

South African Distribution Code

Metering Code

Version 6.0

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Issued by:

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Objectives

- (1) To ensure compliance with minimum requirements for tariff metering and energy trading metering installations.
- (2) To define responsibilities for metering installations.
- (3) To ensure that appropriate procedures are followed by the distributor of electricity (referred to as 'licensee' by *NRS057* and in this code) and its metering service provider regarding the maintenance, validation, collection, processing and verification of metering data.

1. Scope of Application

- (1) The Metering Code shall apply to:
 - (a) *Transmission Network Service Providers (TNSPs)*
 - (b) *Distributors*
 - (c) *Embedded Generators*
 - (d) *Generators*
 - (e) *Traders / Retailers*
 - (f) *Resellers*
 - (g) *Metering service providers contracted by participants*
 - (h) *Other Distributors connected to the TNSPs or Distribution System*
 - (i) *Other entities with equipment connected to the TNSPs or Distribution System*
- (2) The provisions for *customers'* rights and obligations in this code shall be referenced in the connection agreements with the *licensee*.

2. Application of the Metering Code

- (1) This code is applicable to:
 - (a) metering installations used for the measurement of active and (where relevant) reactive energy and demand (where relevant)
 - (b) the design of the metering installation
 - (c) the provision, installation, commissioning and maintenance of metering equipment
 - (d) the minimum requirements of equipment used in the process of electricity metering
 - (e) testing procedures for metering installations
 - (f) the collection and verification of metering data
 - (g) storage requirements for metering data, and
 - (h) standards for the competencies of *participants*.

3. General Provisions

- (1) *NRS057: Code of practice for electricity metering* specifies the minimum requirements that *metering installations* and *metering service providers* shall comply with. This code regulates conformance to these requirements.
- (2) The *licensee* shall only make use of metering equipment that has been certified by an accredited laboratory in terms of *NRS 057*.
- (3) Should there be a conflict in the interpretation between this code and any other national rationalized specification, this code shall take precedence.

4. Metering requirements

4.1 Installation design requirements

- (1) The licensee shall ensure that the design of a metering installation complies with all requirements as specified in *NRS057* including the following:
 - a) The requirements for main and check or backup metering equipment;
 - b) The requirement for full four quadrant metering to be installed where active and reactive energy flow is in both directions.
 - c) The requirements for primary plant (Current and Voltage instruments transformers) where relevant.
 - d) The requirements for the meters specified to cater for the requirements of the applied tariff to the *customer*;
 - e) The requirements for metering data retrieval equipment to be catered for in the design based on the requirements of the licensee. For all *TNSPs* metering installations equipment shall be installed to allow for remote interrogation of metering data.
 - f) Where *AMR (automated meter reading)* is utilised for large customers then the requirements of *NRS071* shall be complied with.
- (2) Metering equipment shall preferably be installed at the *point of supply* which defines the commercial boundary between the *licensee* and the *customer*. Where this is not possible, the metering point shall be located at the point agreed between the *licensee* and the *customer*.

4.2 Metering equipment installation

- (1) Where own metering staff or metering *service providers* (as defined in *NRS 057*) are contracted for any work related to metering, the *licensee* remains accountable to ensure compliance with the requirements of the metering code and the technical requirements referenced therein. The *Distributor (or licensee)* shall thus only appoint own metering staff or metering service providers that have the necessary skills and authorization to install metering equipment. The skills requirements as specified in *NRS057* shall be adhered to.
- (2) Only equipment approved by the *licensee* shall be installed at a metering installation. The *licensee* shall maintain a list of approved equipment for metering installations.
- (3) All primary and secondary equipment shall be calibrated before installation as specified in *NRS057*.
- (4) Commissioning of equipment shall be done following procedures that cater for the minimum testing requirements as specified in *NRS057*.

4.3 Metering equipment maintenance

- (1) The electricity *Distributor (or licensee)* shall appoint own metering staff or metering *service providers* that have the necessary skills and authorization to maintain metering equipment. The skills requirements as specified in *NRS057* shall be adhered to.
- (2) Metering installations shall be maintained according to the requirements and frequency specified in *NRS057*.
- (3) For prepayment meters the inspection procedure shall be followed as stated in *NRS047*.

4.4 Metering equipment access

- (1) Metering equipment owned by the *licensee, retailer or metering service provider* but installed on the *customer's* premises shall remain the property of the *service provider*.
- (2) *Customers* shall not tamper or permit tampering with metering equipment owned by the licensee or any other *service provider*.
- (3) Except with written consent by the owner, access by *customers* or *customer* representatives to meters, metering circuits and metering data shall be restricted to ensure that the integrity of the metering device, metering installation and meter data are not at risk.
- (4) *Customers or customer* representatives shall not have direct access to meters to obtain any metering information. Direct access includes access gained by downloading the metering information from the meter directly through the digital communication interface, or remotely through any communication media such as a PSTN or GSM modem, or any other means

other than visual access. Requests from *customers* to read their own meters shall not be unreasonably refused.

