South African Distribution Code

Information Exchange Code

Version 6.0

July 2014

This document is approved by the National Energy Regulator of South Africa (NERSA)

Issued by:

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1. Objectives

(1) To define the reciprocal obligations of *participants* with regard to the provision and exchange of planning, operational and maintenance information for the implementation of the *Distribution Code*.

(2) Information exchanged between *participants* governed by this code shall not be confidential, unless otherwise stated.

2. Scope of Application

(1) The participants to whom the Distribution Information Exchange Code shall apply are:

(a) *Distributors*

(b) *Retailers / Traders*

(c) *Embedded Generators*

(d) *End-use customers*

(e) *Resellers*

(2) Information requirements specified in the other codes within the Distribution Code are supplementary to this code. In the event of inconsistencies between other codes and the Information Exchange Code with respect to information exchange, the requirements of the Information Exchange Code shall take preference.

3. Information Exchange Interface

(1) The parties shall identify the following for each type of information exchange:

(a) The name and contact details of the person(s) designated by the information owner to be responsible for provision of the information

(b) The names, contact details of, and the parties represented by persons requesting the information

(c) The purpose for which the information is required.

(d) The parties shall agree on appropriate procedures for the transfer of information.

(2) *Participants* (with installed capacity of more than 100kVA) shall exchange information, prior to commissioning, of new or altered equipment connected at the *point of connection* or changes to the operational regimes that could have an adverse effect on the *DS* to enable proper modifications to any affected *participants* networks and related systems.

4. Provision and exchange of Information during the planning and connection process

(1) Each *Distributor* shall have a *supply application form*, which shall request, at minimum, the information stipulated in this section.

(2) *Customers* requesting supply at low voltage shall provide the *Distributor* with the information relating to:

(a) New or change in connected loads

(b) Type of load to be connected to the *Distribution System*

(c) Requested connection date

(d) Proposed network connection point address.

(3) *Customers* requesting supply at *HV* or *MV* shall, in addition to 4. (2) above, provide the *Distributor* with the following information:

(a) Requested supply voltage

(b) Expected and / or projected maximum demand (in kVA)

(c) Expected load power factor

(d) Switched customer capacitor banks and reactors, which could affect the Distribution System

(e) Whether the load is capable of producing Harmonics as specified by equipment manufacturers

(f) The nature and type of process the supply is requested for

(g) Minimum required fault levels

(h) Start-up requirements

(i) Whether the *customer* has any standby generator.

(4) The *Distributor* may request *Customers* to provide information on the *Customer's* proposed installation and equipment at the *Point of Connection*.

(5) *Participants* shall exchange information relating to the protection of *Distribution System* and *customer* equipment protection coordination at the *point of connection*.

(6) Upon any reasonable request, the *Distributor* shall provide *customers* or potential *customers* with any relevant information that they require to properly plan and design their own networks/installations. This may include but not limited to:

(a) Nominal voltage at which connection will be made

(b) Method of connection, extension and/or reinforcement details

(c) The maximum and minimum fault levels

(d) Method of earthing

(e) Maximum installed Capacity at the *point of connection*

(f) Specification of any accommodation of equipment requirement

(g) Individual *customer* limits relating to:

i. Harmonic Distortion
ii. Voltage Flicker
iii. Voltage Unbalance

(h) Expected lead time of providing connection (following formal acceptance of terms for supply)

(i) An indication of network single contingency capability

(j) An indication of current network performance and power quality

(k) Cost of connection

(l) Range of current approved *tariff* structures

(7) *Customers* may be required to submit information as detailed in Appendix 2.

5. Operational Information

5.1 Commissioning and notification

(1) *Customers* shall confirm that all information given in the application for supply and additional information subsequently requested by the *Distributor* is correct before the commissioning.

(2) The commissioning dates shall be negotiated between the *parties. Participants* will agree on the type of operational data to be submitted prior to commissioning, which shall include test and commissioning report.

(3) The asset owner (*Distributor or Customer*) shall ensure that all equipment records, that affect the integrity of the *Distribution System* or relevant to the interconnection, are maintained for reference for the duration of the operational life of the plant. On request from the *Distributor*, information shall be made available within a reasonable time.

(4) The *Distributor* shall indicate to the *customer* what information is relevant in terms of this section.

5.2 Sharing of Assets and Resources

(1) *Distributors* sharing assets and resources shall enter into agreements for the provision and sharing of their assets, resources, services and information.

