

# THE DESIGN, CONSTRUCTION AND USE OF CAPACITOR DIVIDERS FOR THE MEASUREMENT OF HARMONICS AND TRANSIENTS ON HIGH VOLTAGE EQUIPMENT

The purpose of this report is to outline the differences in construction of various capacitor divider devices for measurements of harmonics and transients in high voltage overhead lines, and their effect on frequency characteristics.

The two principal factors which appear to govern the high frequency performance of a capacitor divider are good high frequency performance of the individual capacitors, and simplicity of construction.

It is obvious from the effects observed that there is some doubt about the performance of the capacitor dividers described at frequencies above 5MHz. In view of the fact that vacuum circuit breakers are known to have breakdown times, on closing, of the order of tens of nanoseconds, it is essential that a design of divider be investigated and developed capable of resolving such very fast edges. It is possible that very fast transients are being generated, capable of causing damage to semiconductor equipment, which measurements have so far failed to reveal.