No. 748 **22 July *2005***

SOUTH AFRICAN QUALIFICATIONS AUTHORITY (SAQA)

In accordance with regulation 24(c) of the Standard Generating Bodies Regulations of 28 March 1998, the Standards Generating Body (SGB) for

Physical Planning and Construction

publishes the following qualification for public comment.

This notice contains the titles, fields, sub-fields, NQF levels, credits, and purpose of the qualification and unit standards. The qualification and unit standards can be accessed via the SAQA web-site at **www.saqa.org.za**. Copies may also be obtained from the Directorate of Standards Setting and Development at the SAQA offices, Hatfield Forum West, 1067 Arcadia Street, Hatfield, Pretoria.

Comment on the qualification and unit standards should reach SAQA at the address **below and no *later than 22 August 2005.*** All correspondence should be marked **Standards Setting – Electrical Engineering and Construction** and addressed to

The Director: Standards Setting and Development
SAQA
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DUGMORE MPHUTHING
ACTING DIRECTOR: STANDARDS SETTING AND DEVELOPMENT

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:

Further Education and Training Certificate: Overhead Track Equipment

SAQA QUAL ID	QUALIFICATION TITLE		
49774	Further Education and Training Certificate: Overhead Track Equipment		
SGB NAME		**NSB 12**	**PROVIDER NAME**
SGB Electrical Engineering & Construction		Physical Planning and Construction	
QUAL TYPE		**FIELD**	**SUBFIELD**
National Certificate		Physical Planning and Construction	Electrical Infrastructure Construction
ABET BAND	**MINIMUM CREDITS**	**NQF LEVEL**	**QUALIFICATION CLASS**
Undefined	144	Level 4	Regular-Unit Stds Based

PURPOSE AND RATIONALE OF THE QUALIFICATION

Purpose:

The primary purpose of this qualification is to develop the required competencies in a learner for a career in Overhead Track Equipment.

Qualified learners will be able to:

> Remove, replace/install and adjust section insulator and/or runners on 3kV **DC** Overhead Track Equipment.
> Prepare and install a booster return conductor on 25/50 kV **AC** Overhead Track Equipment under isolated and earthed conditions.
> Remove, install/replace and adjust a steady arm and/or side strain insulator on Overhead Track Equipment.
> Sag and tension overhead conductors on Overhead Track Equipment under isolated and earthed conditions.
> Set stagger and height of the contact wire on Overhead Track Equipment.
> Understand basic electrical and mechanical engineering principles.
> Work to clearance from or on exposed "live" high-voltage Overhead Track Equipment with mechanized maintenance vehicles.
> Work on live 3kV DC Overhead Track Equipment or to clearance from exposed "live" high-voltage electrical equipment 3kV DC, 25 kV and 50kV **AC** Overhead Track Equipment and all transmission lines and associated equipment.
> Communicate effectively with relevant role-players (e.g. peers, managers, etc.) by expressing opinions in spoken and written form.
> Calculate quantities and distances correctly.

This qualification provides the learner access to both vertically and horizontally articulated qualifications in the electrical engineering and construction field. The productivity and employability of the qualifying learner within the electrical engineering and construction field will be enhanced, thereby contributing to the quality and skills required in this field. Learners are able to demonstrate occupational skills, which enable them to engage in life skills activities, creation of small businesses and health and environmental issues, through the Critical Cross-Field Component of the Qualification.

Rationale for the qual;ification:

Overhead Track Equipment forms a critical part of the infrastructure of a rail transport system and contributes to the safe and efficient running of rail traffic. Due to the density of rail traffic and the emphasis

placed on reliability, availability and safety of overhead track equipment, it is vitally important that the equipment be repaired in a timeous and safe manner. To enable safe and timeous repair on overhead track equipment, maintenance personnel must have a sound knowledge of various overhead track systems and must follow predetermined faultfinding procedures based on overhead track engineering practices and specifications.

The qualification equips the learner with the skills, knowledge and understanding to remove, assemble, replace/install and maintain overhead track equipment safely and correctly under "Live" and isolated and earthed conditions to the required standards and specifications.

