Eskom	Standard	Distribution & Transmission

Title: **POWER DELIVERY OPERATING ASSESSMENT, AUTHORISATION AND TRAINING STANDARD**

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Content

Executive Summary

Inconsistency, non-standardised training, assessment and authorising of candidates negatively affect the safety of staff and contractors, as well as the performance of the network.

The changing of the national skills development legislation, the changing of the Eskom business processes and skills development environment all required standardization of training processes, curricula, and assessments.

A standard became imperative where all Eskom employees, contractors, and staff requiring Operator Training to be trained and assessed according to specific guidelines.

This standard applies to any person who requires High Voltage (HV), Medium Voltage (MV), Low Voltage (LV) and Live Work (LW) authorisations.

1. Introduction

The Eskom Strategic Plan seeks to:

- position Eskom as an organization that supports the national objectives of a developmental state; and
- create a sustainable working environment where all employees contribute to their full potential.

In support of the Eskom's competency management procedure, the Wires Business is committed to positioning themselves as learning organizations, and to enhancing and aligning themselves with leading practices to ensure that this is achieved successfully.

This Standard intends to provide for the competencies (i.e., core, technical and behavioural) required, underpinning Eskom's strategic business direction. The competency and learning management framework is the basis for an integrated approach to talent management and business performance improvement.

Due to historic inconsistencies with regards to the training, assessment, and authorisation of candidates in terms of Legislative Operating Training, Operating Regulations for High Voltage Systems (ORHVS) and Low Voltage Systems for Operating Regulations (LVOR), this standard aims to address these inconsistencies.

If you have MV and HV authorisation you cannot operate on the LV network. Where applicable needs to be in the position of MV and LV authorisation.

2. Supporting clauses

2.1 Scope

This standard directs the consistent, transparent and fair processes and procedures for training, assessments, certification and authorisation in accordance with the Eskom requirements, standards and policies.

2.1.1 Purpose

The purpose of this standard is to define the criteria and parameters for training, assessments and authorisation in accordance with the training and assessment processes in compliance with legislative training.

2.1.2 Applicability

This document shall apply throughout the Eskom Wires Business and includes all contractors and/or other persons that requires authorisation in terms of the Occupational Health and Safety Act, ORHVS and LVOR.

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] 240-114967625, Operating Regulations for High Voltage Systems

[2] 240-70413681, Portfolio of Evidence for Authorisation

[3] 240-86640998, Supervision of people in electrically hazardous locations

[4] 240-139250902, Authorisation Standard for Legislative Training Practitioners

[5] 240-78692652, Standard for use and maintenance of Portable Earthing

[6] HVA 001, ORHVS Awareness

[7] OL4 001, PTO&W and PTS

[8] 240-61523882, LV Operating Regulations

[9] 240-130765713, General Machine Regulation 2 compliance

[10] 240-60725815, Transmission High Voltage Live- Work Training Standard

[11] 240-128673233, Portfolio of Evidence for Transmission High Voltage Live Work Authorisation

2.2.2 Informative

[12] Process Control Manual for Learning Delivery

[13] 32-1025, Mentorship and Coaching Procedure

[14] 47-465, Operating Manual of the Steering Committee of Wires Technologies (SCOWT)

[15] 240-44175132, Provision and use of personal protective equipment

[16] 240-13969158, High Voltage Live Work Training Standard and Assessment Standard

[17] 559-668198576, Pre-Task planning and Feedback Process (old 34-227)

[18] 32-95, Procedure of the Effective Management of Safety, Health and Environmental related Incidents

[19] 209-0001, Certification of Engineering Training Facilitators

[20] 240-139250902, Authorisation of Legislative Training Facilitators/Practitioners

[21] 240-70500880, Standard for control and application of locks and issuing of master keys

[22] 240-70500896, Standard for master locks and master keys for electrical and related equipment

[23] 240-147632179, Permission to Operate and Work(PTO&W) and Permission to Sectionalise (PTS) in Distribution Division

2.3 Definitions

2.3.1 General

In addition to the definitions in Operating Regulations for High Voltage Systems (240-114967625) and Low Voltage Operating Regulations (240-61523882), the following definitions also apply:

Definition	Description
Appointed	Written confirmation by the Designated/Delegated Person or employer, with specific duties and responsibilities assigned.
Assessment	Assessment is a process of making judgments about an individual's competence through matching evidence collected to the appropriate nationally agreed-upon Standards.
Assessor	Any person who has been trained found competent and appointed as an assessor by the designated/Delegated person.

