

Harmonics Audit Report

**For Leading Gear Manufacturing
Company**

By

SAS Powertech Pvt Ltd.

101, Gera's Regent Manor, Survey No. 33, Area No. 39/570,
Behind Opulent Car Care Center Baner, Pune 411045
Tel: 020 65203015

Email: solutions@saspowertech.com

Audit conducted on 21st July 2016.

List of Equipment used and Audit team

Equipment:

- 1) KRYKARD make recording type power analyzers ALM 35
- 2) KRYKARD make power analyzer NANO CLAMP

Audit Team:

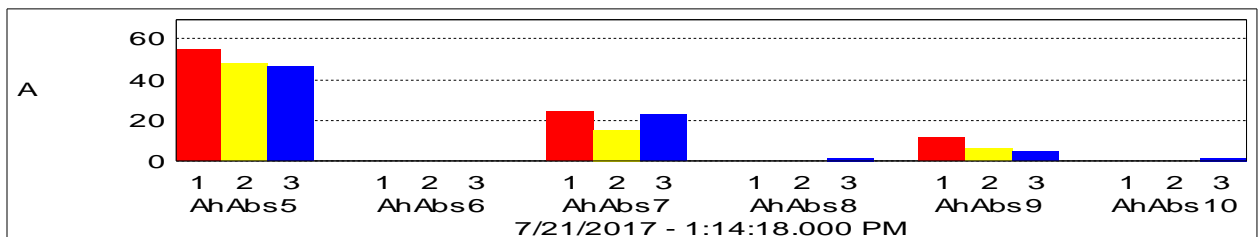
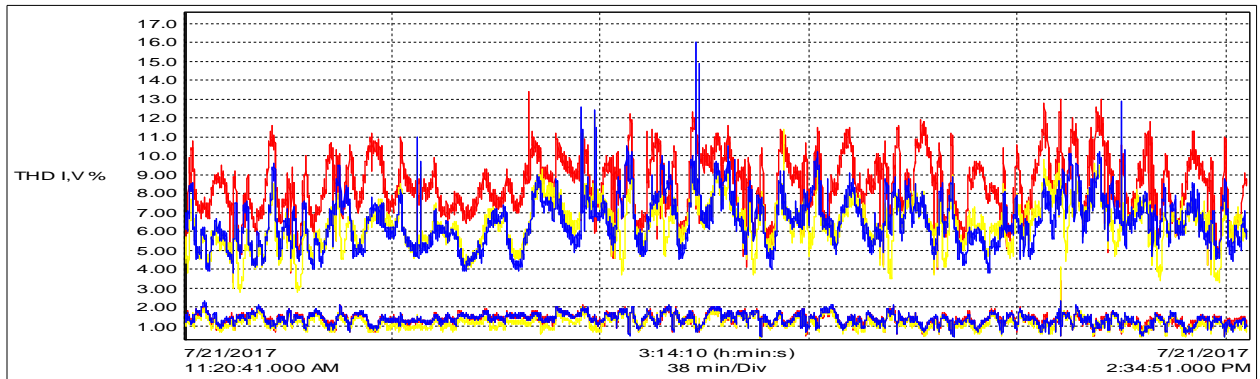
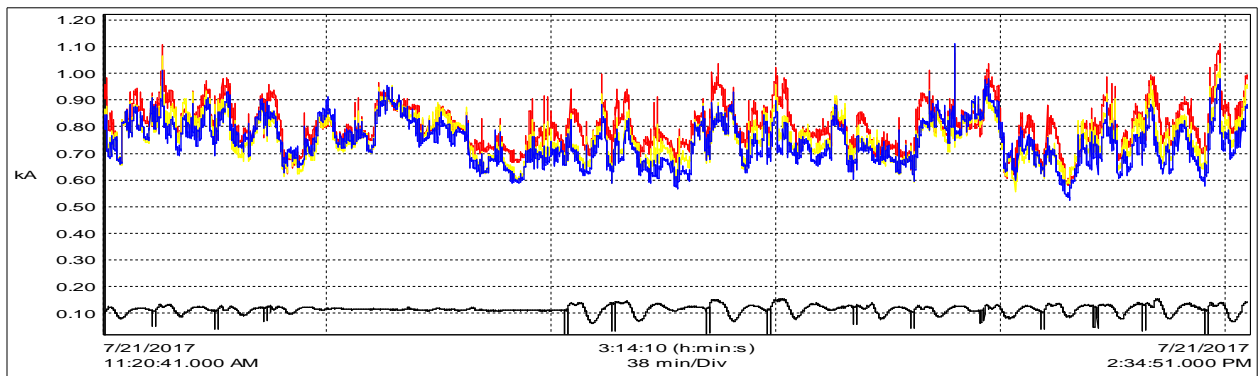
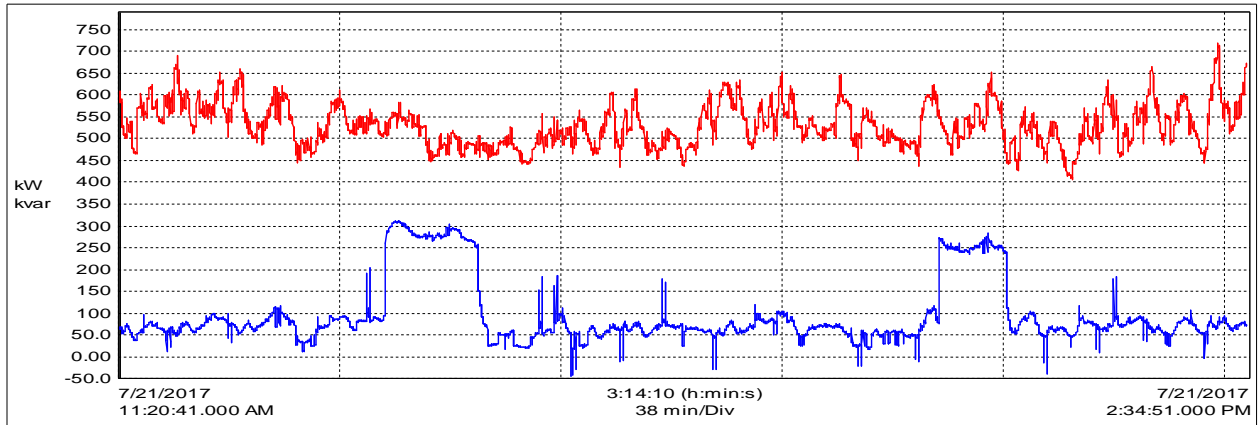
SAS Powertech Pvt. Ltd.