Learners credited with this qualification and who apply the acquired knowledge and skills can help address the critical shortage of qualified personnel in the industry. For the new learner, this qualification is needed to enable him/her to be a productive person in a structured workplace and forms part of the learner development.

These skills and knowledge are essential in and to the following domains:

> Enabling the rendering of electrical continuity to the rail transport service
> Enabling the rendering of a rail transport service
> Contributing to economic growth

For learners who have acquired experience in the workplace, this qualification may be obtained in part or in whole through Recognition of Prior Learning, by formally acknowledging workplace skills acquired without the benefit of formal education or training.

RECOGNIZE PREVIOUS LEARNING?

Y

LEARNING ASSUMED TO BE IN PLACE

This qualification assumes that learners are competent in:

> Communication at NQF Level 3
> Mathematical Literacy at NQF Level 3

Recognition of prior learning:

This qualification may be obtained in part or in whole through Recognition of Prior Learning. The learner should be thoroughly briefed on the mechanism to be used. Support and guidance should be provided to the learner. Care should be taken that the mechanism used provides the learner with an opportunity to demonstrate competence and is not so onerous as to prevent learners from taking up the Recognition of Prior Learning option towards gaining a qualification.

ACCESS TO THE QUALIFICATION

In terms of the job requirements learners need to be physically fit and robust.

Due to the safety requirements in the overhead track environment, learners must:

> Not be colour.blind;
> Not be claustrophobic;
> Be able to gauge distance; and
> Be able to work at heights.

Access to the qualification is open to all learners complying with the above-mentioned criteria. It would be preferable for learners to first complete the National Certificate in Overhead Track Equipment Level 3 before accessing this qualification.

QUALIFICATION RULES

Level, credits and learning components assigned to this qualification:

The Fundamental, Core and Elective Components that make up this qualification, are listed below.

Fundamental:

> Communication 20 credits at Level 4

> Communication *20* credits at Level *3*
> 16 credits at Level 4 Mathematical Literacy
> Total: 56 credits

Core:

> **73** credits at Level **4**
> Total: **73** credits

Elective:

> 12 credits at Level **3**
> 25 credits at Level 4
> Minimum credits required: 15 credits

The total credits for this qualification are **144.**

Motivation for the number of credits assigned:

> Fundamental Credits:

> A minimum of 20 compulsory credits at level **4** in a first language and a further 20 compulsory credits at a minimum of level *3* in a second language are allocated to Communication . **A** further 16 credits at level **4** are allocated **to** Mathematical Literacy.
> All 56 credits allocated to these fundamental competencies are compulsory.

> Core Credits:

> *73* compulsory credits have been allocated to these Core competencies.

> Elective Credits:

> *27* credits have been allocated to the Elective component of the qualification. 15 credits must be selected from this category.

In order to obtain the qualification, the learner needs to complete at least a total of **143** credits as stipulated above.

EXIT LEVEL OUTCOMES

1. Plan and prepare the execution of the removal, assembly, replacement/installation and maintenance work on Overhead Track Equipment.
Range:
> This includes but is not limited to required personnel, transport, tools and lifting equipment.
> Solve problems regarding the correctness, quantity and quality of materials, parts and components as measured against quantities needed and material specifications.

2. Remove, assemble, replace/install and maintain overhead track equipment according to company-specific instructions and manufacturer's specifications safely.

3. Finalise the removal, assembly, replacement/installation and maintenance work on overhead track equipment according to company-specific instructions.

4. Communicate effectively with all role players in the work environment.

ASSOCIATED ASSESSMENT CRITERIA

1.1 The planning of the task is performed correctly by evaluating and interpreting relevant documentation.
1.2 The correct resources and materials are procured affer evaluating and interpreting relevant documentation. This includes but is not limited to required personnel, transport, tools and lifting equipment.
1.3 Problems regarding the correctness, quantity and quality of materials, parts and components as measured against quantities needed and material specifications to perform the tasks such as
> Removing assembling, and adjusting section insulator and/or runners on 3kV DC OHTE.
> Sag and tension overhead conductors on OHTE under isolated and earthed conditions.
> Preparation and installation booster return conductor on 25/50Kv **AC** OHTE under isolated and earth

conditions.
- > Removal, installation or adjustment to a steady arm and/or side strain insulator on OHTE.
- > Removal, replacementlinstallationand adjustment of section insulator/ phase break/runners on 25/50Kv AC OHTE under isolated and earthed conditions.
- > Setting stagger and height of the contact wire on OHTE.

