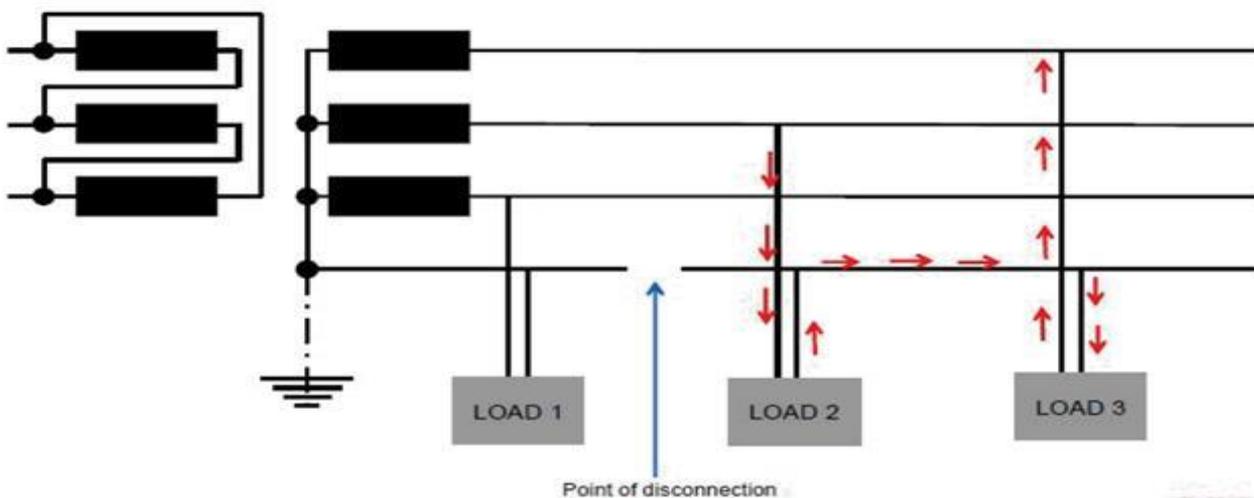


## INFORMATION BULLETIN FROM THE NATIONAL WIRING RULES COMMITTEE ETCI

The **ETCI** (Electro Technical Council of Ireland) National Wiring Rules committee (**TC2**) is considering the introduction of a new clause in ET101 covering the installation (if deemed necessary by the installer) of a Power frequency Overvoltage Protective Device (known as a “POP” device). Its purpose, when installed, is to reduce or eliminate the possibility of damage to an electrical installation and connected electrical appliances / equipment that may result from an unexpected loss of the neutral conductor.

In simple terms the effect from a break in the return path of the circuit example shown below is dependent on the impedance of the connected loads in each respective phase connected downstream of the “point of disconnection”. If each affected single phase load had the same impedance, the voltage appearing across each load should be the same (balanced) i.e. 230V AC. However in a system where individual single phase loads are connected, it would be very unlikely that each load impedance would be the same as its neighbouring phase. The outcome in this situation would be an unbalanced voltage distribution across each downstream connected single phase load. This could result in a voltage level approaching line voltage (400V) appearing across the single phase load with the higher impedance. In the example shown the voltage across Load 1 would be unaffected i.e. it would remain at 230V. However Loads 2 and Load 3 would experience the outcome as described above.



Many experienced electrical contractors and consultants will be familiar with the damage and the potential danger that results from this type of fault. In most instances, and to make matters even worse, the higher impedances are associated with appliances / equipment containing expensive electronic components. These connected loads are rated for 230V. Product standards for conditions of normal use do not take into consideration this type of situation where sustained voltages approaching 400V may unfortunately occur.

This is an expensive and distressing experience for any electricity user but more importantly it introduces a potentially dangerous situation which might be reduced or perhaps avoided by the use of the POP device.

The National Wiring Rules committee TC2 would welcome any comment regarding this proposal to introduce an additional clause in Chapter 44 of the National Wiring Rules ET101 introducing a choice to install this particular device.

For further information regarding the actual product standard please refer to IS EN 50550. You may preview or purchase this standard at [www.standards.ie](http://www.standards.ie)

Jim Keogh Chairman TC2 ETCI