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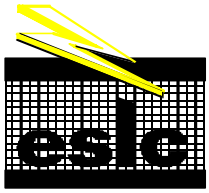
First edition

Rationalized User Specification

NRS 055:2000

CODE OF PRACTICE FOR REVENUE PROTECTION

Preferred requirements for applications in the Electricity Supply Industry



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on behalf of the
User Group given in the foreword
and is not a standard as contemplated in the Standards Act, 1993 (Act 29 of 1993).

Rationalized user specifications allow user organizations to define the performance and quality requirements of relevant equipment.

Rationalized user specifications may, after a certain application period, be introduced as national standards.

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Contents

Foreword

This code of practice was prepared on behalf of the Electricity Suppliers Liaison Committee (ESLC) and approved by them for use by electricity suppliers. The South African Revenue Protection Association (SARPA) draft documents *Code of conduct and practice, Rev 3* and *Guidelines for utility service providers (draft code of practice)* were used as a basis for this code of practice.

The code of practice was prepared by a Working Group, comprising the following members:

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N Ballantyne	Cape Town Municipality
H D Beck	East London Municipality
A J Claasen	South African Bureau of Standards (SABS)
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Annex D forms an integral part of this code of practice.

Annexes A, B, C, E, F, G and H are for information only.

Recommendations for corrections, additions or deletions should be addressed to the NRS Project Manager, c/o SABS, Private Bag X191, Pretoria 0001.

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Introduction

This code of practice, which is based on original documents from Eskom, was prepared to establish and promote uniform best practices for revenue protection by electricity suppliers and their contractors. The code of practice outlines the duties and required conduct of revenue protection personnel to ensure good revenue protection and, at the same time, maintain good customer relations and an acceptable service level. The application of the measures given in this code of practice should enable suppliers to be given a better risk rating by financial institutions. Although it is primarily intended for electricity suppliers, this code of practice could also be used by other service suppliers such as water, gas and municipal services.

The ESLC expresses the wish that all suppliers should adopt this code of practice insofar as their particular conditions will permit. Any differences between the requirements of this code of practice and the supplier's requirements should be submitted for consideration in future revisions of this code of practice.

Key words

Bypass; Credit control; Cut-off; Fraud; Inspection; Losses; Metering; Meters; Protection; Revenue; SARPA; Tampering.

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CODE OF PRACTICE

Code of practice for revenue protection

Preferred requirements for applications in the Electricity Supply Industry

1 Scope

1.1 This code of practice covers minimum requirements for the best practices in the field of revenue protection for electricity suppliers. It can also be used by other suppliers or by service providers where applicable.

1.2 It outlines the basic procedures, resources and training for the supplier and also for its contractors and customers, which should be in place to ensure good revenue protection.

2 Normative references

The following specification contains provisions which, through reference in the text, constitute provisions of this code of practice. At the time of publication, the edition indicated was valid. All standards and specifications are subject to revision, and parties to agreements based on this code of practice are encouraged to investigate the possibility of applying the most recent edition of the specification listed below. Information on currently valid national and international standards and specifications can be obtained from the South African Bureau of Standards.

NRS 047-1:1999, *Electricity supply - Quality of service - Part 1: Minimum standards.*

3 Definitions

For the purposes of this code of practice, the following definitions apply:

3.1 approved: Given approval in writing by the supplier or its authorized representative.

3.2 contractor (revenue protection contractor): A company or organization that provides revenue protection services for a supplier.

3.3 customer: A person or entity that purchases a commodity or service from the supplier.

3.4 revenue protection (RP): Any steps taken to prevent, minimise, eliminate or recover the loss of revenue owing to theft, nonpayment or any other similar causes, for services supplied.

3.5 supplier: An authorized supplier of electricity.

NOTE The supplier can also be a supplier of water, gas, or other services.

3.6 tampering: The unauthorized interference with the supplier's equipment or the removal of the supplier's seals from the protective devices or metering equipment.

3.7 theft: The unauthorized use of electricity owing to tampering.

4 RP requirements

4.1 General

4.1.1 RP may be undertaken by staff within the supplier's own organization or may be contracted out partially or wholly to another company or organization.

4.1.2 RP should be an ongoing process and not regarded as a once-off fix. Processes, procedures and resources for RP have to be set up on a permanent basis. Initially, additional effort and resources may be necessary to establish the RP processes, to take remedial action in the field and to catch up on payment arrears, etc.