can be solved effectively
I.4 Effective communication in the work environment can be demonstrated
1.5 Effective communication with relevant role-players relating to the execution of the removal, assembly, replacementlinstallation and maintenancework on overhead track equipment can be demonstrated by communicating clearly and concisely in accordance with company-specific communication protocols.
1.6 Working effectively in teams is understood and can be demonstrated by displaying participation when performing the removal, assembly, replacementlinstallationand maintenance work on overhead track equipment.'

2.1 The removal, assembly replacementlinstallation and maintenance of and quality checks on overhead track equipment are performed safely and correctly as per overhead track equipment specifications, company-specific instructions and manufacturer's specifications.
2.2 Work to clearance from "live" overhead track equipment while performing the removal, replacement/installation and maintenancework on "live" high-voltage overhead track equipment.
2.3 Work to clearance from or on exposed "live" high-voltage OHTE with mechanized maintenance vehicles.
2.4 Problems regarding the suitability and functionality of equipment and tools can be solved effectively by demonstrating the knowledge required for identifying sub-standards and by being able to improvise within acceptable overhead track practices.
2.5 Learners can organise and manage themselves effectively by utilising the resources and executing the task safely and responsibly.
2.6 Effective communication with relevant role-players related to the removal, fitting/installation and maintenance work on overhead track equipment can be demonstrated by communicating clearly and concisely and within the framework of company-specific communication protocols.
2.7 The need for working effectively in teams is understood and can be demonstrated by displaying participative interaction when removing, replacing/installing and maintaining overhead track equipment.
2.8 The use and function of the equipment being installed in relation to the overhead track system can be explained correctly in terms of overhead track practices and philosophies.

3.1 Tools, equipment and material are removed safely and correctly according to company-specific instructions.
3.2 Problems regarding the finalisation of the removal, assembly, replacement/installation and maintenance work can be solved effectively by demonstrating the knowledge required for identifying sub-standards and by being able to improvise within acceptable overhead track practices.
3.3 Learners can organise and manage themselves effectively by utilising the resources and executing the task safely and responsibly.
3.4 Effective communication with relevant role-players related to the cancelling of a work permit when a permit was issued, can be demonstrated by communicating clearly and concisely and within the framework of company-specific communication protocols.

4.1 information is clearly presented in a timely manner in the required format and to appropriate parties as stipulated in company specific policies and procedures.
4.2 The relevant communication media and protocol is used correctly while performing tasks.
4.3 Verbal communication is clear and concise.
4.4 Documentation related to the task is fully completed in recognisablewriting and as per company-specific language policies.
4.5 Learners can organise and manage themselves by understanding and correctly:
- > Following procedures that apply to illness or injury in the work area.
- > Demonstrating the procedures for reporting and recording of potential hazards.
- > Identifying and using protective clothing.
- > Problems with regard to the following can be solved effectively by:
  - > Identifying the potential hazards in the work area.
  - > Limiting injury to persons or damage to property in case of an emergency.
  - > Limiting exposure to, and correctly disposing of hazardous substances.

Integrated assessment:

Because assessment practices must be open, transparent, fair, valid, and reliable and ensure that no learner is disadvantaged in any way whatsoever, an integrated assessment approach is incorporated into the Qualification.

Learning, teaching and assessment are inextricably lined. Whenever possible, the assessment of knowledge, skills, attitudes and values shown in the unit standards should be integrated.

Assessment of the communication, language, literacy and numeracy should be conducted in conjunction with other aspects and should use authentic OHTE contexts wherever possible.

A variety of methods must be used in assessment and tools and activities must be appropriate to the context in which the learner is working. Where it is not possible to assess the learner in the workplace or on-the-job, simulations, case studies, role-plays and other similar techniques should be used to provide a context appropriate to the assessment.

