

 Eskom	Standard	Distribution
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Title: **MANAGEMENT OF
CERTIFICATES OF
COMPLIANCE FOR ELECTRICAL
INSTALLATIONS**

Unique Identifier: **240-170000465**

Alternative Reference Number: **34-962**

Area of Applicability: **Engineering**

Documentation Type: **Standard**

Revision: **2**

Total Pages: **13**

Next Review Date: **July 2027**

Disclosure Classification: **Controlled
Disclosure**

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PCM Reference: **32-1316**

SCOT Study Committee Number/Name: Process Control Manual (PCM) for Perform Operational Network

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1. Introduction

Eskom Distribution is exposed to Certificates of Compliance in the multiple roles it assumes and is accountable to the Chief Inspector as a) Contractor in the Electrification environment, b) owner or lesser of electrical installations as well as c) supplier of electrical energy.

2. Supporting clauses

2.1 Scope

Electrical Installations as defined by the Electrical Installation Regulations (see paragraph 3) is the focus of this document. Clarification to the effect that substations are not deemed as Electrical Installations in terms of this regulation is briefly discussed

2.1.1 Purpose

The purpose of this standard is to set out a standard process for the MANAGEMENT OF CERTIFICATES OF COMPLIANCE FOR ELECTRICAL INSTALLATIONS.

2.1.2 Applicability

This procedure is applicable to Eskom Distribution Group and the contractors employed by the division.

2.2 Normative/informative references

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

2.2.1 Normative

- [1] Occupational Health and Safety Act No 95 of 1993: Electrical Installation Regulations;
- [2] SANS 10142-1, Wiring code of practice for Low Volt Electrical installations;
- [3] 240-130892449, Split Meter Small Power Distribution Unit Ownership Philosophy;
- [4] Exemption by the Chief Inspector, EIR 7(1); and
- [5] SCSREAAF6, Report – Eskom Distribution electrification and reticulation project.

2.2.2 Informative

- [6] 32-9, Definition of Eskom documents; and
- [7] 32-644, Eskom documentation management standard.

2.3 Definitions

2.3.1 General

Definition	Description
Certificate of Compliance	"Means a certificate in the form of the EIR Annexure 1 issued by an accredited person in respect of an electrical installation or part of an electrical installation."

Definition	Description
Electrical Installation	“Means any machinery, in or on any premises, used for the transmission of electricity from a point of control to a point of consumption anywhere on the premises, including any article forming part of such an installation irrespective of whether or not it is part of the electrical circuit, but excluding - a) Any machinery of the supplier related to the supply of electricity on the premises, b) any machinery used for the transmission of electricity of which the voltage shall not exceed 50 Volt where such energy is not derived from the main supply of a supplier, c) Any machinery which transmit electrical energy in telecommunication, television or radio circuits, d) and electrical installations on a vehicle, vessel, train or aircraft”
Accredited person	“Means a person registered in terms of regulation 9 (EIR) as an electrical tester for single phase, an installation electrician, or a master installation electrician, as the case may be”.
Chief Inspector	“Means the officer designated under Section 27 as chief inspector, and includes any officer as chief inspector.”
Supplier	“In relation to a particular electrical installation, means any local authority, statutory body or person who supplies or contract or agrees to supply electricity to that electrical installation”

2.3.2 Disclosure classification

Controlled disclosure: controlled disclosure to external parties (either enforced by law, or discretionary).

2.4 Abbreviations

All abbreviations in ORHVS and NRS 082, as well as the following, are applicable:

Abbreviation	Description
EIR	Electrical Installation Regulation
CoC	Certificate of Compliance
OHSAct	Occupational Health and Safety Act
SPT	Single Phase Tester
SPDU	Small Power Distribution Unit

2.5 Roles and responsibilities

General Machine Regulation 2(1) appointees shall be accountable for the provision and maintenance of the capacity and procedure to issue and manage issued CoC's, Electrification Change out Form and SPDU Installation Certificate (abridged CoC) as anticipated by this document.

Owners or lessees of buildings and facilities will be accountable to ensure the conformance of the Electrical Installation to the requirements of the EIR and SANS 10142 (Wiring Code of Practice).