NOTE Further information on RP can be obtained from the following sources:

a) South African Revenue Protection Association (SARPA) internet website http://www.sarpa.co.za

b) United Kingdom Revenue Protection Association (UKRPA) internet website http://www.ukrpa.org.uk

c) The International Utility Revenue Protection Association (IURPA) internet website http:///www.iurpa.org/no2theft/

4.2 RP organization

4.2.1 General

4.2.1.1 The supplier should set up an RP department to oversee and control the RP processes, even if some or all of the functions are contracted out.

4.2.1.2 The RP department should have links with and the involvement of other entities, which should include:

a) the customer or customer community representative;

b) the RP contractor or consultant (if any);

c) the supplier's accounting department or service provider;

d) the supplier's metering department or service provider;

e) the supplier's information technology (IT) department or service provider;

f) the supplier's training department or service provider; and

g) the relevant municipal authority (if the RP department is not part of the municipal authority).

4.2.2 RP forums

4.2.2.1 Representatives of all departments and entities involved in RP for a particular supplier should meet at least once a month (during the initial implementation of RP processes) to analyse revenue loss issues, to find workable solutions and to monitor progress. Once the RP processes are fully implemented and in the maintenance mode, the forums could be held less frequently or be discontinued.

4.2.2.2 The forums should control all RP projects throughout the area of responsibility of the supplier. Task groups should be appointed to deal with specific projects or problems.

4.2.2.3 RP forums should insist on regular communication to provide detailed feedback regarding statistics of RP projects.

4.2.2.4 The heads of the relevant departments and entities involved in RP should be responsible for implementing the measures agreed in the forums.

4.2.2.5 Details regarding successes in the RP field should be distributed, via SARPA, to everyone involved in RP.

4.3 RP procedures and processes

4.3.1 General

All processes and procedures that are directly linked to RP should be analysed and updated by the RP forum. Experts should be called in as necessary to evaluate these processes and procedures and recommend (or suggest) improvements that should be considered by the forum. The cost effectiveness of any RP actions should be considered.

It is important for the supplier to establish and be in control of all the procedures and processes listed in items 4.3.2 to 4.3.14.

4.3.2 Audits

a) How and when to audit (use 80/20 principle to select areas to audit),

b) the use of check meters or a statistical programme to highlight illegal connections,

c) the involvement of all the customers in a particular area, and

d) the use of a standard audit procedure and report sheet (a typical report sheet is shown in annex A. Suppliers are encouraged to adapt this form to suit their particular requirements).

4.3.3 Control of meters

a) Meters should be tracked and controlled at all stages of delivery, calibration, storage and issue,

NOTE Poor job control and checking can easily lead to corruption of data and loss of meters issued.

b) meter changes should be reflected in the database within 12 h,

c) returned meters should be checked for indications of tampering, and

d) data integrity should be insured in the database (for example, only valid meter numbers may be entered).

4.3.4 Meter installation commissioning (important on commercial installations)

a) Incorrect connections and incorrect current transformer (CT) ratios should be checked and

b) legal bypassing i.e. to establish supply when metering equipment is not available is not recommended and should only be considered if a verified audit trail and register are in place to rectify legal bypassing, and procedures are enforced to remove such bypassing in the shortest time possible.

4.3.5 Meter installation inspection

a) How and when (regular inspections are a deterrent to meter tampering),

b) notice procedures for informing a customer of an impending inspection, and for cases where access to inspect has been prevented (an example of a three-notice procedure is shown in annex B. The use of a carbon book for record purposes and proof of issuing the notice is recommended.), and

c) standard inspection report sheet (a typical report sheet based on suggestions by Revenue Protections Services (Pty) Ltd is shown in annex C) should be used.

NOTE Where possible, the inspection sheet should be headed by system-printed data giving all relevant details of customer, meter(s) and previous visits.

4.3.6 Meter identification, testing and calibration

a) The use of colour-coded CTs is recommended,

c) test and calibrate to manufacturer's recommendations,

NOTE An industry code of practice (CoP) for electricity metering (NRS 057) is in course of preparation. When published, and where applicable the recommendations of this CoP should be followed.

c) record serial numbers and constants of CTs and voltage transformers (VTs) in the database, and

d) record meter internal and external constants in the database.

4.3.7 Meter replacement and sealing

a) proper protection and sealing is important,

b) prevent fraud by use of sealing equipment (see annex D), and

c) the bypassing of faulty meters is not recommended and should only be considered if a verified audit trail and register are in place to rectify legal bypassing, and procedures are enforced to remove such bypassing in the shortest time possible.

4.3.8 Investigation of tampering and fraud

a) Appropriate actions should be carried out according to different levels of severity,

b) collection of evidence to enable successful prosecution (e.g.mark and store equipment, take photographs, compile statements), and

d) preparations for prosecutions and recovery of legal fees.