- 1) Mr. Narendra Duvedi – *BEE Certified energy auditor, Chartered Engineer*
- 2) Mr. Vijay Sonawane
- 3) Mr. Sandesh Biramane

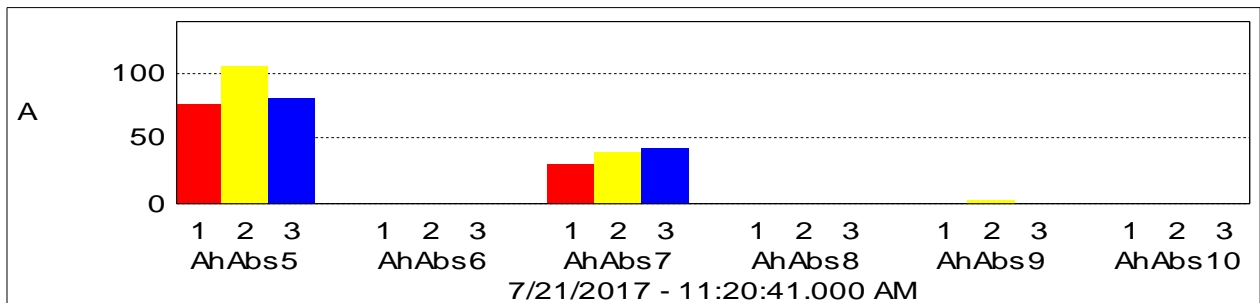
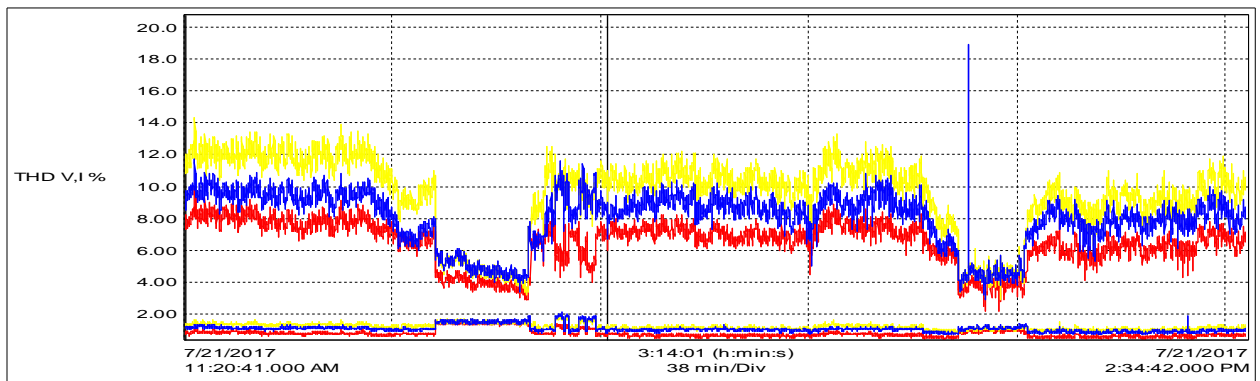
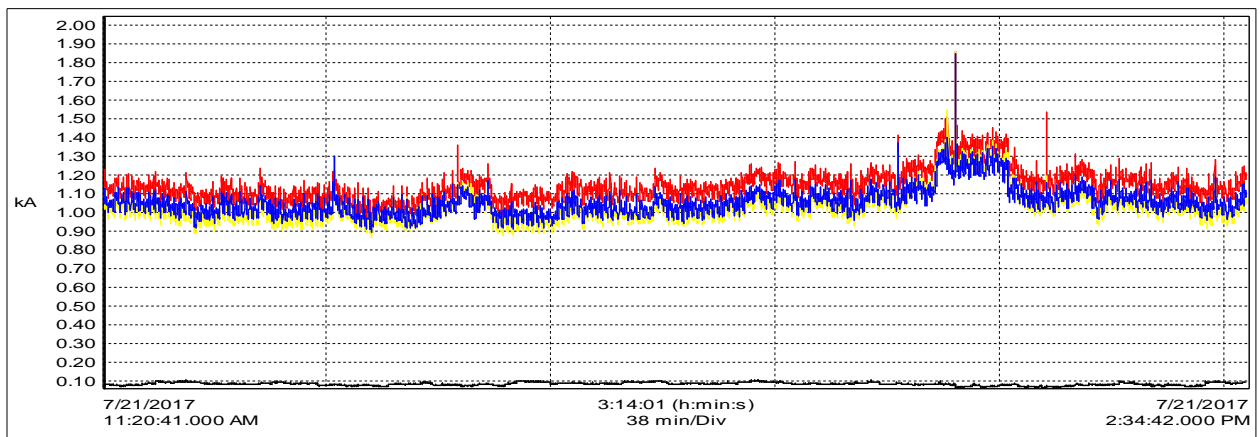
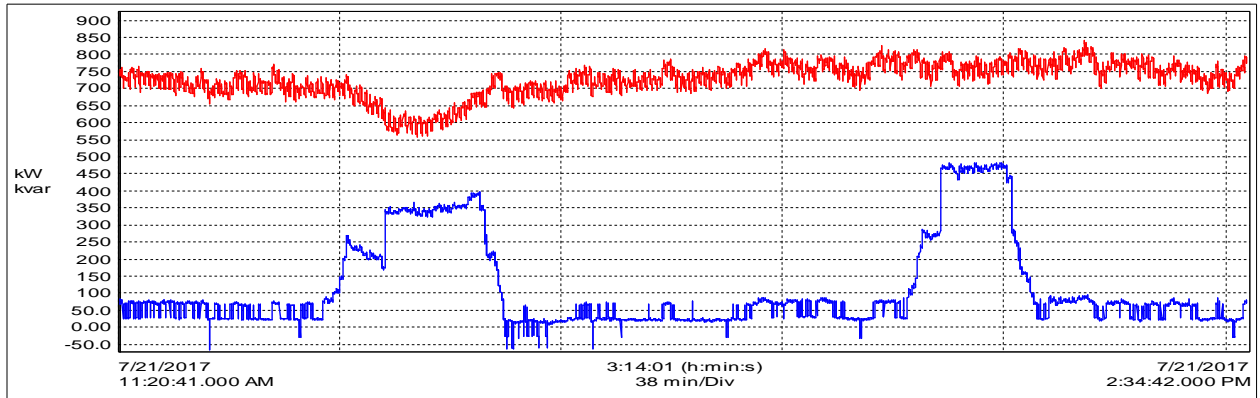
Client:

Mr. XXX

1000KVA Transformer 1



1600KVA Transformer 2



Present:

TR-1

De-tuned Panel -300KVAR

FIX capacitor – 50KVAR

TR-2

De-tuned Panel -150KVAR

FIX capacitor – 525KVAR

Recommended:

TR2: 450KVAR (Actual requirement) – 150KVAR (Existing) = 300KVAR.

Add 25% spare = 300KVAR+75KVAR at 415V.

KVAR Requirement at 525V = $375 \times 1.6 = 600$ KVAR detuned.

In view of compensating Harmonic currents further, 100A Active harmonic filter one each on both transformers.

Fixed capacitors shall be removed.

Current Harmonic compliance limit for the plant as per MSEDCL supply code 2005 and IEEE 519 1992 is as shown below.

MSEDCL MVA	50
% IMPEDANCE	14.6
SC MVA	342.4657534
CONTRACT DEMAND IN KVA	2000
CONTRACT DEMAND IN MVA	2
Isc/IL	171.2328767

Maximum harmonic current distortion in percentage of IL						
Individual harmonic order (odd harmonics)						
Isc/IL	<11h	11≤h<17	17≤h<23	23≤h<35	35≤h<49	TDD
<20	4	2	1.5	0.6	0.3	5
20<50	7	3.5	2.5	1	0.5	8
50<100	10	4.5	4	1.5	0.7	12
100<1000	12	5.5	5	2	1	15
>1000	15	7	6	3.5	1.4	20
Even harmonics are limited to 25% of odd harmonic limits above.						

As per provision in above regulation the compliance limit would be 15%