

# Current transformer (CT) testing - a hassle free approach

Cost effective solution for CT Testing to help you:

- comply with the national electricity rules (NER) for CT testing
- ensure equipment accuracy, safety and reliability

Yurika is one of Australia's largest metering businesses, delivering innovative multi-utility metering solutions. As a registered meter provider, Yurika is required to identify, scope and run tests for Current Transformers (CT's) on sites to ensure equipment accuracy, safety and reliability.

## CT testing background

Yurika provides a low voltage Current Transformer (CT) secondary injection testing service that involves testing CT's for errors, as outlined in the Australian Standards for CT's.

### What is a Current Transformer (CT)?

A Current Transformer (CT) produces a reduced current accurately proportional to the current in the circuit. This current is measured using a CT meter. The meter data is transferred to the Retailer for the formulation of the electricity charges in the invoice.

To ensure that the measurements are accurate, it is important to check that the CT is measuring correctly. This can be done by carrying out a CT Test.

### What is CT testing?

CT testing is carried out on the current transformer equipment. The test is to check if the device is performing as per standards defined by the Australian Energy Market Operator (AEMO).

The test ensures that the device is measuring the electricity consumption accurately, and in a safe and reliable manner.

### Why do you need a CT test?

According to the National Electricity Rules (NER), all CT's must be tested for maintenance every 10 years.

The testing ensures that all devices meet the standards set by AEMO.

### What is involved in CT testing?

- Isolation of the CT (this means a power outage will take place for the duration of the test)
- Conducting a series of tests (to check if the equipment is safe, accurate and reliable)
- Recording the test results for analysis preparing a report with the test outcome

All tests are carried out as outlined by the AS60044.1-2007 and AS1675 standard.

### CT testing duration?

CT tests usually take up to an hour. But to allow for additional safety checks and rectification (if applicable), the duration quoted is 4 hours.

This means that typically the power outage will be for about 1 hour.

### What is a CT Test report?

After the test is completed Yurika prepares a detailed report outlining the test details for each site. The report contains generic information about the site, information about the test conducted, results and raw test data.

**Equipment: Total (current transformers):**

| Quantity | Manufacturer/Model | CT Class | CT Type | Capable to Error |
|----------|--------------------|----------|---------|------------------|
| 17501    | WV                 | 0.5S2    | 1       | 0.05             |
| 17502    | WV                 | 0.5S2    | 1       | 0.05             |
| 17503    | WV                 | 0.5S2    | 1       | 0.05             |

See table for details

**Test Date:** 18/05/2013 7:41:26AM

**Test method:** Secondary Injection

**Test Conditions:** Ambient temperature between 15 and 35 degrees Celsius.

**Test Requirements:**  
The testing covered in this report is a requirement of chapter 7 of the National Electricity Rules (NER). Current transformers must be tested every 10 years. The Australian Standard to which current transformers must comply is AS60044.1-2007 or AS1675-1986 where relevant.

**Glossary:**

- **AS1675** - A reference number for each test, unique to Yurika.
- **Rated Current** - The maximum load allowed on the CT (load, measured in Volts Amperes (VA)).
- **Rated Error** - Error margin of the testing instrument.
- **Time and location** - The date and time the CT was tested, this will correlate with the power outage necessary to perform the testing.
- **Accuracy Class** - Level of current error to be made a load.
- **Primary / Rated primary current of the CT under test**
- **Secondary / Rated secondary current of the CT under test**
- **Device Code** - A string of characters.
- **Device Code** - Utility plant number or not available manufacturer's serial number.
- **Error** - The difference between the tested and measured current through the CT.
- **Allowed Error** - The maximum error allowed at that injection and burden level (AS60044.1-2007 or AS1675-1986 where relevant).
- **Burden %** - Percent of rated burden at which the test was conducted.
- **Phase** - An indication whether the CT has had the required equipment (AS60044.1-2007 or AS1675-1986 where relevant) at that injection and Burden level.

**Definition:**  
**Negative** -> ratio error means that the actual secondary current is less than the nominal secondary current.  
**Positive** -> ratio error means that the actual secondary current is more than the nominal secondary current.

**Uncertainty of Measurement:**

| Ratio | Injection Current (%) |       |       |       |       |
|-------|-----------------------|-------|-------|-------|-------|
|       | 5                     | 10    | 20    | 50    | 200   |
| 100%  | ±0.2%                 | ±0.2% | ±0.2% | ±0.1% | ±0.1% |
| Error | ±0.2%                 | ±0.2% | ±0.2% | ±0.1% | ±0.1% |
| Phase | ±0.5°                 | ±0.5° | ±0.5° | ±0.3° | ±0.3° |
| Error | ±0.5°                 | ±0.5° | ±0.5° | ±0.3° | ±0.3° |

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**Note:** A detailed fact sheet is available for the CT test report.