The term 'Integrated Assessment' implies that theoretical and practical components should be assessed together. During integrated assessments the assessor should make use of formative and summative assessment methods and assess combinations of practical, applied, foundational and reflective competencies.

Assessors and moderators should make use of a range of formative and summative assessment methods. Assessors should assess and give credit for the evidence of learning that has already been acquired through formal, informal and non-formal learning and work experience.

Assessment should ensure that all specific outcomes, embedded knowledge and critical cross-field outcomes are evaluated. The assessment of the critical cross-field outcomes should be integrated with the assessment of specific outcomes and embedded knowledge.

INTERNATIONAL COMPARABILITY

This qualification was compared with the Transport and Distribution Qualifications (Rail Infrastructure) on the Australian National Training Information Service.

Units of competencies related to Overhead Track Equipment as generated in Australia were obtained from the National Training Information Service (Web Site: www.ntis.gov.au), Certificate (Levels 1 - 4) in Transport and Distribution (Rail Infrastructure).

After scrutinising these, it was evident that the format and structure utilised within the Transport and Distribution Industry Specific Units (TDT02) - Equipment Checking and Maintenance, was different to those prescribed by SAQA. The technical content in the units of competencies were not specific and covered a broad spectrum of equipment and tasks. This resulted in Broad Assessment Criteria.

It was also found that although the Australian Qualifications Framework comprises thirteen national qualifications, the first five qualifications in the vocational education and training sector compare favourably with the FET levels within the NQF.

The SGG/SGA could not find any standards within the discipline of Overhead Track Equipment in other African countries where Overhead Track Equipment is utilised.

Various Railway companies in Africa have approached Transnet to assist in the training of their signalling maintenance officials. Once this is effected, the Unit Standards generated in South Africa will be utilised for such training.

Efforts to obtain British National Vocational Qualifications (NVQs) related railway signalling were unsuccessful. The NVQs are not accessible and could not be used for benchmarking.

During the development of the Unit Standards cognisance was taken of the implementation of a National Railway Safety Regulator. The National Railway Safety Regulator promotes and controls safe rail operations and recognises that this is fundamental to the safety of all persons and the environment. The Unit Standards in railway signalling were aligned to these ideals.

ARTICULATION OPTIONS

This is a qualification in a series in Overhead Track Equipment qualifications varying from NQF Level 2 to 4.

Vertical articulation is possible with:
> National Diploma: Management of Civil Engineering processes

Horizontal articulation is possible:
> FETC: Railway Signalling, Fault-finding and Repair of Equipment at Level 4
> National Certificate: Electrical Engineering at NQF Level 4
> National Certificate: Supervision of Construction processes

MODERATION OPTIONS

> Anyone assessing a learner or moderating the assessment of a learner against this Qualification must be registered as an assessor with the relevant ETQA body, or with an ETQA that has a Memorandum of Understanding with the relevant ETQA.
> Any institution offering learning that will enable the achievement of this Qualification must be accredited as a provider with the relevant ETQA body, or with an ETQA that has a Memorandum of Understanding with the relevant ETQA.
> Assessment and moderation of assessment will be overseen by the relevant Education, Training, Quality, Assurance (ETQA) Body, or by an ETQA that has a Memorandum of Understanding with the relevant ETQA, according to the ETQA's policies and guidelines for assessment and moderation.
> Moderation must include both internal and external moderation of assessments at exit points of the Qualification, unless ETQA policies specify otherwise. Moderation should also encompass achievement of the competence described both in individual Unit Standards as well as the integrated competence described in the Qualification.
> Anyone wishing to be assessed against this Qualification may apply to be assessed by any assessment agency, assessor or provider institution that is accredited by the relevant ETQA.

CRITERIA FOR THE REGISTRATION OF ASSESSORS

Assessors wishing to assess candidates against this qualification must have:

1. To be registered as an assessor with the relevant ETQA body or that has a Memorandum of Understanding with the relevant ETQA
2. A qualification in Overhead Track Equipment at NQF Level 5 or above
3. Practical work experience in the OHTE environment

NOTES

N/A

UNIT STANDARDS
(Note: A blank space after this line means that the qualification is not based on Unit Standards.)