4.3.9 Billing and credit control

a) Accurate billing data should be given to customers,

b) regular follow-up of nonpayment,

c) control measures should be understood by all parties, and

d) billing systems should be checked for the correct application of meter constants.

4.3.10 Supply cut-off

a) Comply with the requirements of NRS 047-1,

b) notify before cut-off , and

c) take account of extenuating circumstances.

4.3.11 Supply reconnection

a) Payment of arrears and reconnection fee (a typical notification of disconnection of supply is given in annex E),

b) credit control policy that permits instalment payments to be arranged under certain circumastances,

c) notification of reconnection, and

d) compliance with requirements of NRS 047-1.

4.3.12 RP data (timeous and correct data is essential)

a) Data collection (minimum information should be as given in annex F),

b) timeous data entry into database is essential (data controller),

c) data integrity (verify and cross-check information), and

d) confidentiality of data (disclose only to designated supplier staff and not to any third party).

4.3.13 Use of RP contractors

a) Contractor's staff should be fully trained, and

b) the appointment of contractors should be in accordance with a standard contract. This contract will expand on the following items:

1) contractor's staff to be dressed in distinguishing outfits and to carry identification,

2) contractor's staff to not become involved in, or express opinions on, customer community politics,

3) third party damage (contractor to indemnify the supplier),

4) contractor's property (no claim against damage unless caused by negligence of supplier's staff),

5) collection of money (contractor to be responsible for any money collected from customers until it is deposited with an agreed financial institution),

6) contractor's staff to comply with all the supplier's safety requirements and also all relevant sections of the Occupational Health and Safety Act, 1993 (Act 85 of 1993, as amended), and

7) contractor's staff to ensure that their actions do not in any way cause a health or safety hazard to customers.

4.3.14 Legal framework

a) Actions to be taken against defaulters should be permitted in terms of bylaws and national legislation,

b) bylaws should be reviewed and revised when necessary to eliminate problem areas, and

c) updates should be obtained from other utilities (or from the SARPA website) on legal successes and failures.

4.4 RP database

4.4.1 A prime requirement of RP is an accurate, up-to-date database that should be used to trigger events in the RP processes.

4.4.2 The database should be a **relational database** (that is, one which has **no duplication of information**) and should be linked, on a network, to the supplier's other relevant databases, such as billing and maintenance. The system should be set up and be fully commissioned prior to the loading of RP project data.

4.4.3 The entering and updating of information should be made the responsibility of one or more fully trained data controllers.

4.5 Customers

4.5.1 Customer relations

4.5.1.1 The supplier and its contractors should always maintain applicable customer service levels as set up in terms of NRS 047-1 and should introduce and operate a customer care centre to support RP actions.

4.5.1.2 Customer care centre staff should be trained in customer relations, be familiar with local regulations and bylaws and be able to give the customer accurate information regarding his/her account, meter status, credit control policy and its implementation and, where appropriate, the steps to be taken to have the supply restored.

4.5.1.3 Premises and security measures should be set up to ensure the safety of staff when dealing with customers in person.

4.5.1.4 Field staff likely to be in contact with customers should be trained in customer relations and should refer the customer to the customer care centre for queries regarding the account.

4.5.1.5 Except where certain investigations require secrecy, customers should be informed (by hand-outs or other means) of impending RP actions.

4.5.2 Customer convenience

The convenience to the customer (time and place) of bill payment or token purchase can be an important consideration in an RP project and should be in accordance with NRS 047-1.

4.5.3 Service contract

Each customer should have a service contract that states the terms and conditions of the electricity supply. The supplier should take reasonable steps to ensure that the customer understands the implications of the service contract. A typical service contract is shown in annex G.

4.5.4 Community education

4.5.4.1 Where appropriate, a social programme should form part of any RP project dealing with residential communities. This programme should at least include meetings, workshops and hand-outs.

4.5.4.2 The topics for community education should include:

a) why residents must pay for the electricity they use;

b) what electricity will cost (tariffs, connection charges, typical costs per appliance use per month);

c) what a legal connection is;

d) what an illegal connection is, i.e. what constitutes tampering with the meter;

e) how to become legal;

g) what services are available (from what locations, when and at what time);

h) who are the persons rendering the service (names/faces);

i) when to pay, where to pay and how to pay;

j) how prepayment meters work; and

k) what the supplier does with the revenues collected from residents[1].

4.5.4.3 A special effort should be made to analyse the community in order to identify the right person(s) with whom to liaise on these issues.

4.5.5 Different types of customer

Different RP approaches (such as technology based or culture based) should be considered for different types of customer (individual residential, residential communities, submetered, industrial and municipal). Each of these customer types needs to have an RP approach that takes its particular circumstances into consideration.