# CT testing services summary

Yurika provides a CT testing (secondary injection) service, involving the following:

Identification of the site/NMI/metering point to be tested (Retailer/Responsible Person (RP)\* notified of the possible site to be tested).

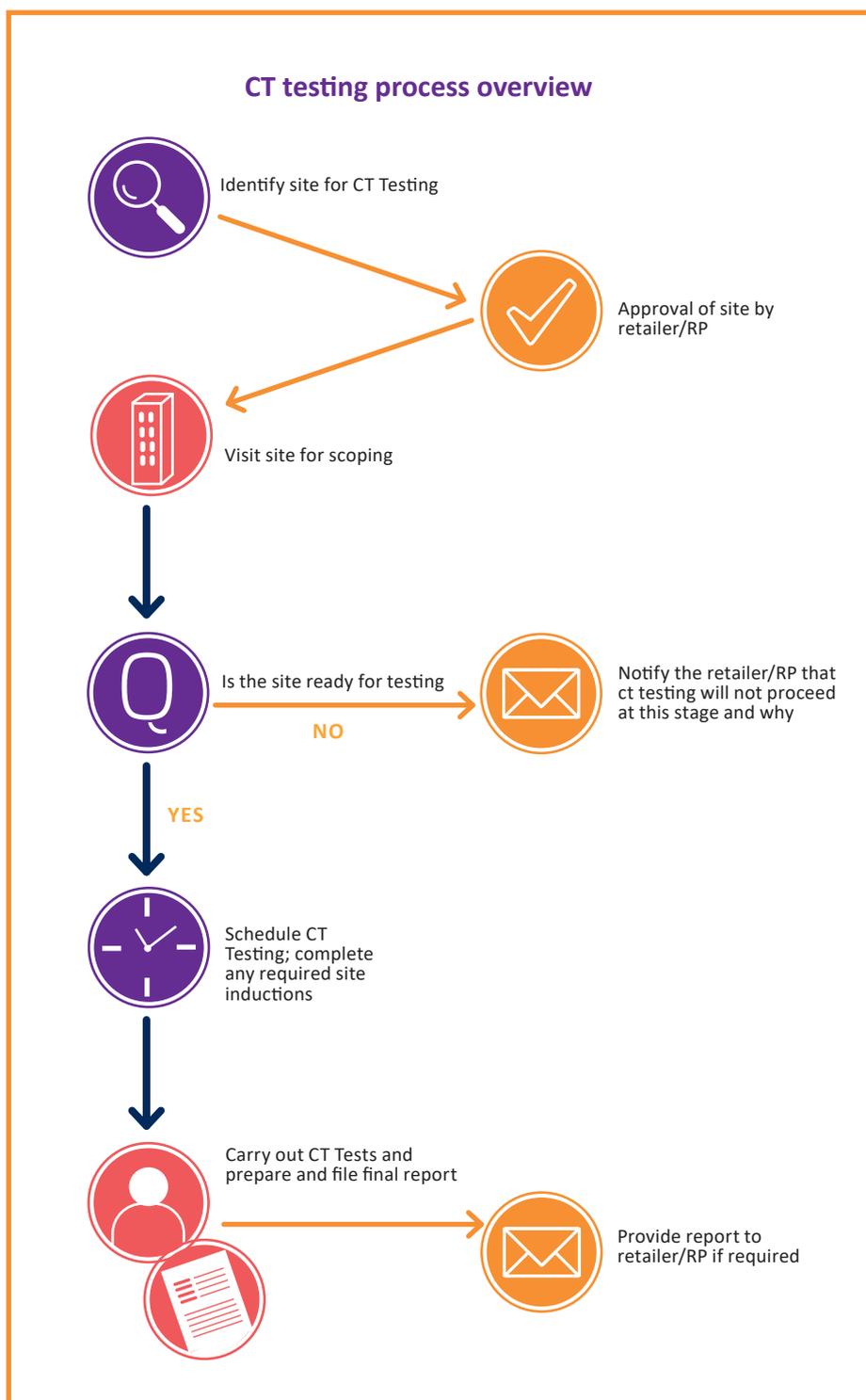
Approval of the site/NMI/metering point by the Retailer/RP.

Carry out a site visit/scope to confirm that test can be done and also to check the following:

- Identify any site induction requirements;
- Confirm that CT testing can be done;
- Find out if the CT testing can be done in normal working hours or after hours.
- Upon customer approval to proceed with testing - CT test work is programmed.
- CT test is carried out and a detailed test report is prepared.
- Test report is retained at Yurika and can be forwarded to the Retailer/RP if requested.

Note: if a site/NMI/Metering point cannot be tested, Yurika will notify the Retailer/RP along with the reason for why the test cannot be carried out.

\*Responsible Person (RP) - as per definition in the NER



Find out how Yurika can help you to with cost effective  
CT Testing for your site:

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