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THE EFFECTS OF BURDEN AND LOAD IN REVENUE METERING WITH CURRENT TRANSFORMERS

This can best be described using the Current Transformers Ratio Correction Factor or "RCF". The "RCF" can be multiplied by the primary of the Current Transformer to obtain the amount of ampere error in the billing calculation. A value greater than "1.0000" means you are supplying more amperes than you are measuring and a value less than "1.0000" means you are supplying less amperes than you are measuring. An example would be as follows:

If you have a 200:5 Current Transformer with 300 amperes on the primary the output to the secondary would be "7.5" amperes. If the Current Transformer had a "RCF" of "1.0020" the true primary amperes to get a "7.5" ampere secondary output would be "300.6" primary amperes. If the Current Transformer had a "RCF" of ".9980" the true primary amperes to get a "7.5" ampere secondary output would be "299.4" primary amperes.

It is important to understand that the lower the primary load in terms of its load percentage on the Current Transformer the higher the Ratio Correction Factor will be and also the higher the Burden the higher the Ratio Correction Factor will be. Since Current Transformers are compared for accuracy with primary loads of 10%, 100%, 100% times the Rating Factor and at Burdens of "0.1" and at the maximum rated Burden, the most extreme readings of a Current Transformer will occur as follows:

The highest "RCF" will occur at 10% primary load at the maximum rated Burden.

The lowest "RCF" will occur at 100% times the Rating Factor primary load at a Burden of "0.1".