4.6 Training

4.6.1 Supplier's staff

All key supplier staff should receive special training regarding procedures, processes and problem-solving techniques in accordance with the courses listed in annex H. Staff briefings should be sent out to all the employees (to ensure that everyone understands the processes to be implemented).

4.6.2 Selection of contract staff

Staff contracted to assist with RP should be

a) selected from the relevant customer community where possible,

b) screened for criminal records and any other factors that could militate against the person being used in a position of trust, and

c) trained to the relevant RP requirements regarding procedures, processes and problem-solving techniques.

---

[1] K J Campbell, 1999 (see bibliography).

Annex A
(informative)

Standard audit report sheets

Account details						
Account No.:					Info. obtained from (✓box)	
Debtor name:					Database	Customer
Debtor address: …… …… ….. …… …..					Database	Customer
Billing area (✓)	North	South	East	West	Database	Customer
Comments: …… ……. …… …… …… ……						

Site details				
Property codes (✓ if database = OK)	Database OK	Stand:	Township:	
		Portion:	Extension:	
Address (✓ if database = OK)	Database OK	Township:		
		Street name:	Street No.:	
Building/business name:				
Customer name:				
Billing area (✓)	North	South	East	West
Meter location on premises: …… ….. …… …… …… ……				
Comments: …… ……. …… ….. …… …..				

Access details

Is easy access to meter(s) available? (✓)	Yes	No
Are keys from the customer required to access meter(s)? (✓)	Yes	No
Are meter readers required to pass customer security checks? (✓)	Yes	No
Comments:		

Annex A
(concluded)

Miscellaneous details		
Is the meter box locked? (✓)	Yes	No
Is the meter box damaged? (✓)	Yes	No
Is the meter box door damaged? (✓)	Yes	No
Meters in chambers: Are the chamber lights working? (✓)	Yes	No
Are the fuse holders on the meter board sealed in place? (✓)	Yes	No
Voltage monitor on the meter board:	Green	Red (flashing)
Which light emitting diode is on (where fitted)? (✓)	None	
Occupation of premises? (✓)	Occupied	Vacant
Comments: …… …… …… …… …… ……		

Meter details (✓ as appropriate)										
	Meter 1		Meter 2		Meter 3		Meter 4		Meter 5	
Meter(s) serial No.										
Meter reading										
Meter make										
Meter model										
kWh / demand type?	kWh	Dem	kWh	Dem	kWh	Dem	kWh	Dem	kWh	Dem
Demand type?	kVA	KW	kVA	kW	kVA	kW	kVA	kW	kVA	kW
Multiplying factor on meter?	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Multiplying factor =										
Meter phases?	1 ∅	3 ∅	1 ∅	3 ∅	1 ∅	3 ∅	1 ∅	3 ∅	1 ∅	3 ∅
Meter body sealed?	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Terminal cover sealed?	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Reset button sealed?	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Signs of tampering?	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Meter working?	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Voltage fuses healthy?	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Faulty fuses replaced?	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Meter damaged?	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Metering installation: High tension supply (110 V meters) or low tension supply (220 V meters)?									HT	LT
NOTE With other types of meter installations, for example ENERMAX meters, it will be necessary to have the information format adapted to the specific information details.										

Installation audited by: …….. Signature: …… Date: …….

Annex B
(informative)

Three-notice procedure for inspection notification

Notice 1

TO THE HOUSEHOLDER

ADDRESS: .....

.....

.....

.....

DATE OF VISIT :.....

CONTRACTOR'S NAME: .....

Dear Customer

INSPECTION OF ELECTRICITY METER BOX

In terms of (*relevant bylaws*), (*supplier's name*) reserves the right to inspect their electricity meter at any time.

The relevant inspector has been prevented from inspecting your meter. It would be appreciated if you would arrange access to inspect your meter during the course of the next two weeks. Please contact (*details of supplier's contact person*) to make the necessary arrangements.

It should be noted that failure to comply with this request will result in the disconnection of your electricity service. Your electricity service will then be reconnected only after the meter has been inspected.

Thank you for your co-operation.

Yours faithfully

(*Supplier's representative*) Artisan's Man No./Call sign.....

Annex B
(continued)

Notice 2

TO THE HOUSEHOLDER

ADDRESS: .....

.....

.....

.....

CONTRACTOR'S NAME ……

DATE: .....

Dear Customer

INSPECTION OF ELECTRICITY METER BOX

Further to my previous letter requesting your assistance in gaining access to your premises for inspecting your electricity meter, staff, acting on behalf of (*supplier's name*), were again unable to gain access to your meter. You are again requested to contact (*details of supplier's contact person*) within 5 days of the above date, to make arrangements for an inspection to be carried out. Failure to comply may result in disconnection of your electricity service without further notice.

