Instrument Transformer – Part 3
Current Transformers – Metering Accuracy

NCEES® PE Power Reference Handbook doesn't contain specific details on this topic

Accuracy of a CT is expressed as a combination of accuracy class and burden as shown below

Accuracy Class (0.3%, 0.6%, 1.2% etc.) + **Burden** (0.1, 0.2, 0.5 etc.) = 0.3B0.1, 0.6B0.5 etc.

0.3B0.1 means that CT has 0.3% accuracy at 100% rated current for burden < 0.1 Ohm.

0.6B0.5 means that CT has 0.6% accuracy at 100% rated current for burden < 0.5 Ohm.

More about accuracy classes…

❑ At < 100% rated current, 2X error is allowed for 0.3, 0.6, 1.2 accuracy class CTs.

❑ 0.15 accuracy class CTs maintain 2X (0.3%) accuracy between 5% and 100% rated current.

❑ 0.15S accuracy class CTs maintain 0.15% accuracy between 5% and 100% rated current.

❑ Standard Relay Accuracy is expressed as follows:

C or T 100, C or T 200, C or T 400, C or T 800

❑ 'C' indicates that CT has low leakage flux and accuracy can be 'calculated' before manufacturing.
   Applies to bushing, window and bar type CTs.

❑ 'T' indicates that CT can have high leakage flux and accuracy must be 'tested' in factory .
   Applies to wound type CTs.

❑ 100/200/400/800 identifies the <u>max. secondary voltage at 20X rated current without exceeding 10%</u> <u>ratio error at rated burden.</u>

❑ C100/200/400/800 have standard burden ratings of B-1 (1Ω), B-2 (2Ω), B-4 (4Ω) and B-8 (8Ω).

❑ If a CT is used at lower tap, its (new) max. secondary voltage can be calculated as follows:

$$V_{s-new} = \frac{lower\ tap}{rated\ tap} \times C - rating$$