

## **Appendix E Guidance for the use of multi core Metering cables.**

### CoPs1 and 2 Review

Multi core cables are predominately used to provide CT and VT signals to the Meter, however such arrangements may cause additional errors that are not readily apparent to the Metering System designer. This guidance provides information that should be considered when using multi core cables for Metering, particularly if used over long cable runs.

Consideration shall be given to the cross sectional area of the conductors of multi core cables:

- In CT circuits the cabling resistance is likely to represent an appreciable component of the CT burden and care should be taken to ensure that the CT overall burden is not exceeded;
- For the VT circuits, cabling and fuses introduce voltage drop errors. Low amperage fuses tend to have a relatively high resistance value and are variable between fuses of the same type and rating. Careful selection of fuses, fuse holders and the doubling of cores can be used to mitigate these effects.

The proximity of CT and VTs signals in multi-core cables can cause errors due to capacitive coupling from the voltage to the current circuits. The effect of this coupling is more prevalent at low loads and with long cable runs, in particular with 1 amp rated CTs. One possible symptom of this condition is that the Meters may advance under no load conditions (circuit energised but with no load current). This coupling effect may be eliminated by careful allocation of cable cores, or by running CT and VT signals in separate cables.