When contacting us, please quote the information below.

ADDRESS: .....

.....

.....

.....

METER No.: ..... SUBSTATION No.: .....

CIRCUIT No.:..... POLE No.: .....

Thank you for your co-operation.

Yours faithfully

(*Supplier's representative*) Artisan's Man No./Call sign.....

Annex B
(concluded)

Notice 3

TO THE HOUSEHOLDER

ADDRESS: .....

.....

.....

.....

CONTRACTOR'S NAME ……..

DATE: .....

Dear Customer

INSPECTION OF ELECTRICITY METER BOX

As a result of noncompliance with previous requests to gain access to your premises for inspection purposes, (*supplier's name*) staff have disconnected your electricity supply. Please contact (*details of supplier's contact person*) as soon as possible to make arrangements for an inspection to be carried out.

When contacting us, please quote the information below.

ADDRESS: .....

.....

.....

.....

METER No.: ..... SUBSTATION No.: .....

CIRCUIT No.: ..... POLE No.: .....

Thank you for your co-operation.

Yours faithfully

(*Supplier's representative*) Artisan's Man No./Call sign.....

Annex C
(informative)

Standard protection inspection report sheets

C.1 Revenue protection inspection report sheet (credit meter)

Customer details						
Date:	Erf/Stand number :					
Township:						
Full name of occupant (if known):						
Occupant ID No. (confirmed):						
Physical address:						
Service address:						
Occupant present?					Yes	No
Has an inspection notice been issued to the occupant?					Yes	No
Reasons for inspection request:						
Meter details						
	(1)		(2)		(3)	
Meter number (s)						
Meter(s) sealed?	Yes	No	Meter(s) damaged?		Yes	No
Meter(s) tampered?	Yes	No	Meter(s) faulty?		Yes	No
Has the meter been replaced?	Yes	No				

Replacement meter details (if replaced)						
	NUMBERS			**READINGS**		
	1	2	3	1	2	3
Old meter(s)						
New meter(s)						
Check-meter(s)						

Installation details					
Circuit breaker cover fitted?	Yes	No	Breaker trip OK?	Yes	No
Lights tested?	Yes	No	Plugs tested?	Yes	No
Supply connected?	Yes	No	Illegal connection?	Yes	No

Description of tampering or illegal connection: ....

Installation inspected by: …….. Signature: ……. Date: …….

Data captured by: …….. Signature: ……. Date: …….

Annex C
(concluded)

C.2 Standard protection inspection report sheet (prepayment meter)

Customer details												
Date:			Erf/Stand number:									
Township:												
Full name of occupant (if known):												
Occupant ID No. (confirmed):												
Physical address:												
Service address:												
Occupant present?										Yes		No
Has an inspection notice been issued to the occupant?										Yes		No
Reasons for inspection request:												
Meter details												
	(1)			(2)			(3)					
Meter number (s)												
Meter(s) sealed?	Yes		No	Meter(s) damaged?						Yes		No
Meter(s) tampered?	Yes		No	Meter(s) faulty?						Yes		No
Meter out of credit?	Yes		No	Has the meter been replaced?						Yes		No
Prepaid units left												
Replacement meter details (if replaced)												
	NUMBERS						**READINGS**					
	1		2	3			1		2	3		
Old meter(s)												
New meter(s)												
Check-meter(s)												
Installation details												
LED OK?	Yes		No	LED level?	1	2	3	4	5	6	7	8
Breaker test insert EI token?	Yes		No	Card punch OK?						Yes		No
Circuit breaker cover fitted?	Yes		No	Breaker trip OK?						Yes		No
Lights tested?	Yes		No	Plugs tested?						Yes		No

Supply connected?	Yes	No	Illegal connection?	Yes	No
Description of tampering or illegal connection:					

Installation inspected by: …….. Signature: ……. Date: …….

Data captured by: …….. Signature: ……. Date: …….

Annex D
(normative)

Sealing of metering equipment

D.1 General

This annex is based on the Eskom standard ESKASAAN2 for the sealing of metering equipment. Clauses D.2 to D.7 should be applied as standard practice by all electricity suppliers.

D.2 Objectives of sealing

D.2.1 The main objective of sealing any device is to ensure that access to certain sensitive parts of that device is restricted. This is especially so where energy meters are concerned, since these form the basis from which all revenue is obtained by the electricity supplier. It is therefore imperative that strict sealing procedures be established and that proper control is maintained to ensure that these procedures are adhered to.