Customer Services will take responsibility for any Eskom correspondence regarding the management of CoC's anticipated in this standard (I.e. Requesting the customer to obtain a new CoC, Notification that the electricity supply will be/was terminated based on the fact it constituted an immediate danger to life or property.)

Customer Services will assume the responsibilities as “Supplier” as defined in this standard.

2.6 Process for monitoring

Document number	Document title
32-1316	Process Control Manual (PCM) for Perform Operational Network Support.

2.7 Related/supporting documents

Occupational Health and Safety Act No 95 of 1993: Electrical Installation Regulations.

3. Requirements

3.1 The different roles of Distribution Division regarding CoC's:

3.1.1 Managing CoC's as an Electrical contractor

Large and small scale projects, where Eskom Distribution provide the reticulation infrastructure as well as construct and connect individual electrical installation requires the issuing of CoC's for each such installation. Due to the modular nature and the volumes associated with Electrification projects, Distribution enjoy specific exemptions regarding the issuing of CoC in the case where the SPDU is installed as a unit in that:

- a) The person conducting the electrical installation testing and certification need not be an accredited person: and
- b) A full CoC is not required for installations where the supply is less than 60A comprising of an SPDU. Instead of a full CoC, either an Installation Certificate (abridged CoC) will be issued.

3.1.2 Requirements when installing the SPDU unit, as delivered by the manufacturer:

Based on the exemptions granted to Eskom Distribution by the Chief Inspector the following must be adhered to.

3.1.2.1 In the event that the person conducting the installation and testing is not an accredited person, the person must.

- a) Be suitably trained, assessed competent and authorised to do installation and testing work.
- b) Be supervised by an accredited person when performing such installations.
- c) Complete and submit an Installation Certificate (abridged CoC) as per procedure if it is a first-time installation.
- d) Complete and submit a Meter Change out form as per procedure if it is a meter replacement.

3.1.2.2 In the event that the person conducting the installation and testing is not a person accredited by the Chief Inspector, the person must be subject to the following supervision:

- a) The immediate supervisor whom exercises overall control (or alternative stand in) must be an accredited person.
- b) Overall control includes the authority to direct:
 - 1) What work is to be performed (installation or replacement of an SPDU);
 - 2) The manner in which it is done;
 - 3) The means to be employed doing it (tools, equipment, and test instruments); and
 - 4) The time and place where it is to be done.
- c) Control also imply supervisors to:

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- 1) Sample test completed work ensuring conformance to the requirements; and
 - 2) Observe the installer periodically while they are performing installation and testing work (these incidents must be documented).
- d) Control does not require:
- 1) Continuous supervision of the person installing/replacing the SPD; and
 - 2) Counter signing the Installation Certificate (abridged CoC).

3.1.2.3 In the event that the person conducting the installation and testing is an accredited person, the person must.

- a) Conduct the installation, testing and issuing of the Installation Certificate (abridged CoC) with full autonomy and in conformance to the EIR (SANS 10142-1).
- b) Furnish their Certificate of Registration number as accredited person on the Installation Certificate (abridged CoC).
- c) Complete and submit an Installation Certificate (abridged CoC) as per procedure if it is a first-time installation.
- d) Complete and submit an Meter Change out form as per procedure if it is a meter replacement.

3.2 Managing CoC's as users or lessors of electrical installations

As users or lessees of buildings and facilities which constitutes Electrical Installations (I.e. Office buildings, workshops or Service Centres) as anticipated by the EIR, Eskom Distribution must comply fully with the requirements of the Electrical Installation regulation and possess a Certificate of Compliance for every, or part of such an installation.

The following obligations must be observed.

3.2.1 Responsibility for Electrical Installations

Eskom as user or lessee of an electrical installation is responsible for the safety, safe use and maintenance of the electrical installation he uses or leases. This includes the conductors connecting the installation to the Point of Supply. (EIR 2)

3.2.2 Certificate of Compliance

Eskom as user or lessee of an electrical installation shall have a valid CoC, issued by an accredited person in respect of every such installation or part of an installation that have been altered. (EIR 3) and (EIR 7)

3.2.3 Construction

Eskom shall not permit or require the installation of an electrical installation other than in accordance with the safety standard incorporated into these regulations under section 44 of the OHSA.

