

Memo

To Approved test houses
Metering equipment providers
From Ron Beatty
Date 4 April 2016
Subject Metering installation accuracy

There have been a number of queries relating to the use of certified measuring transformers in certified metering installations where a measuring transformer's burden is lower than the range used in the measuring transformer's calibration.

The Authority would like to clarify to all participants that if a measuring transformer has been certified as accurate by an approved test house (ATH), the transformer's burden must be within its calibration range. If the measuring transformer is used outside of its burden calibration range, the measuring transformer may not be accurate. An inaccurate measuring transformer may affect the accuracy of the metering installation.

The Electricity Industry Participation Code 2010 (Code) requires an ATH to ensure that an approved calibration laboratory or a class A ATH has confirmed that all measuring transformers comply with the standards in Table 5 of Schedule 10.1 (clause 3(b) of Schedule 10.8). If the errors are within the limits set by the standards, the transformer has passed the test and may be certified as accurate within that range of burden (clause 3 of Schedule 10.8 and Table 5 of Schedule 10.1).

If a measuring transformer is installed in a metering installation with the burden lower than the lowest test point used in the measuring transformer's calibration, then burdening resistors must be used to ensure that the measuring transformer operates within its calibration range.¹

For clarity, the requirements for metering components, metering installations, certifications and metering records are set out in Part 10 of the Code.

The requirements of the Code include the following:

1. There must be a metering equipment provider (MEP) for every category 1 to 5 metering installation used for Code purposes (clause 10.18(3))
2. All metering installations and metering components in a metering installation must be certified (clause 10.38 and clause 43 of Schedule 10.7)
3. Measuring transformers are just one of the components that require certification in a metering installation, and certification is dependent on in-service burden. If the in-service burden is less than the lowest test point specified in the standards listed in the Code, then accuracy must be confirmed by the manufacturer or, if the primary voltage of the measuring transformer is greater than 1kV, by a class A

¹ Some measuring transformer manufacturers provide specific advice on potential inaccuracy of a measuring transformer if it is used outside of its calibration range.

ATH calibrating the measuring transformer at the in-service burden (clause 2(1)(c) of Schedule 10.8)

4. Metering installations and metering components must comply with the accuracy and standards specified in Schedule 10.1.

If an ATH certifies a metering installation with under-burdened measuring transformers, and it has not complied with clause 31(7) of Schedule 10.7 of the Code, then:

1. The ATH will breach clause 31(7) of Schedule 10.7 and also clause 43 of Schedule 10.7 by failing to grant certification in accordance with Part 10
2. The metering installation may be classed outside the applicable accuracy tolerances specified in Table 1 of Schedule 10.1, or not be fit for purpose, and if so, the metering installation certification is cancelled (clause 20(1)(b) of Schedule 10.7)
3. In certifying the metering installation, the ATH may breach clause 21 of Schedule 10.7 by certifying a metering installation that exceeds that maximum permitted error set out in Table 1 of Schedule 10.1.



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