

Power Quality Analysis, Electric Power Consumption Optimization, Electrical Load Balancing, Power Factor Correction, Lighting Consumption Optimization

-During our fifteen years work we learned that the process controls equipment is often extremely sensitive to Electric Power Quality; equipment has been reported to trip when the voltage drops below 80% for a few cycles. This is due to using state of the art electronic and microprocessor based components and assemblies such as PLC's, PC's , Servo Drives, HV Controllers etc.

-These components require a good quality electric power supply without:

Power interruptions

- Voltage sags and swells
- Frequency variation
- Voltage and Current imbalance
- Harmonic Voltage distortion
- Harmonic Current distortion
- Periodic Voltage notching
- Ripple signals
- High-frequency voltage noise

	R1	L2	L3	Capacit
GenP1	0.75	0.78	0.78	0.78
Frequency	59.1	58.1	58.1	
Amplitude (V)	236.1	236.9	236.6	
Amplitude (A)	181.2	184.6	184.6	
Amplitude (W)	141.1	146.2	141.2	
Power Factor	0.85	0.87	0.87	
Power (kW)	8.8	1.8	0.3	
Power (kVA)	8.8	1.8	0.3	
Power (kVAr)	0.3	0.3	0.3	

ISS Methods of reducing Electrical Energy Consumption

- Optimum cable sizing-The cable sizing recommended by NEC is NOT always the optimum one.
- Power factor correction
- Electronic controls are also preferable to compressed air where possible. DC drives are preferable to clutches.
- Adjustable frequency drives for AC motors have good application on centrifugal loads. Control valves can be eliminated for pumps. The soft start feature of a VFD should reduce mechanical maintenance. Economic justification is highest where the pump or fan normally runs at considerably less than its capacity. The use of inverters increases the need for power factor correcting capacitors.
- Programmable thermostats and computerized controls are easily justified by the energy savings gained through optimizing the running of large air conditioning equipment.

INOVISION'S GREEN ENERGY SOLUTIONS

Our mission for Alternative Energy is to promote, implement, service and support the best cutting edge technologies in Solar and Wind Systems