3.3 Substations are not Electrical Installations as defined by the EIR

For this purpose a Control Room shall mean and include all single phase 230 and three phases 400 Volt circuits (including those in the High Voltage yard) that is supplied from the 400 V AC/DC or Distribution Board in the control room.

Legal opinion following the scrutiny of the relevant Acts, Regulations and Wiring code of practice resulted in a submission by legal counsel with the following conclusions (submission attached in annex A).

- a) Substation Control Rooms do not require Certificates of Compliance
- b) Substation Control Room equipment governed by the Wiring Code of Practice (SANS 10142-1) must comply with the provisions of the Code.

3.3.1 Managing CoC's as supplier to electrical installations.

Eskom Distribution supplies electricity to users or lessees of buildings and facilities constituting electrical installations. Certain obligations are placed on suppliers to such installations which impact on daily activities of Eskom staff as they are exposed thereto.

3.3.2 Notification to supplier of impending installation work

Any person that wishes to construct an electrical installation or, increase the electrical supply capacity is obliged to notify the designated supplier of his/her intention, in writing, using the form contained in Annex 3 of the EIR. It is provided that Eskom Distribution may waive this requirement in respect of such work specified. (EIR 6(1)& (2)) In this regard precedence has been set by Eskom only requiring customers to prescribe to standard contracts in use.

3.3.3 Eskom obligation to demand a CoC

Further, that "No supplier shall connect or give permission for the connection of an electrical supply unless a CoC for the installation have been produced to the supplier by the user of such electrical installation", (EIR 7(2))'

At the commissioning of the installation prior to it being connected to the system and energised. The customer will be requested to hand the CoC for the installation to the Eskom representative (TO, STO or PTO) who will ensure the following.

- a) That the CoC is valid for the particular installation.
- b) That the CoC's time reference is valid
- c) That the CoC is issued by a known contractor. If not the contractor accreditation could be investigated.
- d) That the CoC is complete. I.e. signatures, installation description, test results and exclusions.
- e) The CoC will be handed back to the user or lesser of the installation, it is not the accountability of Eskom to retain any form or copy of the CoC.

3.3.4 Conditions under which a CoC must be demanded

- a) Prior to connecting a supply to a new Electrical Installation, Eskom must be furnished with a valid CoC as per paragraph 3.3.3 above.
- b) When there is a change in ownership of the electrical installation. Application for a new supply or termination of an existing supply will be deemed notification of change of ownership. The new user or lessee must provide the CoC prior to re-connecting the supply.
- c) "A CoC is not required in the case where the electricity supply was disconnected for non-payment of the electricity account, or where there is a change of tenant but not ownership. (EIR 8(2))
- d) Eskom will acknowledge the right that the CoC is transferable between consecutive owners. (EIR 3(1)). The same procedure as in paragraph 3.3.3 above will apply.
- e) When there is electrical contact incident investigation.

3.3.5 Eskom right (no obligation) to inspect an electrical installation

“A supplier may at any reasonable time inspect or test any installation, provided that the supplier shall not charge any fee for such inspection unless the inspection is carried out at the request of the user or lesser.”

3.4 Eskom has an obligation to respond to substandard or dangerous electrical installation once identified

- a) Should an Eskom Employee identify a defect or fault in an electrical installation that does not hold imminent danger to life or property, then Eskom may request the user or lessee in writing via Customer Services to obtain and present Eskom with a new CoC. (EIR 7(7)).
- b) Should a Eskom Employee identify a defect or fault in an electrical installation that constitute an immediate danger to life or property, Eskom shall take steps to have the supply to the circuit in which the fault or defect was detected disconnected. (EIR 7(7) & 9(3)) This shall be confirmed in writhing by Customer Services.

3.5 Eskom has an obligation to report negligence on the part of accredited persons.

Should an Eskom employee take note of negligence on the part of an accredited person, Eskom is obliged to report in writing such negligence to the Chief Inspector. (EIR 7(7))

3.6 Responsibility for Electrical installation

3.6.1 Where there is a clear separation between the points of supply and control

In “so called” conventional installations where Eskom provide a meter box containing the meters and a distinct point of supply (supply terminals) to which the customer supply cable, feeding a separate box containing the point of control, is connected the following shall apply.