- (5) Except with written consent by the owner, *customers* or *customer* representatives shall not install any metering or other equipment integrated into the licensees *CT* and *VT* metering circuits, test blocks, terminals, or any portion forming part of the electrical metering installation.
- (6) *Customers* shall provide reasonable access to the metering equipment owned and operated by the *licensee*, *metering service provider* or *retailer* but installed on the *Customer's* premises provided an official identification is produced on request.
- (7) Where metering installation is situated in a restricted area, then a procedure (s) as stated in *NRS047*, applicable legislation and / or as agreed between the parties shall be followed to gain access to the equipment.
- (8) If a *customer* or his representative requires real time energy pulses (kWh & kvarh) at a metering installation, the licensee shall provide the real-time energy pulses through mutual agreement. The *customer* shall bear the costs of installation in such an event.
- (9) Any changes that may affect the parties' authorised and safe access to the metering equipment shall be reported as soon as it is brought to either party's attention.

4.5 Metering data access

- (1) Official metering data shall be made available by the *licensee* on request by the *customer* in a format agreed upon between the parties.
- (2) The *licensee* shall make available all formats at which it can provide data to the *participant*. All new formats shall be negotiated between the *licensee* and the affected *participant*.
- (3) The *licensee* shall store all metering data information in a central database for at least 5 years according to the requirements of *NRS057*. The *licensee* shall ensure that the database is maintained and continuously updated.
- (4) Non-standard data provision format may be provided by the *licensee*, where possible, at the expense of the requesting party.

4.6 Metering data retrieval

- (1) The frequency of meter reading shall comply with the requirements of *NRS057*.
- (2) *Licensees* shall ensure that the necessary data retrieval equipment and process are in place to achieve the meter read frequency as specified.
- (3) The metering data retrieval process for automated meter reading (AMR) on large power user installations shall be a secure process whereby meters or recorders are directly

interrogated to retrieve billing information from their memories. The retrieval process shall comply with the requirements in *NRS 071*.

- (4) Pre-payment metering installations are excluded from the requirements of section 5.6.

4.7 Data Validation and Verification

- (1) The *licensee* shall carry out data validation and verification in accordance with *NRS 057*.
- (2) In the event of a substitution being made to metering data, the licensee or any other authorised person responsible for metering data validation or verification shall consult with the *customer* about the substitution and the basis upon which the substitution was made. No consultation is required for, where practised, the domestic account 3 monthly reconciliation process.
- (3) The *licensee* shall maintain a journal according to *NRS057* of the substitution made and provide access to the record when requested by the *customer*.
- (4) Estimations shall be in accordance with *NRS 047*.

4.8 Metering Database

- (1) The *licensee* shall create, maintain and administer a metering database containing all information as specified in *NRS057*.
- (2) In the event of testing revealing that data in the metering database is inaccurate, the *licensee* shall inform all affected participants and corrections shall be made to the official metering data and the associated billing by mutual agreement.

5. Confidentiality of Metering Data

- (1) Metering data for use in energy trading and billing is confidential information and shall be treated in accordance with the Information Exchange Code.

6. *Customer* queries on Metering integrity and Metering Data

- (1) Where *customers* indicate they have a query or complaint related to metering, the *licensee* shall comply with the applicable requirements of *NRS 047*.

- (2) Any *participant* may request the *licensee* or *metering service provider*, to test a metering installation. Such a request shall not be unreasonably refused. The costs of such test shall be for the account of the *licensee* unless the metering equipment is found to be within specification, in which event the cost shall be borne by the requesting *participant*.
- (3) Alternatively, a *customer* may request an independent audit of metering installations done by approved metering *service providers*. The selection of the approved metering *service provider* shall be mutually agreed upon between the two parties. The requesting *participant* shall be responsible for any costs unless the metering installations are proved to be outside the defined standards.
- (4) If errors are found with the metering after testing or auditing then the *customers* account will be adjusted according to the rectified data.
- (5) The audit result shall be submitted to the *licensee* and the *licensee* shall respond to the *customer* within 30 calendar days on any account or metering adjustments proposed in the audit report.
- (6) *Customers* shall have the right to request an audit of the settlement process related to their account and the right to choose an independent third party qualified to perform the audit.
- (7) Should no agreement be reached on account or metering disputes between the *customer* and the *licensee* the dispute resolution procedure shall be followed as stipulated by in the Governance Code.