Definition	Description
Authorisation Outcome	Distinguishes between the different levels of authorisation.
Authorisation Suspension	The suspension of authorisation due to temporary circumstances, e.g. failure of a legislative course, medical reasons, incident investigations, expiry of legislative courses, etc.
Authorisation withdrawal	Authorisations will be withdrawn in writing by the designated person/GMR2.1 pending the investigation outcome
Coach	A person who is authorised to the level of instruction, and appointed as a Coach in the discipline in which transfer of learning is done, he/she facilitates practical learning experiences, conducts pre-assessments and presents information to individual learners.
Continuous Learning	The process of maintaining knowledge, skills and technology updates to retain the current authorisation.
Course	A formal training intervention facilitated by an Accredited Facilitator.
Cross Boundary Authorisation	Between Sectors/Grids/Zones
Delegated Person	A person appointed by the designated person under the Occupational Health and Safety Act 85 of 1993. GMR 2.7(a).
Designated Person	A person appointed under the Occupational Health and Safety Act 85 of 1993. GMR 2(1) or his/her delegate
Facilitator	A person who is formally appointed and listed on the National Facilitator Database to present training in a specific discipline where transfer of learning is done, who facilitates structured learning experiences, presents information to groups of learners and conducts assessments
Formal Learning Process	Formal learning consists of a structured curriculum, registered modules, registered assessments, accredited facilitators, accredited training centres and all learning interventions with certification are captured on a formal learning system (LSO).
Learning Maintenance	The process of developing a personal career path, individual development plan into a structured program referenced to the required outcome of the respective Portfolio of Evidence. The latter reflects the completed elements of the program while it guides future requirements.
Line Manager/Senior Supervisor	A person you directly report to in terms of the chain of command.
Low voltage	Voltage that does not exceed 1000 V alternating current (AC) or 1500 V direct current (DC)
Master Facilitator	A person who has been appointed by the Learning and Development to oversee Legislative Training in their respective areas. Master facilitators are also members of the ORHVS or LVOR Training Care Group.
Moderator	A person who is formally appointed by the Designated/Delegated Person to ensure that the assessment process is followed according to the standard
Module	An approved training manual used for formal training interventions.
Mutual Agreement	An agreement that is documented which will include electronic formats.
Non-conformance in competence requirements	Non-achievement in meeting the specified competence for the theoretical and/or practical learning processes and authorisation assessments within the set time frame.

Definition	Description
Non-dangerous activities	Any activity that does not require operating on the electrical network, and the activity does not pose a significant risk of harm, injury or damage to people, property, or the environment.
Permission to Operate and Work	Means permission granted by a Control Officer to an Appointed Operator authorising switching, linking, safety testing, earthing and handover of apparatus in a designated/delegated section of the network in preparation for work.
Permission to Sectionalise	Means permission granted by a Control Officer to an Appointed Operator/s authorising switching and linking on a designated/delegated section of the network to locate and isolate faulty plant from the rest of the network and restore supply to healthy sections of the network.
Portfolio of Evidence	A collection of evidence, personal record, and documentary evidence of knowledge, skills and experience compiled by a candidate to prove his/her learning and practical experience needed for authorisation.
Pre-assessment	An assessment carried out on the candidate by the Line Manager to recommend, in writing, that the candidate is competent and ready for formal assessment
Registered	A person who has been registered with a recognised accreditation Body.
Subject Matter Expert (SME)	A person with sufficient appropriate experience and documented evidence to prove expertise in a specific subject matter and who is appointed as a coach by the designated/delegated person.
Suspend	To temporary remove an authorisation due to expiry of legislative certificate or outcome of a safety investigation or failure of a legislative course.
Training Curriculum	A collection of/or courses that follow a sequential order to ensure optimal learning.
Validity Period	The period for which an authorisation is valid as stipulated on the authorisation.
Workplace Training	Training that reinforces the formal learning completed and is facilitated by an appointed coach in the workplace.
Withdrawn	Authorisation cancelled until a full authorisation assessment is carried out and re- authorised by GMR 2.1.

2.3.2 Disclosure classification

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

2.4 Abbreviations

Abbreviation	Description
AO	Appointed Operator
BKRS	Breakers
CNC	Customer Network Centre
DNOC	Distribution Network Operating Committee
EAL	Eskom Academy of Learning
FL	Fault Level
GMR	General Machinery Regulations

Abbreviation	Description
HV	High Voltage (44kV up to 765kV)
IPS	Interconnected Power System
kV	Kilo Volts
LV	Low Voltage
LVOR	Low Voltage Operating Regulations
LW	Live Work
MV	Medium Voltage (up to 33kV)
NC	National Control
NERC	North American Electricity Reliability Council
NTCSA	National Transmission Company of South Africa
OHS ACT	Occupational Health and Safety Act 85 of 1993
ORHVS	Operating Regulations for High Voltage Systems
OTS	Officer Technical Support
PCM	Process Control Manual
POE	Portfolio of Evidence
PTO & W	Permission to Operate and Work
PTS	Permission to Sectionalise
QOS	Quality Of Supply
ROT	Risk Of Trip
RX	Reactor
SAP LSO	SAP Learning Solution
SAPP	Southern African Power Pool
SH	Shift Hand-Over
SME	Subject Matter Expert
SOG	System Operating Guideline
SVC	Static Var Compensator

2.5 Roles and Responsibilities

The Line manager shall be responsible for the implementation of this standard. The designated person/GMR 2.1 shall be accountable to ensure compliance of this standard.

2.6 Process for monitoring

Monitoring shall be done as per SAP LSO and applicable databases.

2.7 Related/supporting documents.

Parties using this document shall apply the most recent edition of the documents referred in the Normative/informative references.