	UNIT STANDARD ID AND TITLE	LEVEL	CREDITS	STATUS
Core	113873 Understand basic electrical and mechanical engineering principles	Level 4	8	Registered
Core	119881 Prepare a booster return conductor on 25/50 kV AC OHTE under isolated and earthed conditions	Level 4	9	Draft - Prep for P Cornment
core	119883 Remove, replace install and adjust section insulator/phase break/runners on 25/50Kv AC OHTE under isolated and earthed conditions	Level 4	9	Draft - Prep for P Comment
Core	119887 Remove, install/replace and adjust a steady arm and/or side strain insulator on OHTE	Level 4	9	Draft - Prep for P Cornment
Core	119888 Work to clearance from or on exposed "live" high-voltage overhead track equipment with mechanised maintenance vehicles	Level 4	7	Draft - Prep for P Comment
Core	119890 Sag and tension overhead conductors on OHTE under isolated and earthed conditions	Level 4	12	Draft - Prep for P Cornment
Core	119891 Remove, replace install and adjust section insulator and/or runners on 3KV DC OHTE	Level 4	10	Draft - Prep for P Cornment
Core	119892 Set the stagger and height of the contact wire on OHTE	Level 4	9	Draft - Prep for P Comment
Elective	10740 Lift and move a load using a mechanical lifting equipment	Level 3	7	Registered
Elective	14623 Afford on-track protection	Level 3	5	Registered
Elective	119884 Work on live 3kV DC OHTE, or to clearance from exposed "live' high-voltage electrical equipment (3kV DC, 25 kV and 50kV AC OHTE and all transmission lines and associated equipment)	Level 4	15	Draft - Prep for P Comrnent
Fundamental	8968 Accommodate audience and context needs in oral communication	Level 3	5	Reregistered
Fundamental	8969 Interpret and use information from texts	Level 3	5	Reregistered
Fundamental	8970 Write texts for a range of communicative contexts	Level 3	5	Reregistered
Fundamental	8973 Use language and communication in occupational learning programmes	Level 3	5	Reregistered

Fundamental	7468	Use mathematics to investigate and monitor the financial aspects of personal, business, national and international issues	Level 4	6	Reregistered
Fundamental	8974	Engage in sustained oral communication and evaluate spoken texts	Level 4	5	Reregistered
Fundamental	8975	Read analyse and respond to a variety of texts	Level 4	5	Reregistered
Fundamental	8976	Write for a wide range of contexts	Level 4	5	Reregistered
Fundamental	9015	Apply knowledge of statistics and probability to critically interrogate and effectively communicate findings on life related problems	Level 4	6	Reregistered
Fundamental	9016	Represent analyse and calculate shape and motion in 2-and 3-dimensional space in different contexts	Level 4	4	Reregistered
Fundamental	12153	Use the writing process to compose texts required in the business environment	Level 4	5	Registered

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UNIT STANDARD:

SAQA US ID	*UNIT STANDARD TITLE*		
119881 3	Prepare a booster return conductor on 25/50 kV AC OHTE under isolated and earthed conditions		
SGB NAME		*NSB 12*	*PROVIDER NAME*
SGB Electrical Engineering & Construction		Physical Planning and Construction	
UNIT STANDARD TYPE		*FIELD DESCRIPTION*	*SUBFIELD DESCRIPTION*
Regular		Physical Planning and Construction	Electrical Infrastructure Construction
ABET BAND	*CREDITS*	*NQF LEVEL*	*UNIT STANDARD TYPE*
Undefined	9	Level 4	Regular

SPECIFIC OUTCOME 1

Communicate clearly and concisely with relevant role players and complete relevant documentation.

SPECIFIC OUTCOME 2

Prepare booster return conductors.

SPECIFIC OUTCOME 3

Prepare return conductors according to company specific instructions and manufacturer's specifications.

SPECIFIC OUTCOME 4

Finalise the installation process of booster return conductors.

