

UNIT TRIPPING REPORT

UNIT No: 2

STATION: NTPL, TUTICORIN.

OUTAGE: NO. 17

REPORT NO: 17

1. Date of tripping : 03-03-2018
2. Time of tripping : 23:15:27 Hrs
3. Status before tripping
 - a) Unit load : 480MW @ 19:30 Hrs
 - b) Mills in service : A, C, D, E & F
 - 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 : Turbine was hand tripped
5. Similar occurrences in the Financial Year: Nil
6. Other relays/protection acted : Turbine trip/Generator trip/Boiler trip
7. Supporting documents attached : SOE & Trend
8. Any operation done prior to tripping : Load was reduced to 80 MW
9. Analysis of tripping :

@18:00 Hrs, while the unit was in normal operation, ASLD-13 picked up a weak signal of about 3 Db and a difference of about 100 T/hr was noticed between Feed water and Steam flows. However, no audible noise or any other abnormalities could be detected during local inspection in that area. Drum level was also maintaining around (-)150 mm. No appreciable loading could be noticed in ID Fans. Average system make up found to have increased.

@ 21:00 Hrs, after detailed inspection at local, it was decided to hand trip the unit to attend BTL @ 25 ML. Load was gradually reduced to 80 MW and turbine was hand tripped from Control Room. Generator got tripped on 'reverse power' and subsequently Boiler got tripped on 'SH-RH Conditions' since the HPBP didn't come into service.

10. Root cause :

Front water wall tube no.20 from LHS was damaged due to steam erosion from WB 67, since its seal box sleeve was damaged and missing. The pin hole puncture in tube no.20 at 21 ML resulted in erosion thinning of three more tubes, viz. 21, 22 & 23 at the same level and location.

The failure of tube no.20 @ 21 ML resulted in starvation of the same tube resulting in 'fish-mouth opening' @ 31 ML elevation. Tube nos. 21 to 25 were also affected by erosion from tube no. 20 @ the same level and location.

ASLD in that area didn't pick up due to instrument cable fault.

11. Remedial measures taken/to be taken : See recommendations.



Sync Complete for 20WS4

Event Summary

(filtered)

Start Time: Saturday 03/Mar/2018 23:14 End Time: Saturday 03/Mar/2018 23:20 3583

Time	A/C	Ty...	S	Description	TagName	Event Text
03/Mar/18 23:15:22.342		SQ		CJJ21 FDR-1 UNDER VOLTAGE	2CJJ21UV001XG01	Digital_State Old=FALS
03/Mar/18 23:15:23	Alm	PA	1	GS HDR DRN VLV	2MTL03AA256	MCC Disturbed 2TATRS
03/Mar/18 23:15:23	Alm	PA	5	TUR TRIP CH1.3 CMD	21MAY1EZ110JYT01	Alarm Digital Value =TRI
03/Mar/18 23:15:23	Alm	PA	5	EMERG TRIP HMI	21HMI_TRIP	Alarm Digital Value =OP
03/Mar/18 23:15:23.320		SQ		EMERG TRIP HMI	21HMI_TRIP	Digital_State Old=NOT C
03/Mar/18 23:15:23.350		SQ		EMERG TRIP OPTD	21MAY01EZ124XE07	Digital_State Old=NOT C
03/Mar/18 23:15:23.369		SQ		EMERG TRIP BY PB'S	21MAY01EZ001XT01	Digital_State Old=N.OPT
03/Mar/18 23:15:23.869		SQ		TUR TRIP CH1.3 CMD	21MAY1EZ110JYT01	Digital_State Old=N TRI
03/Mar/18 23:15:23.869		SQ		TURB TRIP CH1.2 CMD	21MAY1EZ110HYT01	Digital_State Old=FALS
03/Mar/18 23:15:23.869		SQ		TURB TRIP CH1.1 CMD	21MAY1EZ110GYT01	Digital_State Old=FALS
03/Mar/18 23:15:24	Alm	PA	3	WATER INJ FLOW PROT	22MAN01EZ114XE04	Alarm Digital Value =HIG
03/Mar/18 23:15:24	Alm	PA	1	Motor Optd Bi-DirectionValve	2LCA70AA001	MCC/Actuator Disturbed
03/Mar/18 23:15:24.407		SQ		ETP CH-1.1	2MAY01EZ110XT02	Digital_State Old=FALS
03/Mar/18 23:15:24.441		SQ		REMOTE TRIP RELAY CH-2	2MAX51AA002AXJ21	Digital_State Old=FALS
03/Mar/18 23:15:24.761		SQ		POS OF HP ESV-2 RHS	2MAA20CG001BXG01	Digital_State Old=OPEN
03/Mar/18 23:15:24.763		SQ		POS OF HP ESV-2 RHS	2MAA20CG001BXG51	Digital_State Old=FALS
03/Mar/18 23:15:24.776		SQ		DISC SCAN FLAME AB2	2HHA12CE101_XG00	Digital_State Old=TRUE
03/Mar/18 23:15:24.777		SQ		DISC SCAN NO FLAME AB2	2HHA12CE100_XG00	Digital_State Old=FALS
03/Mar/18 23:15:24.798		SQ		POS OF INTCPT ESV-1 LHS	2MAB10CG001BXG01	Digital_State Old=OPEN
03/Mar/18 23:15:24.800		SQ		POS OF INTCPT ESV-1 LHS	2MAB10CG001BXG51	Digital_State Old=FALS
03/Mar/18 23:15:24.804		SQ		POS OF HP ESV-1 LHS	2MAA10CG001BXG01	Digital_State Old=OPEN

