

Power Quality Issues - Part 2 - Dips and Swells

Continuing on from the previous article on the issue of harmonics, with an electrical installation, the usual safety first – General Manager of Electrical Services (GMS), discusses the symptoms and effects of dips and swells on the electrical network, and shows that can be taken to mitigate any problems.

When a customer purchases electrical equipment an electrician being a **practitioner** (as per the general code of practice) is required to provide a written statement to explain why the equipment is suitable for the use of electrical energy. This is a common activity to ensure compliance with the requirements of the Electricity Regulations.

It is often apparent to practitioners that a major concern is to be supplied a voltage and frequency that is within specifications, as called as **European Standard EN50160** “Voltage characteristics of electricity supplied to public distribution networks” and known to IEC 61000-4-30 as a standard test for transient power quality disturbance of the voltage of a network supply system. It is often the voltage and/or frequency variations that are the most common power quality issues, which are:

The reader may be familiar with the above for voltage disturbances such as dips and swells, which

are defined as a result of a variation of power supply to a network and affect the supply voltage over a time interval, and by definition, a variation in voltage results in the fact that an appliance will be affected. For a number of reasons, the frequency and characteristics of voltage dips and swells are not constant, and are dependent on the nature of the network and the nature of the supply.

What are voltage dips and swells?

A voltage dip is any variation in voltage that is a sudden decrease in the supply voltage of a network. It is often, normally, due to a variation in the supply voltage to a network. A dip is a change in voltage that is not a result of a change in voltage of a network. The nature of a voltage dip is often in the form of a sudden change in voltage. It is often the result of a sudden change in voltage. It is often the result of a sudden change in voltage. It is often the result of a sudden change in voltage.



Figure 1: A dip in voltage for a network

Figure 2: A dip in voltage for a network