5.3 Additional Information Requirements

(1) Should one *participant*, acting reasonably, determine that additional measurements and/or indications are needed in relation to another *participant's* plant and equipment; the requesting *participant* shall consult with the affected *participant(s)* to agree on the manner in which the need may be met. The costs related to the modifications for the additional measurements and/or indications shall be for the account of the causal *participant*.

5.4 Communication and Liaison

(1) *Participants* shall establish a communication channel for exchange of information required for distribution operations, which may include the installation of Distributor's SCADA equipment at the *customer's* or *Distributor's* installation to facilitate the flow of information and data to and from the *Distributor* and / or Transmission control facilities.

(2) Each *participant* shall designate a person with delegated authority to perform the duties of *information owner* in respect of the granting of access to information covered in this code to third parties. A party may, at its sole discretion, designate more than one person to perform these duties.

(3) The *Distributor* shall take reasonable steps to exchange information with the *Distributor's* affected *customers* for *DS* and *TS* outages.

(4) *Customers* shall exchange information with the *Distributors* within an agreed lead time on all operations on their installations which may have an adverse effect on the *Distribution System* including any planned activities such as plant shutdown or scheduled maintenance.

(5) The communication facilities standards shall be set and documented by the *Distributor*. Any changes to communication facilities standards impacting on *participant* equipment shall be brought to the attention of the *participant* well in advance of the proposed upgrade.

(6) Any back up or emergency communication channels established by the *Distributor* and deemed necessary for the safe operation of the *Distribution System* shall be agreed upon by the *Distributor* and the *participant* affected.

5.5 Data Storage and Archiving

(1) The obligation for data storage and archiving shall lie with the *information owner*.

(2) The systems that store the data and/or information to be used by the *participants* shall be of their own choice and for their own cost.

(3) All data storage systems must be able to be audited by the *NERSA*. The systems must provide for clear and accessible audit trails on all relevant operational transactions. All requests that require an audit on a system shall be undertaken with reasonable notice to the *parties*.

(4) The *information owner* shall keep all information, except voice recorded information, in its original format for a period of at least five (5) years (unless otherwise specified differently in other parts of this code) commencing from the date the information was created.

(5) *Participants* shall ensure reasonable security against unauthorised access, use and loss of information for the systems that contain the information.

(6) *Distributors* shall use a voice recorder for historical recording of all operational voice communication with *participants*. These records shall be available for at least three (3) months except where there is an incident involved, in which case the requirements of any applicable legislation shall apply. The *Distributor* shall make the voice records of an identified incident in dispute available within a reasonable time period after such a request from a participant and/or the *NERSA*.

(7) An audit trail of all changes made to archived data should be maintained. This audit trail shall identify every change made, and the time and date of the change. The audit trail shall include both before and after values of all content and structure changes.

6. Confidentiality of information

(1) Information exchanged between *participants* governed by this code shall not be confidential, unless otherwise stated.

(2) *Participants* receiving information shall use the information only for the purpose for which it was supplied.

(3) The *information owner* may request the receiver of information to enter into a confidentiality agreement before information, established to be confidential, is provided. A pro forma agreement is included in Appendix 1.

(4) Confidential information shall not be transferred to a third party without the written consent of the information owner. *Parties* shall observe the proprietary rights of third parties for the purposes of this code. Access to confidential information within the organisations of parties shall be provided as reasonably required.

(5) The *participants* shall take all reasonable measures to control unauthorised access to confidential information and to ensure secure information exchange. *Parties* shall report any leak of information that is governed by a confidentiality agreement as soon as practicable after they become aware of the leak, and shall provide the information owner with all reasonable assistance to ensure its recovery or destruction (as deemed appropriate by the information owner).

APPENDIX 1: Information confidentiality

Sample confidentiality agreement for information transfer to third parties

CONFIDENTIALITY AGREEMENT

BETWEEN

……..

(HEREINAFTER REFERRED TO AS THE INFORMATION OWNER)

AND

……..

(HEREINAFTER REFERRED TO AS THE RECIPIENT)

IN RESPECT OF INFORMATION SUPPLIED TO PERFORM THE FOLLOWING WORK:

……
……

(HEREINAFTER REFERRED TO AS THE WORK)

ON BEHALF OF

……..

(HEREINAFTER REFERRED TO AS THE CLIENT).

1. The Recipient agrees to treat all information (hereinafter referred to as the Information) received from the Information Owner, whether in hard copy or electronic format, as strictly confidential.