The user or lessor of an electrical installation shall be responsible for the safety, safe use and maintenance of the installation including the cable connected to the point of supply.

3.6.2 Where the point of supply is also the point of Control

In “so called” electrification installations where the point of control (Earth leakage) and the point of supply are contained in one unit- as is the case for SPDUs, Eskom will assume the responsibility for the safe use and maintenance of that unit. The customer is responsible for the safe use thereof and is instructed to that effect on installation according to Eskom requirements.

3.7 Responsibility for the suppliers equipment

- a) Electrical equipment on customers premises that is not part of the electrical installation as defined under 2.3.1 General Definitions above, does not require Certificates of Compliance.
- b) The electrical equipment on customer premises that is not part of the electrical installation as defined under 2.3.1 General Definitions above, governed by the Wiring Code of Practice (SANS 10142-1) must comply with the provisions of the code.

4. Forms, Records and Certificates

The manufacturer testing certificate and user’s manual (including the technical specification) shall be included in the package.

5. Authorization

This document has been seen and accepted by:

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6. Revisions

This revision (DST_ 240-170000465) cancels and replaces all revisions of document number 34-962.

Date	Rev	Compiler	Remarks
July 2022	2	DM Ntombela	Changed the date on the front page of this document, reviewed normative references. Energy Control Unit (ECU) and Electricity Dispenser (ED) have been removed because they OLD technologies Splitting the ECU and the SPDU If any alterations are done to the ECU / SPDU which is supplied as a unit, such as splitting the SPDU by installing the common base outside and the socket outlets inside a house, a full CoC must be issued by an Accredited person in full compliance of the EIR (SANS 10142-1). In this case the exemption by the Chief Inspector is not applicable. The person must complete and submit an ECU Installation Certificate (abridged CoC) if it is a first time installation or an Electrification Change out form as per procedure if it is an ECU replacement
Feb 2012	1	KC Layley	5 Year review – No content change
Dec 2007	0	AJ Kraft	Update template, reference numbers to comply with new TESCO and Eskom Documentation work practices (Introduction Bibliography) Removed first sentence. Removed reference to DISPVACS6 Document number changed to DST 34-962
May 2004	0	AJ Kraft	Original issued – DISASADJ7

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8. Acknowledgements

The current chairperson and the GMWP care group wishes to acknowledge the former team members below for their contribution in the development of the superseded documents:

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Annex A – Is a Substation Control Room an Electrical Installation (Informative)

1. Background

- a) In terms of Section 1 of the Electrical Installation Regulations, an “electrical installation” is defined as *any machinery in or on any premises, used for the transmission of electricity from a point of control to a point of consumption anywhere on the premises, including any article forming part of such installation irrespective of whether or not it is part of the electrical circuit, but excluding:-*
- b) In terms of Regulation 3 every user or lessor of an electrical installation shall have a valid certificate of compliance in respect of every such installation issued by an accredited person.
- c) The installation must comply with the provisions of the Wiring Code SABS 0142 issued by the South African Bureau of Standards in terms of the Standards Act, No. 29 of 1993 (as amended).

2. Formulation of the problem

- a) The Bynes Substation in Cullinan was inspected as an example of a typical Eskom Substation Control Room.
- b) The features of the Substation Control Room were contrasted with the electrical installation at the Technical Services Centre's office block.
- c) The installation boundaries of the electrical installation at the CNC office block are well defined from the point of supply, via the point of Control to various points of consumption. The components in the electrical installation all comprise of equipment and appliances which are listed as approved products by the South African Bureau of Standards.

This is an installation which falls squarely into the definition of an electrical installation in terms of the above definition, and, therefore, requires a certificate of compliance.

- d) d) The Substation Control Room is, however, much more complex. It comprises of two parts, the first being the elements representing resembling an electrical installation as described above, consisting of a point of supply (terminals of the auxiliary transformer in the substation with no metering) to the AC/DC distribution board (AC = Alternative Current and DC = Direct Current) housing the first point of control from which various domestic devices, such as lights and plug circuits, air conditioners and fans are supplied.
- e) e) The second part of the installation comprises of various control panels which allow the management of HV equipment like large power transformers and breakers, and here another form of supply is introduced to the total installation via control panels. They are currents and voltage signals (110 V nominal) from HV devices, like Voltage Current transformers, used for measuring the HV supply conditions. Industrial equipment, like motors, heaters are supplied via the said control panel.

