Title: Calibrate revenue metering current transformers in the electricity supply industry

Level: 5
Credits: 12

Purpose: People credited with this unit standard are able to: determine current transformer calibration requirements; connect and operate current transformer calibration equipment; report current transformer calibration results; and analyse calibration results and determine further action if required.

Classification: Electricity Supply > Electricity Supply - Metering

Available grade: Achieved

Explanatory notes:

1. This unit standard is intended for, but not restricted to, workplace assessment. The range statements across the unit standard can be applied according to industry specific equipment, procedures, and processes.

2. Safety of personnel and plant must be a priority throughout the assessment. If the safety requirements are not met the assessment must stop and the candidate will be assessed as not yet competent.


4. ‘Industry requirements’ include all industry and workplace documented policies, procedures, specifications, business, and quality management requirements relevant to the workplace in which assessment is carried out.

5. Practical exercises should be used for training and assessment wherever possible.

6. A current transformer cannot be adjusted, however, errors may be corrected by addressing the magnitude of the connected secondary burden, eg installing loading resistors etc.
Outcomes and evidence requirements

Outcome 1

Determine current transformer calibration requirements.

Evidence requirements

1.1 Primary current requirements are determined in accordance with equipment under test and industry requirements.

Range includes but is not limited to – ratio, location, rating.

1.2 Safety requirements are identified and implemented in accordance with industry requirements.

Range may include but is not limited to – people, power system requirements.

1.3 Test equipment is selected in accordance with industry requirements.

Range may include but is not limited to – primary current source and leads, standard current transformer and burden, comparator, current transformer under test burdens, burden measurement equipment, influence measurement equipment.

Outcome 2

Connect and operate current transformer calibration equipment.

Evidence requirements

2.1 Calibration equipment is connected in accordance with industry requirements.

Range may include but is not limited to – primary current source, standard current transformer and burden, comparator, current transformer under test burden, burden measurement equipment, influence measurement equipment.

2.2 Standard current transformer burden is determined and connected in accordance with industry requirements.

2.3 Burden of the current transformer under test burden is determined and connected in accordance with industry requirements.

Range may include but is not limited to – 25% of rated burden, 100% of rated burden, in-service burden.

2.4 Current transformer under test is demagnetised in accordance with industry requirements.
2.5 Current transformer calibration is conducted in accordance with industry standards and industry requirements.

Range includes but is not limited to – ratio and phase error measurement at required primary current values and connected burdens, burden measurement.

2.6 Influences are measured and recorded in accordance with industry requirements.

Range may include but is not limited to – wave form distortion, temperature, magnetic interference.

**Outcome 3**

Report current transformer calibration results.

Range may include but is not limited to – calibration report, error application, uncertainties, influences.

**Evidence requirements**

3.1 Reported information is completed and processed in accordance with industry requirements.

3.2 Uncertainties are calculated in accordance with industry requirements.

3.3 Calibration information is recorded, and calibration report produced and filed within the scheduled time-frame and in accordance with industry requirements.

**Outcome 4**

Analyse calibration results and determine further action if required.

**Evidence requirements**

4.1 Burden results are analysed in accordance with industry requirements.

4.2 Calibration results are analysed in accordance with industry requirements.

Range may include ratio and phase errors at rated burden and in-service burden.

4.3 Further action required for revenue metering current transformers is identified, recorded, and communicated to appropriate personnel in accordance with industry requirements.

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This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.
Status information and last date for assessment for superseded versions

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<tr>
<th>Process</th>
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Consent and Moderation Requirements (CMR) reference 0120

This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.

Please note

Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMR). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.