D.2.2 A further aim of a sealing procedure is to provide a mechanism for tracing the last person who worked on a specific piece of equipment can be traced. To make this possible each seal shall be marked clearly and indelibly with a unique serial number.

D.3 Implementation

Directives regarding the implementation of effective sealing measures shall address the following issues:

a) the issuing and control of sealing pliers;

b) the coding system used on the pliers;

c) the auditing of procedures for pliers;

d) a policy for disciplinary action in cases of misuse of sealing pliers; and

e) a policy for sealing ancillary equipment.

D.4 Sealing process

D.4.1 All seals shall be mechanical in nature. Electronic seals such as password protection on certain types of equipment shall not be considered acceptable.

D.4.2 The seals shall consist of a piece of wire and a ferrule.

D.4.3 The wire shall be made from stainless steel and consist of at least seven strands.

D.4.4 The ferrule shall be made from brass or copper.

D.4.5 The seal shall be made by threading the wire trough sealing holes provided on the device to be sealed and the ferrule firmly crimped onto the wire in such a way that it is impossible to remove the seal without first breaking the wire.

Annex D

(continued)

D.4.6 The tag shall be crimped by a pair of ratchet operated sealing pliers that are specifically designed for the task.

D.4.7 The sealing pliers shall have an identifiable unique coding engraved onto both jaws which leaves the encoding embossed on the ferrule after crimping.

D.5 Requirements for sealing energy meters

The following separate seals shall be in place on energy meters at all times after commissioning of those meters:

a) Each meter cover or case shall be sealed in such a way that it is impossible to gain access to the internal parts of the meter without breaking the seal after the meter has been placed in service.

b) The terminal cover shall be sealed in such a way that no access to the terminals shall be possible without first breaking the seals on the cover.

c) If the meter is fitted with a maximum demand reset facility, it shall not be possible to reset the meter without first breaking the seal.

D.6 Requirements for sealing related metering equipment

As a general requirement, any equipment that makes up part of a metering system shall be sealed in such a way as to ensure restricted access to that equipment. This includes:

a) any device receiving pulses from a meter such as interposing relays, tariff modules, summators, and recording equipment,

b) any timers that are used to provide synchronization for metering systems, and

c) all test blocks on metering circuits.

D.7 Control of sealing pliers

D.7.1 Each engineering manager shall be responsible for

a) controlling all sealing pliers in that functional area,

b) ensuring that a register is established, in which all movements of all sealing pliers under his control are recorded, and

c) ensuring that all sealing pliers issued are recorded in the register.

D.7.2 The engineering manager shall be responsible for carrying out random audits of the register and all sealing pliers.

Annex D
(concluded)

D.7.3 Any person accepting custody of a pair of sealing pliers shall

a) accept responsibility for the pliers in writing,

b) sign the sealing pliers register to confirm acceptance,

c) undertake to keep the pliers in a safe place at all times,

d) never lend the pliers to any other individual for any reason whatsoever, and

e) be held accountable for the whereabouts of the sealing pliers.

Annex E
(informative)

Notice of disconnection owing to nonpayment or tampering

TO THE HOUSEHOLDER

ADDRESS: .....

.....

.....

.....

METER No.: ..... SUBSTATION No.: .....

CIRCUIT No.: ..... POLE No.: .....

DATE: .....

Dear Customer

DISCONNECTION OF SUPPLY

I hereby advise you that the electricity supply to your premises has been DISCONNECTED owing to (*reason*).

Before the supply can be restored, it will be necessary for you to pay the following:

1 A deposit of R400.00 or, if an existing deposit of R100.00 has been paid, then an additional deposit of R300.00 will be required.

PLUS

2 A reinstatement fee of R1 475.00

PLUS (*only applicable in the case of tampering*)

3 An estimated consumption for the period during which your meter has been tampered. Please contact (*supplier's contact details*) for this estimated charge before making the payment.

These charges must be paid in cash to (*supplier's name*) before the supply can be reconnected. Payment can be made at (*details of supplier's payment centres*) not earlier than 72 hours after disconnection. Please produce this letter when making the payment.

IT IS ILLEGAL AND DANGEROUS TO ATTEMPT TO RECONNECT THE ELECTRICITY SUPPLY YOURSELF AND ANY SUCH ATTEMPT MAY RESULT IN YOUR PROSECUTION.

Yours faithfully

(*Supplier's representative*) Artisan's Man No./Call sign.....