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UNIT STANDARD:

SAQA US ID	*UNIT STANDARD TITLE*		
119883	Remove, replace/install and adjust section insulator/phase breaklrunners on 25/50Kv AC OHTE under isolated and earthed conditions		
SGB NAME		*NSB 12*	*PROVIDER NAME*
SGB Electrical Engineering & Construction		Physical Planning and Construction	
UNIT STANDARD TYPE		*FIELD DESCRIPTION*	*SUBFIELD DESCRIPTION*
Regular		Physical Planning and Construction	Electrical InfrastructureConstruction
ABET BAND	*CREDITS*	*NQF LEVEL*	*UNIT STANDARD TYPE*
Undefined	9	Level 4	Regular

SPECIFIC OUTCOME 1

Communicate clearly and concisely with relevant role players and complete relevant documentation.

SPECIFIC OUTCOME 2

Prepare to remove, replace/install and adjust section insulator/phase break/runners on 25/50Kv AC on OHTE under isolated and earthed conditions.

SPECIFIC OUTCOME 3

Remove, replace/install and adjust section insulator/phase break/runners on 25/50Kv AC on OHTE under isolated and earthed conditions according to company-specific instructions and manufacturer's specifications.

SPECIFIC OUTCOME 4

Finalise the removal, replacement/installation and adjustmert of section insulator/phase break/runners on 25/50Kv AC on OHTE under isolated and earthed conditions.

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UNIT STANDARD:

SAQA US ID	*UNIT STANDARD TITLE*		
119884	Work on live 3kV DC OHTE, or to clearance from exposed "live" high-voltage electrical equipment (3kV DC, 25 kV and 50kV AC OHTE and all transmission lines and associated		
SGB NAME		*NSB 12*	*PROVIDER NAME*
SGB Electrical Engineering & Construction		Physical Planning and Construction	
UNIT STANDARD TYPE		*FIELD DESCRIPTION*	*SUBFIELD DESCRIPTION*
Regular		Physical Planning and Construction	Electrical InfrastructureConstruction
ABET BAND	*CREDITS*	*NQF LEVEL*	*UNIT STANDARD TYPE*
Undefined	15	Level 4	Regular

SPECIFIC OUTCOME 1

Work live on 3kV DC OHTE.

SPECIFIC OUTCOME 2

Work to clearance from exposed "live" high-voltage electrical equipment (3kV DC, 25 kV and 50kV AC OHTE and all transmission lines and associated equipment).

SPECIFIC OUTCOME 3

Perform switching, testing, and earthing on high-voltage overhead track equipment and all transmission lines and associated equipment.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

SAQA US ID	***UNIT STANDARD TITLE***		
119887	Remove, install/replace and adjust a steady arm andlor side strain insulator on OHTE		
SGB Electrical Engineering & Construction		Physical Planning and Construction	
UNIT STANDARD TYPE		***DESCRIPTION***	***SUBFIELD DESCRIPTION***
Regular		Physical Planning and Construction	Electrical Infrastructure Construction
ABET BAND	***CREDITS***	***NQF LEVEL***	***UNIT STANDARD TYPE***
Undefined	9	Level **4**	Regular

SPECIFIC OUTCOME 1

Communicate clearly and concisely with relevant role players and complete relevant documentation.

SPECIFIC OUTCOME 2

Prepare to remove install/replace and adjust a steady arm and/or side strain isolator.

SPECIFIC OUTCOME 3

Remove, install/replace and adjust steady arm and/or side strain isolator according to company specific instructions and manufacturer's specifications.

SPECIFIC OUTCOME **4**

Finalise the removal, installation/replacement and adjustment of steady arm and/or side strain isolator.

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UNIT STANDARD:

SAQA US ID	*UNIT STANDARD TITLE*		
119888	Work to clearance from or on exposed "live" high-voltage overhead track equipment with mechanised maintenance vehicles		
SGB NAME		*NSB 12*	*PROVIDER NAME*
SGB Electrical Engineering *8* Construction		Physical Planning and Construction	
UNIT STANDARD TYPE		*FIELD DESCRIPTION*	*SUBFIELD DESCRIPTION*
Regular		Physical Planning and Construction	Electrical Infrastructure Construction
ABET BAND	*CREDITS*	*NQF LEVEL*	*UNIT STANDARD TYPE*
Undefined	7	Level **4**	Regular

SPECIFIC OUTCOME 1

Prepare the mechanised maintenance vehicle.