MFT	APRDS	MILL A	MILL B	MILL C	TDBFP A	TDBFP B	EHTC	CMC	21MAY01EZ124XE07
FLAME INTENSITY	SADC	MILL D	MILL E	MILL F	TP INDIPTS	LUB OIL	HPBP	VACCUM	EMERG TRIP OPTD
BOILER CONTROL	CLCS	MILL G	MILL H	WALL B	TURB. PROT N	HPCF	LPBP	PW SYS	"EventSummary\EventSummarySOE.MN"

SILENCE	TAG	Print	HW Cond
ACK	SOE	Alm Sum	9.5
RESET	ALARM	TRND	13.2

12:39:49

13Mar18

3000RPM

360MW

H2 PR



MAIN LAST

SG TG

BOP ELEC

GEN TDBFP

Select Point Track Point

H2 PR 3.41

FUR PRS -10.3

TOT COAL 185.4

TOT AIR 1188.9

SA FLOW 602.5

O2 3.63

PA HDR 803.5

DRUM PR 155.4

MS PRESS 142.9

HRH PR 30.70

MS TEMP 535.3

HRH TEMP 576.5

SH SPRAY 80.4

COND PR 0.1393

HWL LVL 52.715

DEA LVL 145.3

DRUM LVL 21.8

MS FLOW 1103.9

FW FLOW 1094.0

COND FLW 867.61

IA PRESS 6.6430

MOT LVL -136.1

CF LVL 7.0338



Sync Complete for 20WS4

Event Summary

(filtered)

☒ Start Time: Saturday 03/Mar/2018 23:14 ☒ End Time: Saturday 03/Mar/2018 23:20

3576

Time	A/C	Ty...	S	Description	TagName	Event Text
03/Mar/18 23:15:26	Alm	PA	4	SEAL STM HEADER PRES	2MAW20DP901XJ01_1	RangeLoAlarm Lim= -10
03/Mar/18 23:15:26	Clr	PA	3	TP LOAD UP DIR BLOCK ACTI...	2TPLoadUPDirBlk	Alarm Clear Value =False
03/Mar/18 23:15:26	Clr	PA	3	TP LOAD RUNDOWN ACTIVE	2TPLoadRunDown	Alarm Clear Value =False
03/Mar/18 23:15:26	Clr	PA	3	UP DIR BLOCK ACTIVE	2DIR_BLK_UP	Alarm Clear Value =False
03/Mar/18 23:15:26	Alm	PA	2	HPBP LPBP not Opening	2HPLBPBPntOpen	Alarm Digital Value =True
03/Mar/18 23:15:26.917		SQ		HP EVAC VLV F/B	2LBJ10AA001XB01	Digital_State Old=FALSE
03/Mar/18 23:15:26.996		SQ		MSF LOAD <25%	2MSFLT25Pct	Digital_State Old=False
03/Mar/18 23:15:26.996		SQ		MSF LOAD <20%	2MSFLT20Pct	Digital_State Old=False
03/Mar/18 23:15:27	Alm	PA	5	GEN ELECTRICAL PROT - 3	21MKY01EZ01CXG01	Alarm Digital Value =OP
03/Mar/18 23:15:27	Alm	PA	5	GEN ELECTRICAL PROT - 2	21MKY01EZ01BXG01	Alarm Digital Value =OP
03/Mar/18 23:15:27	Alm	PA	5	GEN ELECTRICAL PROT - 1	21MKY01EZ01AXG01	Alarm Digital Value =OP
03/Mar/18 23:15:27	Clr	PA	1	2WTR_INJ_CTRL1	2WTR_INJ_CTRL1	Low PV Deviation 2LPBP
03/Mar/18 23:15:27	Alm	PA	5	TURBINE TRIPPED FROM ATT	22TURBINE_TRIPPD	Alarm Digital Value =TUR
03/Mar/18 23:15:27	Alm	PA	5	STG1 AVR COM ALARM I	2MKY02GX222_XG48	Alarm Digital Value =OP
03/Mar/18 23:15:27	Alm	PA	5	STG1 TRIP RELAY 286A	2MKY01GX207_XG48	Alarm Digital Value =OP
03/Mar/18 23:15:27	Alm	PA	5	STG1 TRIP RELAY 186A	2MKY01GX205_XG48	Alarm Digital Value =OP
03/Mar/18 23:15:27	Alm	PA	5	INV OPRN ON CH2	/HARDWARE_OUTP...	Alarm Digital Value =EX
03/Mar/18 23:15:27	Alm	PA	4	HPBP VALVE FAST OPEN	2LBF00DP110_YN00	Alarm Digital Value =FS
03/Mar/18 23:15:27	Alm	PA	5	TURBINE TRIPPED	TURBINE_TRIPPED_1	Alarm Digital Value =TRI
03/Mar/18 23:15:27	Alm	PA	5	LOAD CONTROL	2Lod_Ctl_InActn	Alarm Digital Value =NO
03/Mar/18 23:15:27	Alm	PA	4	GEN BREAKER	2BAC01AA001AXG02	Alarm Digital Value =OP