Annex F
(informative)

Minimum RP data requirements

Customer surname	
Customer initials	
Street number	
Street name	
Stand number	
Suburb/Township name	
Town/City name	
PO Box	
Postal code	
Telephone area code	
Telephone number	
Meter premises	Shack / small house / large house / townhouse / flat / shop / offices / industrial / town
Meter street number	
Meter street name	
Meter plot number	
Meter suburb/township	
Meter town/city name	
Service contract number	
Customer account number	
Present account balance	
Average monthly kWh	
Supply presently active?	Yes / No
Previous tampering?	Yes / No
Meter type	
Meter serial number	
Meter seal number	
Date of last calibration	
Meter calibration constant 1	
Meter calibration constant 2	
Meter calibration constant 3	
Meter calibration constant 4	

Annex G
(informative)

Applications for a supply of electricity

G.1 Application for a supply of electricity (credit meter)

Surname * :	

* NB State title (e.g. Prof; Dr; Mr; Mrs; Ms; Miss). Applicant(s) (i.e. person(s) responsible for the payments of this account) to furnish details. If a Close Corporation or Public Company, state name and designation of signatory (Note: the signatory must be duly authorized in writing to act on behalf of the organization). If not a Limited Liability Company, state full names of partners.

First names in full:	Self
	Spouse

Address where supply is required (include Stand No.):	
Date when supply is required:	

Purpose for which premises are to be used (✓ box)					
Rate 1: Domestic rate:	House	Boarding house	Hospital	Hotel	Hostel
	Flat	Residential institution	Nursing and convalescent home		Other
Rate 2: General rate:	Shop	Office	Factory	Restaurant	School
	Warehouse	Storeroom	Fun-fair	Other	
Rate 3: Off-peak rate:					

Postal address of applicant:			
		Postal code	IP code

Employer street address. If self-employed, residential address:			
		Telephone	

Current address where electricity is supplied in your name, or last residential address in the (*Supplier's name*) area of supply:	Until date

I/We hereby request supply of electricity at the tariff rate indicated above, but agree that if this rate is not applicable to my/our installation, to take supply at the rate applicable. I/We acknowledge and further agree to comply with the conditions of supply as set out on the reverse side of this form. Positive identification must be produced at the time of application.

Applicant's name:	Signature:	Date: .....
Identity number:		
Applicant's name:	Signature:	Date: .....
Identity number:		
(*Supplier's representative*) For and on behalf of the supplier:	Signature:	Date: .....

For departmental use only

Termination date: ..... Installation No.: ..... Rate: .....

Previous customer: Mr/Mrs/Miss.....

Final account to: .....

..... Postal code: ..... IP code: .....

Date	Meter No.	Reading	Rate	Maker's No.	Make	Size	Division of first dial	No. of dials read	Dial constant	Stock sheets

Common meter position? Yes/no ..... Meter kiosk No. ..... Meter labelled? Yes/no .....
per ..... Remarks
.....
Form checked by ..... Recorded by ..... Meter records ..... Meter installer/transfer clerk .....

Annex G
(continued)

Conditions of supply
(Reverse side of G.1)

The applicant hereby applies to (*Supplier's name*) for supply of electricity for the purposes specified overleaf, and agrees to pay for such supply at the rates determined by (*Supplier's name*). The applicant further undertakes the liability to pay in accordance with the charges laid down for such rates in the (*Supplier's)* electricity tariff, as amended from time to time, for all electricity consumed or in the event of no electricity having been consumed, for the monthly minimum charges until the expiration of two full working days notice in writing given by the applicant to the (*details of supplier's representative*) requesting discontinuance of supply. In the event of there being more than one applicant, applicants hereby agree to be held jointly and severally liable.

The supply of electricity applied for is governed by the (*supplier's relevant bylaws*), as amended from time to time.

Routine monthly reading of meters will be taken on predetermined dates.

Metering equipment shall be suitably accommodated and protected and be readily accessible to officials of (*Supplier's name*) at all reasonable times.

Annex G
(concluded)

G.2 Application for supply of electricity (prepayment meter)

Surname * :	

* NB State title (e.g. Prof; Dr; Mr; Mrs; Ms; Miss). Applicant(s) (i.e. person(s) responsible for the payments of this account) to furnish details. If a Close Corporation or Public Company, state name and designation of signatory (Note: the signatory must be duly authorized in writing to act on behalf of the organization). If not a Limited Liability Company, state full names of partners.

First names in full:	Self	
	Spouse	

Address where supply is required (include Stand No.) :	
Date when supply is required:	

Mark as appropriate (✓ box)		
Premises used as:	Domestic	Business
Transfer	New supply	Convert existing supply to energy dispenser

Employer street address. If self-employed, residential address:	Telephone

Current address where electricity is supplied in your name, or last residential address in the (*Supplier's name*) area of supply:	Until date

I/We acknowledge and further agree to comply with the conditions of supply as set out below. Positive identification must be produced at the time of application.

