

TRIP ANALYSIS REPORT

TRIP ANALYSIS REPORT /TAR-09/ UNIT 1 / 11.05.2017

Dt. 14-05-17

OCCURRENCE:

- (a) **Condition:** Load: 388 MW in LP mode and coal flow 209 tph with 6 Mills at 21:28 hrs. on 11.05.17.
- (b) **Incident:** OBA breaker tripped due to flash over in the BUS. In turn, UNIT 11KV BUS 1 BA bus became dead. Unit tripped on MFT (both ID Fans Off) at 21:29:52.9 hrs on 11.05.2017.

SOE OF DDCMIS ALARM PAGES:

TIME	DESCRIPTION	STATUS
21:29:50	LPBP Regen Ckt. Pump	MCC Disturbed
21:29:50	LPBP CFP 1	MCC Disturbed
21:29:50	Fan in Cool Ckt1	MCC Disturbed
21:29:50	AH-A GB LOP B Tripped	True
21:29:50	BFPDT-B OVEFan-A	MCC Disturbed
21:29:50	BFPDT-1A JOP 1DG-8RA	MCC Disturbed
21:29:50	PAF-A Tripped	True
21:29:50	Both SAF Off	True
21:29:50	AH-A SB Lops Off & Oil Tmp Hi	True
21:29:50	AH-A GU Lops Off & Oil Tmp Hi	True
21:29:50	IDF-1A LOP B 1DG-10FE	Local Start N Permit
21:29:50	BFP-C AOP 1DG-9RE	MCC Disturbed
21:29:50	IDF-1B LOP-A ESP1 1HD-2FE	Local Start N Permit
21:29:50	BFPDT-B OVE FAN-A 1DG-9FC	MCC Disturbed
21:29:50	HPCF Cir Pump1 1KA-5RD	MCC Disturbed
21:29:50	HPCF VAP EXTR1	Tripped
21:29:50	OBA-I/C Trip Rly	Operated
21:29:50	FD Fan-A 1BA-PNL-12	MTR Operated
21:29:50	FDF-1A LOPB 1DG-9RD	Local Start N Permit
21:29:50	FDF-1A LOPA 1DG-9RD	Local Start N Permit
21:29:50	IDF-1A LOPA ESP1 1HD-3RB	Local Start N Permit
21:29:50.483	IDF-B CH1 Speed	Old=N<Min New=<Min (Off)
21:29:50.484	IDF-A CH1 Speed	Old=N<Min New=<Min (Off)
21:29:51	IDF-A LOP-B Tripped	True
21:29:51	0CB027 Opened from DDC	True
21:29:51	IDF-A On & Both Lops Off	True
21:29:51	IDF-A VFD CH1 Tripped	True
21:29:51	1CB003 Opened from DDC	True
21:29:51	BFPDT-B Tripped	Tripped
21:29:51	IDF-B CH1 Source brkr Tripped	True
21:29:51	IDF-B CH2 Source brkr Tripped	True
21:29:51.805	MDBFP Auto Start	True
21:29:51.886	IDF-A Protection Acted	True
21:29:52	0CB123 Opened from DDC	True

21:29:52	MFT CH3	True	
21:29:52	1CA Bus-A UV	Failure	
21:29:52	MFT CH2	True	
21:29:52	AOP1 1DA-6FA	MCC Disturbed	
21:29:52	MFT CH1	True	
21:29:52	Control Fluid Pump 1	MCC Disturbed	
21:29:52	SG DMCWP-A Tripped	True	
21:29:52	TG DMCWP-A Tripped	True	
21:29:52.705	1BA-OBA Tie	Old= Close	New= Open
21:29:52.715	1PMC06 I/C-A	Old= Close	New = N True
21:29:52.813	All ID Fans Off	Old= False	New= True
21:29:52.813	Both ID Fans Off CH2	Old= False	New= True
21:29:52.883	Both ID Fans Off CH1	Old= False	New= True
21:29:52.992	MFT CH2 TP1	OPTD	
21:29:52.992	MFT CH3 TP1	OPTD	
21:29:53	IDF-A VFD CH2 Tripped	True	
21:29:53	IDF-A Tripped	True	
21:29:53.124	MFT CH2 TP2	Old =False	New=OPTD
21:29:53.124	MFT CH3 TP2	Old =False	New=OPTD