SPECIFIC OUTCOME 2

Operate the mechanised maintenance vehicle.

SPECIFIC OUTCOME 3

Communicate clearly and concisely to relevant role players and complete relevant documentation.

SPECIFIC OUTCOME **4**

Work safely with due care for self, fellow workers, machines, equipment, materials and environment.

SPECIFIC OUTCOME 5

Shut down and secure the mechanised maintenance vehicle.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

Established in terms of Act 58 of 1995

UNIT STANDARD:

Sag and tension overhead conductors on OHTE under isolated and earthed conditions

SAQA US ID	UNIT STANDARD TITLE
119890	Sag and tension overhead conductors on OHTE under isolated and earthed conditions

SGB NAME	NSB 12	PROVIDER NAME
SGB Electrical Engineering & Construction	Physical Planning and Construction	

UNIT STANDARD TYPE	FIELD DESCRIPTION	SUBFIELD DESCRIPTION
Regular	Physical Planning and Construction	Electrical Infrastructure Construction

ABET BAND	CREDITS	NQF LEVEL	UNIT STANDARD TYPE
Undefined	12	Level 4	Regular

SPECIFIC OUTCOME 1

Communicate clearly and concisely with relevant role players and complete relevant documentation.

SPECIFIC OUTCOME 2

Prepare to sag and tension overhead conductors on OHTE.

SPECIFIC OUTCOME 3

Sag and tension overhead conductors on OHTE in accordance with company specific procedures and instructions.

SPECIFIC OUTCOME 4

Finalise the sagging and tensioning of overhead conductors on OHTE.

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

SAQA US ID	*UNIT STANDARD TITLE*		
119891	Remove, replaceinstalland adjust section insulator andlor runners on 3KV DC OHTE		
SGB NAME		*NSB 12*	*PROVIDER NAME*
SGB Electrical Engineering & Construction		Physical Planning and Construction	
UNIT STANDARD TYPE		*FIELD DESCRIPTION*	*SUBFIELD DESCRIPTION*
Regular		Physical Planning and Construction	Electrical Infrastructure Construction
ABET BAND	*CREDITS*	*NQF LEVEL*	*UNIT STANDARD TYPE*
Undefined	10	Level 4	Regular

SPECIFIC OUTCOME 1

Communicate clearly and concisely with relevant role players and complete relevant documentation.

SPECIFIC OUTCOME 2

Prepare to assemble, remove and replace section insulator and/or runners.

SPECIFIC OUTCOME 3

Assemble, remove and replace section insulator runners according to company specific instructions and manufacturer's specifications.

SPECIFIC OUTCOME 4

Finalise the assembling, removal, replacement, installation and adjustment of section insulator and/or runners.

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UNIT STANDARD:

Set the stagger and height of the contact wire on OHTE

SAQA US ID	*UNIT STANDARD TITLE*		
119892	Set the stagger and height of the contact wire on OHTE		
SGB NAME		*NSB 12*	*PROVIDER NAME*
SGB Electrical Engineering & Construction		Physical Planning and Construction	
UNIT STANDARD TYPE		*FIELD DESCRIPTION*	*SUBFIELD DESCRIPTION*
Regular		Physical Planning and Construction	Electrical Infrastructure Construction
ABET BAND	*CREDITS*	*NQF LEVEL*	*UNIT STANDARD TYPE*
Undefined	9	Level 4	Regular

SPECIFIC OUTCOME 1

Communicate clearly and concisely with relevant role players and complete relevant documentation.

SPECIFIC OUTCOME 2

Prepare to set the stagger and height of the contact wire on OHTE.

SPECIFIC OUTCOME 3

Set the stagger and height of the contact wire on OHTE in accordance with company specific procedures and instructions.

SPECIFIC OUTCOME 4

Finalise the setting of the stagger and the height of the contact wire on OHTE.