW-2A was stopped to attend leak in gland sealing. As the CW-C was running the back panel of CW-1C in 0BB was live. So working on this bus created the flash over and tripping of equipment's in 2BA bus and 2BA bus on over current.

9.Root cause:

- At 10:05Hrs ,0BB bus incomer tripped as a fault in **DMWTP feeder 1** in 0BB panel 6 caused flash over in 0BB bus near **ASH Water & SILO transformer 1** in panel 11.
- As the incomer tripped, Live load in the bus tripped except for ASH handling transformer 1 in Panel 8 and SILO transformer.

- ASH handling Transformer and SILO transformer which did not trip were tripp
- **LC was issued to EM for 0BB station bus inspection work at 1035hrs.** For th LC, **No isolation was requested**. It was mentioned in LC that in case any isolation required will be done by self. This LC was issued through LC book as SAP was not working at the time.
- Meantime LC was requested by TM on CW-2A for attending gland leak**. CW-1C pump was started at 1050hrs on 2BA bus and CW-2A was stopped @ 1055hrs** and LC was issued to TM for CW-2A at 11030hrs

- Later when SAP was normalised, **another LC was requested for BUS healthiness checking @14:34Hrs for the OBB bus.** HT isolation and Control supply isolation was requested for this LC.
- LC was issued after the following isolations
  a. Incomer was racked out and LOTO was provided.
  b. Unit bus to Station tie in 2BA bus was racked out and LOTO was provided.
  c. Station to Station tie in 0BD was tripped, racked out and LOTO was provided.
  d. Line PT, Bus PT, CW-1C, 0DB sec A Station transformer, DMWTP feeder1, Fly ash transformer breakers were racked out.
  e. ASH handling Transformer and SILO transformer which did not trip were tripped and racked out.
  f. Control supply and DC supply to the Bus were isolated.
- While working on this bus, back panel was opened for bus bar and panel cleaning work, during which a flashover occurred. This caused Overcurrent in 2BA bus.

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

Light Up:	: 00:02 Hrs on 18/04/2023
Sync'd:	: 02:47 Hrs on 18/04/2023

11. Delay for light up : FD fan B discharge gate stuck-up.

12. Reason for light up delay:

FD fan B Discharge gate got opened partly (30%) and stuck up at that position, the motor for valve operation failed and its contactors burned. After replacing with new motor and contactors, lubrication of the gate mechanism done to free the gate resulted in a time delay.

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13. Recommendation / Action plan :

a. Information of two sources has to be marked on the panel particularly in the cover of cable termination / bus bar entry chamber as well as equipment and to be updated in relevant drawings.
b. SOPs for different nature of work are to be developed for special work which are site & equipment specific.
c. Sensitizing of operators, LC Holder in isolation procedures / requirements are to be carried out before issuing LC.
d. Isolations done for LCs may be crosschecked by the issuing authority like switchgear Trouble, Breaker not in service indications in DCS for better safety.
e. Isolation requirements & nature of work are to be mentioned clearly in LC like name & source of supply feeding switchgears and also isolation of any looping supply arrangements etc. since the isolation requirements depend on the working area / nature of work planned.
f. The person received LC also has to check for proper isolations and LOTO availability for the works which are critical in nature.
g. Suitable PPE's to be ensured by Supervisor of the contract.
h. Discharge rod (Earthing) to be provided and should be available till the completion of work in all phases of bus.
i. Tool box talk shall be carried out before commencement of work and workmen's suggestion to be considered.
j. Every 11 KV maintenance activity has to be carried out under the supervision of a "C" license holder.

EE / OS	ACM/BOS	DGM/EM2 15/05/2023
DGM / C&I 15/5/23	DGM / OS 15/5/23	DGM/EEMG 15/05/23

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Submitted to CEO
S. S. 20/5-23