12:41:51

13Mar18

2998RPM

366MW



MAIN LAST

SG TG

BOP ELEC

GEN TDBFP

Select Track

Point Point

H2 PR 3.41

FUR PRS -7.98

TOT COAL 185.1

TOT AIR 1186.3

SA FLOW 597.9

O2 3.69

PA HDR 806.8

DRUM PR 158.1

MS PRESS 145.5

HRH PR 31.28

MS TEMP 535.7

HRH TEMP 575.8

SH SPRAY 81.8

COND PR 0.1398

HWL LVL 64.664

DEA LVL 109.9

DRUM LVL 8.5

MS FLOW 1124.4

FW FLOW 1128.2

COND FLW 890.27

IA PRESS 6.6474

MOT LVL -136.1

CF LVL 6.3745

MFT	APRDS	MILL A	MILL B	MILL C	TDBFP A	TDBFP B	EHTC	CMC	2BAC01AA001AXG02
FLAME INTENSITY	SADC	MILL D	MILL E	MILL F	TP INDIPTS	LUB OIL	HPBP	VACCUM	GEN.BREAKER
BOILER CONTROL	CLCS	MILL G	MILL H	WALL.B	TURB. PROT.N	HPCF	LPBP	PW SYS	"EventSummary\EventSummarySOE.MN"

SILENCE	TAG	Print	HW	Cond
ACK	SOE	AlmSum	9.6	
RESET	ALARM	TRND	13.1	



Sync Complete for 20WS4

Event Summary

(filtered)

