



Voltage Outages or Power Failures appear, at first glance, to be simple to diagnose. But there are some ways to fine-tune the diagnosis and the data interpretation.

	<p>Slow Voltage Decay</p> <p>When voltage drops off slowly, over several cycles, the cause of the outage is most likely at the utility level, or at a main facility disconnect. Rotating loads (typically motors) in the facility or at other utility customers continue to turn, generating electricity to back feed the electrical system until they stop turning.</p> <p><i>The longer the decay, the further away the source of the outage.</i></p>
	<p>Frequency Shift and Voltage Decay</p> <p>When voltage drops off slowly, with a shift in frequency, it usually indicates that filter elements (inductors and capacitors) are resonating and feeding the load.</p> <p>Typically, a power conditioner might be installed, and when power is switched off nearby, the power conditioner energy storage permits a small resonant decay. However, the waveshape is not sinusoidal, and the frequency is not stable.</p>
	<p>Immediate Voltage Cut-Off with High Frequency Transients</p> <p>When power is switched off close to the monitoring point or load, the voltage drops off immediately, as at left. If the outage is the result of a mechanical switch (circuit breaker or contactor) then high frequency voltage transients can be seen.</p> <p>Check the current to see if a current surge or inrush caused an overcurrent device to trip!</p>