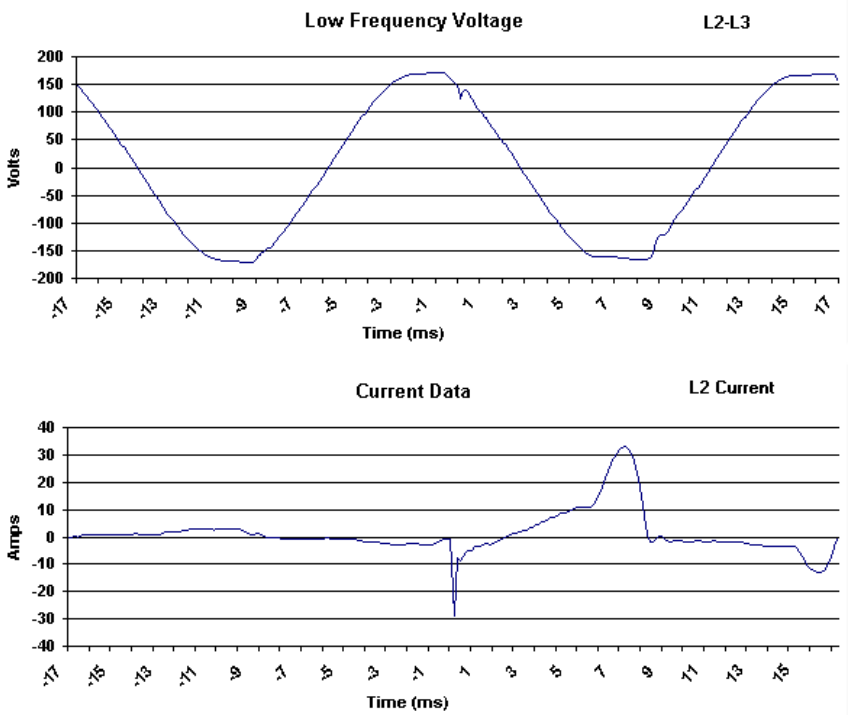
PQS-09: Load Generated Impulses

Rx Monitoring Services
Power Quality Snapshot

Voltage impulses can be created at the utility level, within the facility, or by the sensitive load itself. Examining the low frequency voltage and current data associated with impulses provides useful clues to determining the source of the impulse.

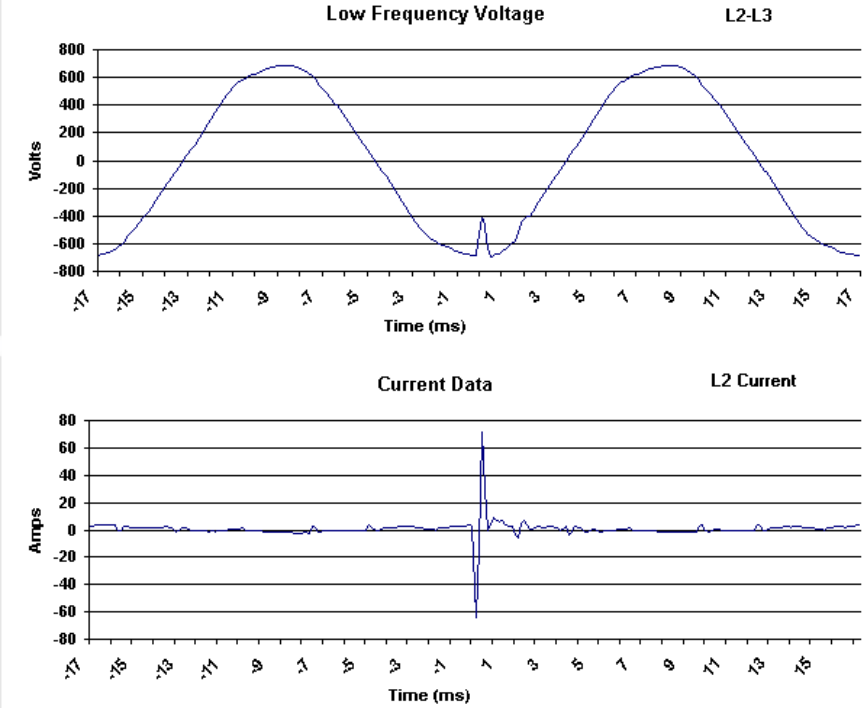


Subtractive Impulse Generated by the Load

A subtractive impulse is one that moves towards the zero volt level. Here, a negative going impulse on the positive half-cycle is seen on the low frequency voltage waveform. Subtractive impulses are often caused by load switch-on. But which load?

The current waveform shows a simultaneous surge, followed by an inrush on the next half cycle.

Something within the load being monitored switched on, and that caused the impulse!



Subtractive Impulse Generated Externally

Here, another subtractive impulse appears to be related to a load turn-on. And indeed, the current data appears to support a load generated diagnosis.

However, notice that the RMS current does not increase on subsequent cycles. No load turned on!

Instead, filter capacitors within the load being monitored were reacting to the impulse generated at the utility or facility level.

This type of impulse needs to be addressed!