☒ Start Time: Saturday 03/Mar/2018 23:14 ☒ End Time: Saturday 03/Mar/2018 23:20

3576

Time	A/C	Ty...	S	Description	TagName	Event Text
03/Mar/18 23:15:50	Alm	PA	1	GLND STM DRN VLV	2MTW60AA251	MCC Disturbed 2TATRS
03/Mar/18 23:15:50	Clr	PA	1	2WTR_INJ_CTRL2	2WTR_INJ_CTRL2	Low PV Deviation 2LPB
03/Mar/18 23:15:50	Clr	PA	3	PURGE COMPLETE / NO MFT	2HBK01EA146_YV00	Alarm Clear Value =FALS
03/Mar/18 23:15:50	Alm	PA	5	DRUM LEVEL V.LOW	2HBK01EA107_YV00	Alarm Digital Value =TRU
03/Mar/18 23:15:50	Clr	PA	3	WATER INJ FLOW PROT	21MAN01EZ114XE04	Alarm Clear Value =N.HI
03/Mar/18 23:15:50	Alm	PA	3	TP1 MFT PROT TP CH-1	21HBK01EZ110ZK97	Alarm Digital Value =FAL
03/Mar/18 23:15:50	Alm	PA	3	TP1 MFT PROT TP CH-1	22HBK01EZ110ZK97	Alarm Digital Value =FAL
03/Mar/18 23:15:50	Alm	PA	1	GS HDR DRN VLV	2MTL03AA256	MCC Disturbed 2TATRS
03/Mar/18 23:15:50	Clr	PA	1	CEP-C Min Rec CV PID	2CDV14PID	Low PV Deviation 2B14C
03/Mar/18 23:15:50	Clr	PA	1	Motor Optd Bi-DirectionValve	2LCA70AA001	MCC/Actuator Disturbed
03/Mar/18 23:15:50	Clr	PA	1		2CRHStm_FloAprds	Out Bad 2B10CRE23_p
03/Mar/18 23:15:50	Alm	PA	5	Audio Acknowlwedge	2B21_ALM_AudiAck	Alarm Digital Value =Tru
03/Mar/18 23:15:50		EA			2LAE31AA101_#101	OpCmd1 Old= 12.00 Ne
03/Mar/18 23:15:50.067		SQ		LOSS OF RH PROT ACTED	2RH_PROT_ACTED	Digital_State Old=False
03/Mar/18 23:15:50.308		SQ		MFT CH 3	2HBK01EZ300_XE46	Digital_State Old=FALS
03/Mar/18 23:15:50.327		SQ		MFT CH 1	2HBK01EZ100_XE46	Digital_State Old=MFT P
03/Mar/18 23:15:50.403		SQ		MFT CH 2	2HBK01EZ200_XE46	Digital_State Old=FALS
03/Mar/18 23:15:50.450		SQ		TP1 MFT PROT TP CH-1	22HBK01EZ110ZK97	Digital_State Old=N.FAU
03/Mar/18 23:15:50.474		SQ		TP1 MFT PROT TP CH-1	21HBK01EZ110ZK97	Digital_State Old=N.FAU
03/Mar/18 23:15:50.477		SQ		DRUM LEVEL V.LOW	2HBK01EA107_YV00	Digital_State Old=FALS
03/Mar/18 23:15:50.477		SQ		NO BOILER TRIP CMD	2HBK01EA100_XU59	Digital_State Old=TRUE

MFT	APRDS	MILL A	MILL B	MILL C	TDBFP A	TDBFP B	EHTC	CMC	2HBK01EZ200_XE46
FLAME INTENSITY	SADC	MILL D	MILL E	MILL F	TP INDIPTS	LUB OIL	HPBP	VACCUM	MFT CH 2
BOILER CONTROL	CLCS	MILL G	MILL H	WALL.B	TURB. PROT N	HPCF	LPBP	PW SYS	"EventSummary\EventSummarySOE.MN"

SILENCE	TAG	Print	Hw	Cond
ACK	SOE	Alm Sum	8.7	
RESET	ALARM	TRND	13.0	

12:44:55

13Mar18

2998RPM

371 MW

UNIT 2

MAIN	LAST
SG	TG
BOP	ELEC
GEN	TDBFP

Select Point	Track Point
H2 PR	3.41
FUR PRS	-10.0
TOT COAL	185.2
TOT AIR	1188.2
SA FLOW	598.8
O2	3.47
PA HDR	814.8
DRUM PR	162.2
MS PRESS	149.8
HRH PR	31.95
MS TEMP	530.2
HRH TBMP	573.3
SH SPRAY	59.2
COND PR	0.1393
HWL LVL	84.853
DEA LVL	64.0
DRUM LVL	5.2
MS FLOW	1135.3
FW FLOW	1171.6
COND FLW	997.05
IA PRESS	6.6474
MOT LVL	-135.7
CF LVL	5.7153

DISPLAY FILES [2ENG2]