BOARD OPERATOR Feedback:

Unit was in service at 388 MW. There was a disturbance in lighting inside CCR and moment after that Unit-1 tripped. From First-up cause, it was found that Boiler tripped on MFT with the protection of Both ID Fans Off. On further checking, it was found that most of running A series equipments were in tripped condition for example: CWP 1A, CEP-1A, BCW-1A, DMCW SG-A & TG-A, SC-1, Vacuum Pump-1A, SOP-A etc.

ANALYSIS from SOE & Inspection:

From SOE it was found that 0BA I/C (Station 11KV incomer-LV1) trip relay operated at 21:29:50 hrs. On local inspection it was found that flash over occurred in lighting transformer ODD section A bus support insulator on the breaker incoming side. 0BA to 1BA (Unit 1 11KV incomer Bus A) tie breaker (1CB003) opened at 1BA end and in-turn 1BA bus became dead. The opening of TIE Breaker at 1BA end is as per trip logic only. FD Fan-1A tripped at 21:29:50 hrs due to the failure of supply in A series. Also IDF 1A VFD Ch1 & 1B VFD CH1 tripped at 21:29:51 hrs. Also IDF 1B VFD Ch2 source breaker tripped at 21:29:51 hrs. Due to tripping of FD Fan 1A, on interlock logic, protection acted on ID Fan 1A at 21:29:51.886. It leads to acting of MFT on both ID Fans Off at 21:29:52.

ON 0.4 KV SIDE

On the LV side normal INCOMER BREAKER (1DG-I/C) from Unit 0.4 KV Section A bus opened and 1DG emergency bus BUS COUPLER closed on auto. The emergency incomer to 1DG emergency (1CB 021) bus tripped and DG set came in auto. Trip impulse was coming

for 1CB 021 breaker. C&I attended the problem and the breaker was closed the emergency PMCC bus 1DF was charged.

CONCLUSION:

Following points were concluded:

- 0BA I/C breaker tripped due to flash over in 0DD-T01 Lighting Transformer bus dropper support insulator failure, in-turn making 1BA bus dead.
- IDF 1A CH-1 & IDF 1B CH-1 and FD Fan 1A tripped due to 1 BA bus failure.
- On Protection interlock ID Fan 1A CH2 tripped. Mean time ID Fan 1B channel 2 source breaker also tripped on disturbance.
- MFT acted on both ID Fans Off.

After getting clearance from Electrical Maintenance, the boiler was light up at 05:00 hrs and the unit was synchronized at 07:57 hrs on 12.05.2017.

RECOMMENDATIONS:

- ❖ Whenever there is no physical identification of why the bus has cleared, the bus top may be inspected for opening of additional explosion windows as only the outer explosion window could be seen from the floor level.
- ❖ At every available opportunity the insulation resistance of 11KV buses may recorded. The samples of support insulators may be sent to CPRI for testing.
- ❖ As per present logic, on loss of A series supply, channel-1 of IDF A & B will trip and channel-2 of IDF A also trip as FD A is tripping will be in service. The cabling has to be so modified that ID FAN B Channel 1 should get supply from unit 11KV Unit BUS B and ID FAN A Channel 2 should get supply from unit 11KV Unit BUS A.
- ❖ The TIE between 11KV Station Transformer-1&2 for BUS SECTION B could not availed from 23/12/2016 due to rat entry. Now The TIE between 11KV Station Transformer-1&2 for BUS SECTION A could not availed. Whenever there is problem in any one station transformer the TIE could not be availed now. Hence both the problems should be attended at the earliest.

CM/OS(T)

ADGM/C&I

DGM/Elec

DGM/O&C