UNIT TRIPPING REPORT

UNIT No: 1 STATION: NTPL, TUTICORIN.

OUTAGE: NO.45

REPORT NO: 45

1.Date of tripping	: 13-11-2019
2.Time of tripping	: 03:45:17 Hrs
3.Status before tripping	
a) Unit load	: 188 MW
b) Mills in service	: A, B, D, E, & F
c) Oil guns in service	: Nil
d) Boiler feed pumps in service	: TDBFP A & MDBFP
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 trip on Vibration High
5.Similar occurrences in the Financial Year	: Nil
6.Other relays/protection acted	: Shaft vibration High Alarm.
7.Supporting documents attached	: Trend
8.Any operation done prior to tripping	: Sync & Load raising in progress.
9.Analysis of tripping	:

Turbine got tripped on shaft vibration high protection at 03:45:17 hrs on 13-11-2019 in U#1 while load raising was in progress, after synchronizing. Protection trip on shaft vibration was implemented in both the units following the BHEL directive on the subject. The protection has to act after a time delay of 1 second, when 2 out of the 14 of shaft vibration values exceed 300 μ.

10.Root cause :

Though the exact cause for vibration could not be ascertained at that time, it is believed to be due to the excessive differential expansion of HPT. Rate of MS temperature rise was faster and reflected in TSE as very low available HPC margin.

11.Remedial measures taken/to be taken:

HPDE reading which was not available was made ready during the AOH 2019 of Unit #1, after rectifying the instrument cable. But again it got failed while in service, making it unavailable for monitoring during rolling and load variations. This has to be retrieved during the next opportunity.

Board Engineers were sensitized on the importance of Turbine supervisory instruments, TSE and parameter raising procedures. Relieving Group Classes were conducted for all operation engineers and a Rolling Check List was formulated. Two rollers per Group were identified for imparting intensive rolling training.

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

Light Up: : Boiler was in Service.

Sync'd: : 05:49 Hrs on 13-11-2019

13.Delay for light up : No delay.

All available turbine supervisory parameters variations were analysed to find out the root cause for the vibration of both the HPT bearings, and also to rule out spurious signals. No direct relation could be arrived at during the period. Anyhow vibration probes were checked and replaced with new ones for the acted sensors.

14.Recommendation / Action plan :

Sl.No.	Recommendations/Action plan	Responsibility	Time line
1)	All TSI Readings to be made available.	C&I	Next opportunity
2)	Board Operation Engineers to be imparted training in Main Turbine Rolling.	OS	To start training immediately and continue for six months period

15.Any specific learning / feedback :

All Main Turbine TSI & TSE readings and logics to be made available at the earliest opportunity. Operation Engineers to be imparted Rolling training and specific 'Rollers' to be identified in all groups. SOP for Cold/Warm/Hot Rolling & load raising to be prepared and kept in CCR.

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

DGM / O&C

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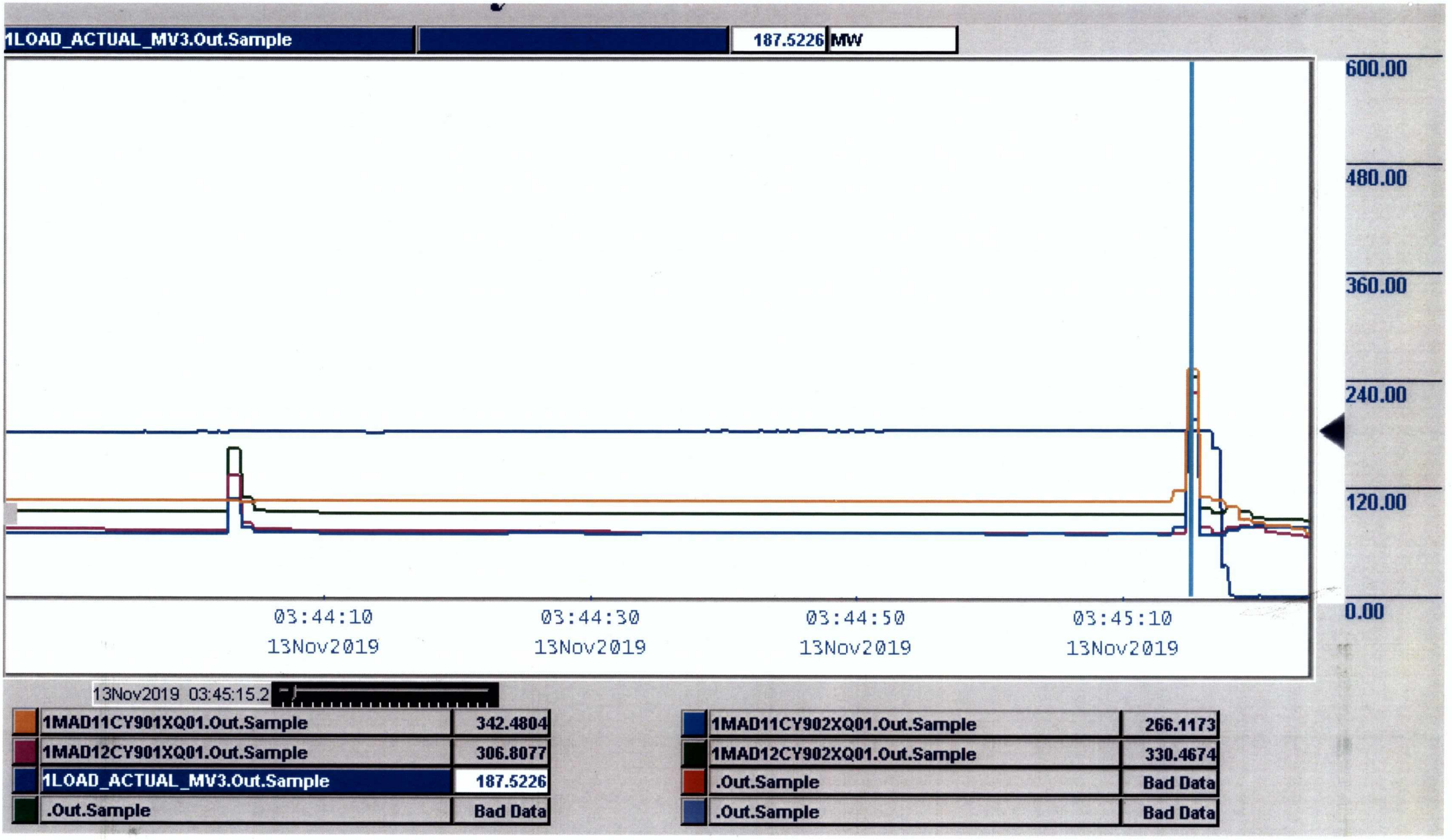
Copy submitted to GM/O&M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360.00
240.00
120.00
0.00
03:44:10
13Nov2019
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13Nov2019
03:44:50
13Nov2019
03:45:10
13Nov2019
13Nov2019 03:45:15.2
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