1ENG4
1ENGRPC
1HARTPC
1OWS2

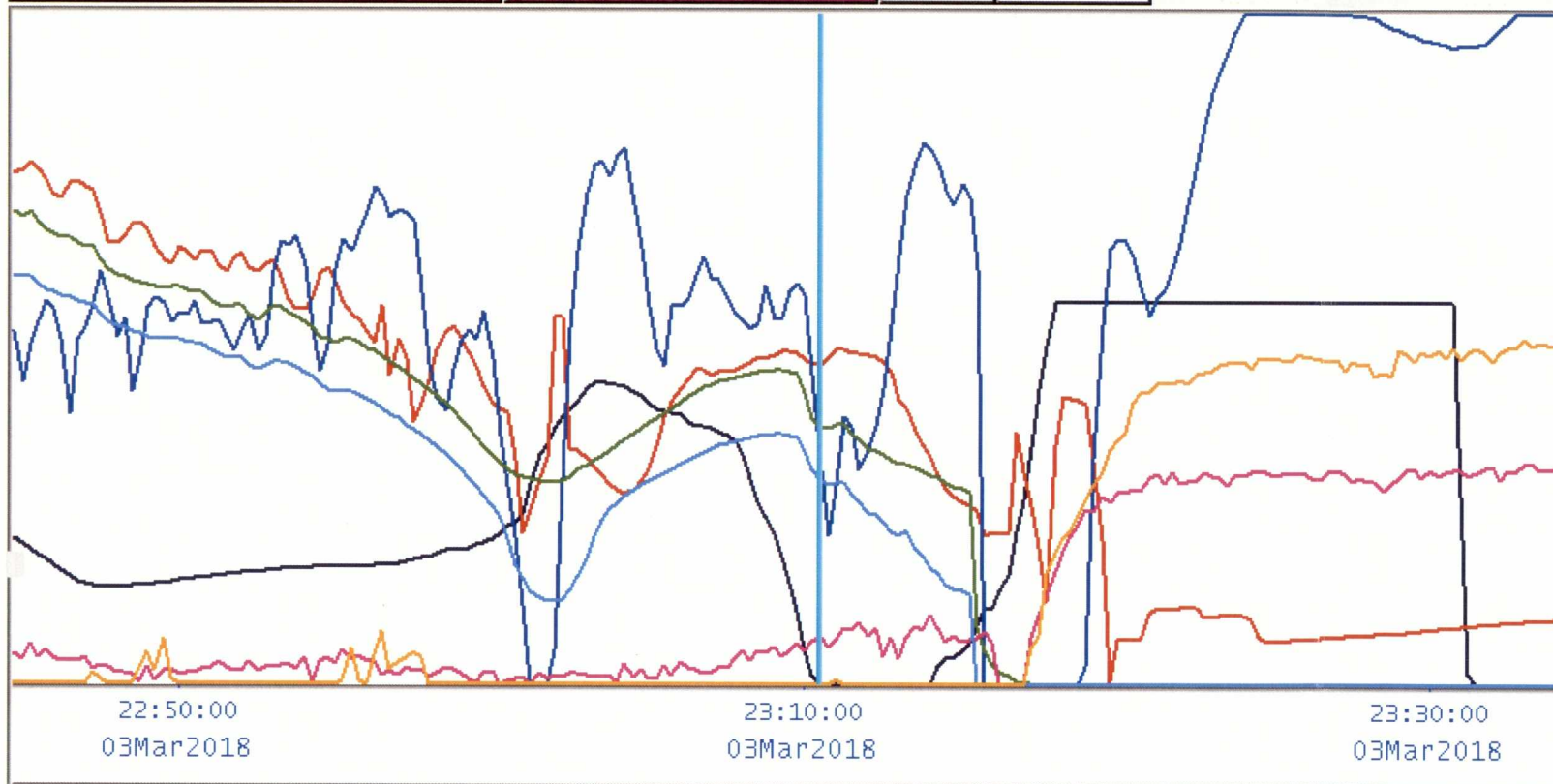
Sync Complete for 20WS4

Dynamic 8 Point Trend

2ASLDS13_X001.Out.Sample

ASLD_13

2.8604 dB



03Mar2018 23:10:30

ASLD_04	0.0000
ASLD_13	2.8604
Drum Level Actual(Average)	-85.1961
HOTWEL MAKE FLOW	0.0000

ACTUAL LOAD	182.6207
MS FLOW ACT	611.2786
TOTAL FW FLOW	768.0050

MFT	APRDS	MILL A	MILL B	MILL C	TDBFP A	TDBFP B	EHTC	CMC
FLAME INTENSIT	SADC	MILL D	MILL E	MILL F	TP INDITS	LUB OIL	HPBP	VACCUM
BOILER CONTROL	CLCS	MILL G	MILL H	WALL B	TURB. PROT	HPCF	LPBP	PW SYS

2LOAD_ACTUAL_MV3

ACTUAL LOAD

"TRENDS\DT12Pt.mn"

SILENCE

ACK

RESET

TAG

SOE

ALARM

Print

AlmSum

TRND

HW Cond

9.8

13.1

12:32:59

13Mar18

9

2999RPM

357MW



MAIN	LAST
SG	TG
BOP	ELEC
GEN	TDBFP

Select Point	Track Point
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H2 PR	3.41
FUR PRS	-9.40
TOT COAL	186.0
TOT AIR	1173.6
SA FLOW	577.9
O2	3.35
PA HDR	801.3
DRUM PR	149.5
MS PRESS	136.8
HRH PR	30.45
MS TEMP	541.3
HRH TEMP	571.1
SH SPRAY	93.5
COND PR	0.1390
HWL LVL	60.956
DEA LVL	119.8
DRUM LVL	8.9
MS FLOW	1094.1
FW FLOW	1082.8
COND FLW	906.56
IA PRESS	6.6262
MOT LVL	-135.7
CF LVL	4.0305