2. The Recipient agrees to disclose the Information only to persons who are in his permanent employ, and who require access to the Information to perform their duties in respect of the Work on behalf of the Client.

3. Persons other than those described in Clause 2 above, including but not restricted to temporary employees, subcontractors, and sub-consultants, shall enter into separate Confidentiality Agreements with the Information Owner prior to receiving the Information.

4. The Recipient undertakes to use the Information only to perform the Work on behalf of the Client, and for no other purpose whatsoever.

5. On completion of the Work, the Recipient shall at his expense return to the Information Owner all hard copy material and electronic media containing the Information supplied to him by the Information Owner. The Recipient shall furthermore ensure that all duplicate copies of the Information in his or his employees' possession (electronic as well as hard copy format) are destroyed.

6. The Recipient shall take all reasonable measures to protect the security and integrity of the Information.

7. If requested to do so by the Information Owner, the Recipient shall forthwith at his expense return to the Information Owner all hard copy material and computer disks containing the Information supplied to him by the Information Owner. The Recipient

shall furthermore ensure that all duplicate copies of the Information in his or his employees' possession (electronic as well as hard copy format) are destroyed.

8. The Recipient shall report any leak of the Information, howsoever caused, to the Information Owner as soon as practicable after he/she becomes aware of the leak, and shall provide the Information Owner with all reasonable assistance to ensure its recovery or destruction (as deemed appropriate by the Information Owner).

Signed at …… on this the ……. day of …… by (full name) ……..in his/her capacity as …… on behalf of ……, the Information Owner

……

Signed at …… on this the ……. day of …… by (full name) ……..in his/her capacity as …… on behalf of ……, the Recipient

……

APPENDIX 2: Customer data – Planning and Connection Process

LV – Low Voltage, MV – Medium Voltage, HV – High Voltage

Information and data to be provided by Customers	**LV Customers**	**MV/HV Customers**
Demand and Network Data		
Connected load		
Maximum demand		
Type of load		
Maximum load on each phase		
Connection date		
Fluctuating loads		
Disturbing loads		
Electrical Diagrams and Connection Point Drawings		
Generation and transformation equipment		
Electrical circuits including overhead lines and underground cables		
Substation bus arrangement		
Grounding arrangement		
Phasing arrangement		
Switching facilities		
Circuit parameters from the Customer's substation to the Connection Point in the Distribution System		
Rated and operating voltage		
Positive sequence impedance		
Positive sequence susceptance		
Zero sequence impedance		
Zero sequence susceptance		
Power transformer data		
Rated MVA		
Rated voltage		
Winding arrangement		
Positive sequence impedance @max, min and nominal tap		
Zero sequence reactance		
Tap changer information		
Basic insulation level		
Switchgear information including circuit breakers, load break switches and disconnect switches at the connection point		
Reactive power compensation plant		
Rated capacity in MVAR		
Rated voltage		
Type of reactive power compensation plant		
Operation and controls		
Demand transfer capabilities in case the portion of the customer load is or can be supplied from another connection point		

APPENDIX 3: Embedded generator data – Planning and Connection Process

LV – Low Voltage, MV – Medium Voltage, HV – High Voltage

Information and data to be provided by Customers	**LV Customers**	**MV/HV Customers**
Demand and Network Data		
Connected load		
Maximum demand		
Type of load		
Maximum load on each phase		
Connection date		
Fluctuating Loads		
Disturbing loads		
Electrical Diagrams and Connection Point Drawings		
Generation and transformation equipment		
Electrical circuits including overhead lines and underground cables		
Substation bus arrangement		
Grounding arrangement		
Phasing arrangement		
Switching facilities		
Circuit parameters from the Customer's substation to the Connection Point in the Distribution System		
Rated and operating voltage		
Positive sequence impedance		
Positive sequence susceptance		
Zero sequence impedance		
Zero sequence susceptance		
Power transformer data		
Rated MVA		
Rated voltage		
Winding arrangement		
Positive sequence impedance @max, min and nominal tap		
Zero sequence reactance		
Tap changer information		
Basic insulation level		
Switchgear information including circuit breakers, load break switches and disconnect switches at the connection point		
Reactive power compensation plant		
Rated capacity in MVAR		
Rated voltage		
Type of reactive power compensation plant		
Operation and controls		
Demand transfer capabilities in case the portion of the customer load is supplied from an connection point		