Applicant's name:		
Identity number:	Signature:	Date: .....
Applicant's name:		
Identity number:	Signature:	Date: .....
(*Supplier's representative*) For and on behalf of the supplier:	Signature:	Date: .....

Conditions of supply

The applicant hereby applies to (*Supplier's name*) for supply of electricity for the purposes specified overleaf, and agrees to pay for such supply at the rates determined by (*Supplier's name*). The applicant further undertakes the liability to pay in accordance with the charges laid down for such rates in the (*Supplier's)* electricity tariff, as amended from time to time, for all electricity consumed or in the event of no electricity having been consumed, for the monthly minimum charges until the expiration of two full working days notice in writing given by the applicant to the (*details of supplier's representative*) requesting discontinuance of supply. In the event of there being more than one applicant, applicants hereby agree to be held jointly and severally liable.

The supply of electricity applied for is governed by the (*supplier's relevant bylaws*), as amended from time to time. Routine monthly reading of meters will be taken on predetermined dates.

Metering equipment shall be suitably accommodated and protected and be readily accessible to officials of (*Supplier's name*) at all reasonable times.

The applicant understands and agrees that, in the case of arrears relative to consumption of electricity, such arrears shall be paid by means of a suitable levy as determined by (*Supplier's finance department*) on the electricity tariff of the energy dispenser.

Electricity will be sold at selected outlets and will be subject to a certain minimum per transaction as determined from time to time.

Annex H
(informative)

Training courses for RP officers

H.1 RP auditor

a) Meter checking;
b) Basic electricity;
c) Basic tools;
d) Test instruments; and
e) Hand-held computers.

H.2 RP operator

a) RP auditor courses;
b) Meter tamper removal;
c) Meter removal and replacement;
d) Cut-off procedures;
e) Switching;
f) Utility plumbing;
g) Safety; and
h) First aid.

H.3 RP investigator

a) RP auditor plus RP operator courses;
b) Supply regulations;
c) Electricity Act;
d) Evidence collection; and
e) Case preparation and court procedures.

H.4 Common courses

a) Customer relations;
b) Problem solving;
c) Negotiating skills; and
d) Emergency handling and self-defence.

Bibliography

General documents

The following documents were a source of reference in the compilation of this code of practice. Although they do not form an integral part of this code of practice, they are referenced for further information:

Campbell, K J. 1999. “The good, the bad and the ugly” SARPA Conference paper. : Utilimark.

Eskom procedure, ESKPVAAR0, *Procedure for handling complaints with regard to metering equipment.*

Eskom procedure, ESKPVAAR2, *Procedure for the recommissioning of metering and measurements installations with a NMD > 1 MVA*

Eskom procedure, ESKPVAAR3, *Procedure for the maintenance of metering and measurements installations.*

Eskom procedure, ESKPVAAR4, *Procedure for the recommissioning of metering and measurements installations with a NMD > 1 MVA.*

Eskom procedure, ESKPVAAR5, *Procedure for the inspection of metering installations.*

Eskom procedure, ESKPVAAR7, *Procedure for the commissioning and recommissioning of metering installations with a NMD < 1 MVA.*

Eskom procedure, SCSPVAAV1, *ED sealing and anti-tamper.*

Eskom procedure, TRR/T98/TSD/05, *Technologies on combating electricity theft.*

Eskom standard, ESKASAAN2, *Standard for sealing metering equipment.*

NRS 057-2:xxx, *Electricity metering - Part 2: Minimum standards* (in course of preparation).

NOTE Other parts of NRS 057 are also in course of preparation and could be relevant in the context of NRS 055.

SABS 1524-1:1994, *Electricity dispensing systems - Part 1: Single-phase electricity dispensers.*

SABS 1607:1994, *Electromechanical watt-hour meters.*

SABS 0142:1993, *The wiring of premises.*

SABS IEC 60521:1988, *Alternating-current electromechanical watt-hour meters (classes 0.5, 1 and 2).*

IEC 61036:1996, *Alternating current static watt-hour meters for active energy (Classes 1 and 2).*

NOTE Eskom procedures, reports and standards can be obtained from the Eskom Corporate Information Office. Contact Ms M Stempfle, tel: (011) 800-4915.

Legislation

Electricity Act, 1987 (Act 41 of 1987).

Eskom Act, 1987 (Act 40 of 1987).

Occupational Health and Safety Act, 1993 (Act 85 of 1993).

NOTE The relevant bylaws applicable to the supplier concerned, should also be taken into consideration.