It is important to note that most of the electrical machines in a substation are not like the equipment in the office block, listed as approved products in terms of the South African Bureau of Standards' appliance list, but they meet stringent national and international specifications as machines.

3. Legal Question

Is a certificate of compliance as prescribed by Regulation 3 a requirement for a Substation Control Room as defined above?

4. Analysis

A: The definition of electrical installation refers to “any machinery”, but it is not defined in the Electrical Installation Regulations, nor is it defined in the Electrical Machinery Regulations.

These Regulations are promulgated in terms of Section 32 of the Occupational Health and Safety Act, No. 85 of 1993 (as amended) which in Section 1 defines “machinery” to mean:

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“..... any article or combination of articles assembled, arranged or connected and which is used or intended to be used for converting any form of energy to performing work, or which is used or intended to be used whether incidental thereto or not, for developing, receiving, storing, containing, confining, transforming, transmitting or transferring or controlling any form of energy.”

This definition is wide enough to include a Substation Control Room as a machinery.

The exclusions to the definition of an electrical installation in the Electrical Regulations include:

“any machinery of the supplier related to the supply of electricity on the premises.”

The Substation Control Room is a machinery, Eskom is a supplier, part of the installation relates to supply of electricity on the premises.

If the above argument is correct, then, and in that event, a Substation Control Room is not an electrical installation by definition, and does not, therefore, require a certificate of compliance, even for that part of the equipment covered by a certificate of compliance.

B: In terms of clause 4.1 of the SABS 0142 Wiring Code, each item or defined system of the electrical equipment used and its installation shall comply with the relevant provision of this Standard or shall have been authorised.

Application for authorisation may be submitted only in cases where products are inter alia used in unique installations. It appears that if the Substation Control Room is not an electrical installation. It is still required to have a certificate of compliance in terms of this Standard.

The wiring code is issued in terms of the Standards Act, which Act provides for the promotion and maintenance of standardisation and quality in connection with commodities.

This code, therefore, is primarily concerned with quality of standard, while the basis of the Occupational Health and Safety Act is inter alia to regulate the use of plant and machinery. If the Substation Control Room is excluded in the definition of an electrical installation in terms of the Electrical Installation Regulations, it is not thereby excluded from compliance with the Wiring Standard. It only means that it does not require a certificate of compliance in terms of the Electrical Installation regulations, but must still comply with the provisions of the Electrical Machinery Regulations.

The Code provides in clause 8.1, that it is a statutory requirement that every user or lessor of an electrical installation shall have a valid certificate of compliance. The Code does not of its own provide for the requirements which must be met before a certificate of compliance is met. It makes reference to a statutory requirement, which in this context, it is a reference to the Electrical Installation Regulations.

The Legislature could not have intended that two bodies operating in terms of separate legislation should make Regulations on the same issue. This would be absurd. It is, for this reason, that the Code desists from prescribing conditions for a certificate of compliance, which is already regulated by the Electrical Installation Regulations.

The Code merely restates that a certificate of compliance is a legal requirement, and then proceed to regulate in its area of competency which is the standard of wiring.

The Wiring Standard is of general application, it appears even, to those machinery not requiring a certificate of compliance. If a product is used in unique circumstances, authorisation shall be obtained. The substation is machinery and not a product. It, therefore, does not require authorisation. Clause 4.1 requires that each item should comply, which is the case with the substation.

If the above argument is wrong, the Code still has no provisions which regulate the hybrid nature of the substation and, therefore, the provisions of the Code are by interpretation applicable to wiring requirements and the Electrical Installation Regulations to requirements for a COC.

5. Submissions

Having regard to the foregoing, the following submissions are respectfully made:

- a) The Substation Control Room does not require a certificate of compliance.
- b) The Substation Control room in respect of equipment governed by the Code, complies with such provisions.

D.A. Ncongwane

Pretoria