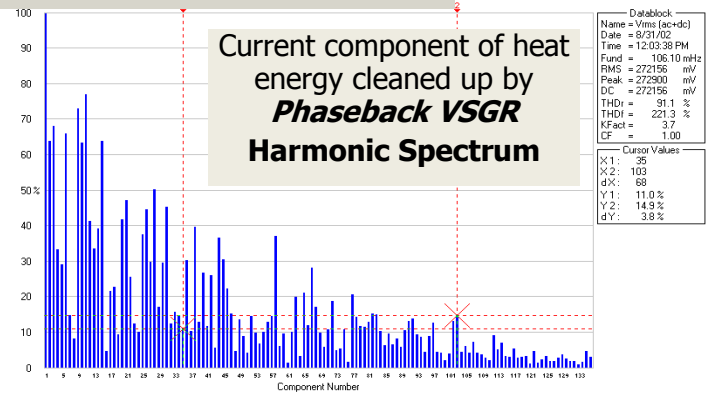
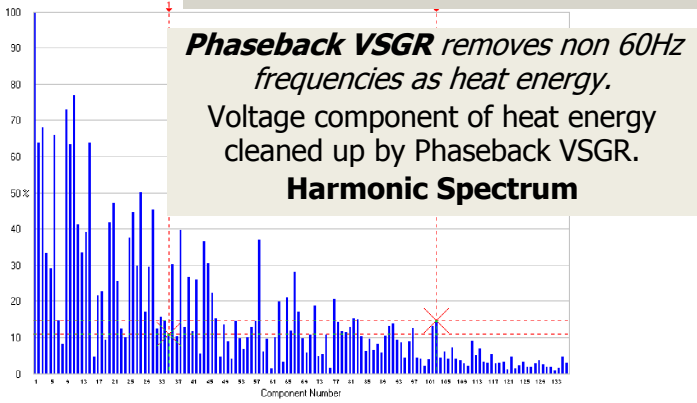


It must be the Utility's fault

Causing equipment to shut down and not start properly!



Dateblock
Name = Vrms (ac+dc)
Date = 8/31/02
Time = 12:03:38 PM
Fund = 106.10 mHz
RMS = 272156 mV
Peak = 272620 mV
DC = 272156 mV
THDr = 91.1 %
THDi = 221.3 %
KFact = 3.7
CF = 1.00

Cursor Values
X1: 35
X2: 103
dX: 68
Y1: 11.0 %
Y2: 14.9 %
dY: 3.8 %

Case Study #3 Electricians recorded information with a 1 phase meter, to find a solution for Power problems. The first thought by the client was, it must be the Utility's fault. After installing the Phaseback VSGR, these recordings were made at the resistor in the VSGR, showing what is being cleaned from the system. **Why install a Phaseback VSGR? To: Stop** the unplanned shutdowns, operation malfunctions & **Increase** production output.

A Michigan **Automotive component manufacturing** facility with dozens of CNC machines had problems with unstable voltages, harmonics, noise & switching transients. 180 Hz through **3,560,000,000** Hz (Extreme High Frequency Noise) from 100% harmonic loads, and periodic Utility capacitor switching caused the nominal frequency to be 106.1mHz, nominal. Grounds forming in the ungrounded power system were causing servo & spindle drives to fault. With the **Phaseback VSGR (AFPT)** added to the power system, the facility could operate trouble-free, & the grounds could be located while production continued to run. Most of the problems in this case are created on the secondary side of the Utility transformer. It could have taken weeks to find and fix all of the problems, but installing a **Phaseback VSGR** solved them. Note the Voltage Harmonic Spectrum = 3.56GHz highest magnitude, which is similar to that of Solar Flare or EMP (electromagnetic pulse), was removed by **Phaseback VSGR**.

This case study is just one of many examples where customers have saved money, time, equipment, and most importantly, the lives of their employees. www.phaseback.com

Benefits Provided By Phaseback VSGR (Voltage Stabilizing Ground Reference):

1. Arc Flash/Arc Fault Protection: Automatically prevent 85% of events	7. Eliminate Voltage Harmonic Noise on Ungrounded Systems. See Note 13 below.
2. Eliminate Voltage Spikes and single phase Voltage Sags	8. Correct Voltage Waveform Distortion
3. Correct Phase Voltage / Ground Imbalance	9. Correct Noisy Ground Reference & Frequency
4. Correct Phase Loss from High Impedance Grounds	10. Prevent Arcing Ground Faults and Alarm
5. Maintain Phase Angle Differential 120°	11. Increases Operational Efficiency- Reduce kW and Ground Current
6. Correct Phase Voltage Instability	12. AFPT = REMOVE Current & Voltage Harmonics plus the other 11 items above. Note 12.

Notes: 12.**AFPT** provides the "Perfect Electrical System" = **Transformer** + **VSGR**. 13. **VSGR** is effective on 10 points above, and for Grounded WYE, we offer the **Harmonic Silencer** for harmonics only on 3 phase Grounded WYE systems.