3. Strategy

To achieve training operating and authorisation excellence, all training, operating and authorisations must be done according to the set rules and processes. All first-time attendees of ORHVS / LVOR will have to comply with the training as per their Job outputs for guidance of training per designation in the Operating and Maintenance environment.

4. Course Management

4.1 Pre-Requisites and Course Plan

Before bookings for any courses shall be made the pre-requisites must be confirmed by the Candidate, Line Manager/Supervisor and the SAP LSO Administrator to be in place for each course.

All pre-requisite courses as per curriculum shall be attended and the candidate found/declared competent with an accredited facilitator/provider.

Only certificates or the SAPLSO records may be used as proof of having completed the prerequisites for a course.

Pre-requisites may not be confirmed on the day of the course. Should a person attend a course without the required pre-requisites the course will not be valid and will need to be re attended after the pre-requisite requirement is met.

Prerequisites will be determined by the relevant Scott committees.

Pre-requisites as per Annexure DD shall apply to all persons wanting to attend any of the operating courses for the purpose of being authorised.

Support staff including GMR 2.1 and GMR 2.7 (a) appointees that wants to attend training but will not be authorised on any outcome may attend the training without the prerequisites on condition of the following:

- They must be loaded on SAPLSO under D50258788 Conference/Seminar/Workshop
- The certificate must clearly state that it is not for authorisation purposes.
- No external person to ESKOM may attend any of the courses without having met the required prerequisites.

4.2 SAP LSO

Only SAP LSO may be used to record learner training activities and to book resources. The following shall be adhered to:

a) All courses attended by Eskom employees shall be scheduled and captured on the SAP LSO system.

b) All learners attending these courses must be captured on SAP LSO prior to the start date of training.

c) Resources such as the facilitator name and venue shall be captured on the SAP LSO system prior to the date of training.

d) All Legislative courses shall be presented according to the prescribed course duration as per the learning material.

e) HVO 01, HVO 02 and HVO 04 must be treated as separate courses and an event number must be created for each course e.g. If a candidate attends HVO 01, HVO 02 and HVO 04, three SAP LSO numbers must be created.

4.3 Number of Learners/Candidates

4.3.1 Formal Learning Courses

A maximum of fifteen (15) learners shall be allowed to attend any authorisation related formal learning course at any given time except in the case of Live Work, where it must be referred to the Live Work Training Standard.

4.3.2 Special needs/Barriers to learning:

Where there are learners with physical special needs (excluding language) it is the responsibility of the learner to inform the facilitator of such needs/barriers prior to the course so that appropriate arrangements can be made.

4.4 Competency Declaration

4.4.1 Formal Courses except ORHVS

For all formal courses related to authorisation a minimum pass mark of 80% is required.

If a learner/candidate was found not yet competent with a percentage of more than 70%, one re-write will be allowed and must take place within thirty (30) days. Although a new assessment must be applied for, the original course number shall be used to capture the result of the re-write.

If less than 70 % is achieved no re write will be allowed and the course must be redone.

If the learner/candidate was again not found competent the entire course will be re-attended.

All facilitators shall obtain a minimum of 90% to be declared competent and may only re-write if 80% or above has been achieved.

4.4.2 ORHVS

A certificate shall be issued for the outcome passed e.g., applied for HVO 04 but only pass HVO 02 then a certificate for HVO 02 could be issued if requested.

The pass mark for HVO 01, HVO 02 and HVO 04 will be 80%. Facilitators and Assessors shall obtain 90% for theoretical assessments and a re-write will only be allowed if a percentage of 80% or more was achieved and this re write must take place within thirty (30) days.

Re-writes shall be allowed for either HVO 01 or HVO 02 under the following conditions:

a) If either HVO 01 or HVO 02 was failed, with a percentage of 70% or more, one re-write will be allowed per module.

b) If either HVO 01 or HVO 02 was failed, with less than 70%, both HVO 01 and HVO 02 will be redone, and the student may not continue with HVO 04.

c) Rewrites for HVO 01 and HVO 02 must be done within the same week that the course was attended.

For HV04 a re-write will only be allowed if a percentage of 70% or more was achieved and this re-write must take place within thirty (30) days. Although a new assessment must be applied for, the original course number shall be used to capture the result of the re-write.

If a HV04 re-write was unsuccessful a course attendance of HV04 is mandatory.

Should any of the ORHVS course assessments not be passed the person`s authorisation shall be suspended until such time as the person have passed the required module or modules.

The course duration shall be guided by the duration as specified in the training material.

Consequence management should only commence if the failure will impact the persons authorisation or his/her ability to maintain such authorisation.

To support the Performance Management Procedure the facilitator must provide line management with a written report as to knowledge gaps identified and/or behavioural issues of the candidate.

4.4.3 LVOR

4.4.3.1 Low Voltage Operating Training

LV Operating Regulation Training Module LVOR 001

Operate on LV Network Training Module LVOP 001

4.4.3.2 Control Plant (CPM) and Power plant (PPM) Maintenance Training

CPM and PPM employees will be authorised as per PoE document 240-70413681

The LV Regulation Training Manual LVOR 001 is a two-day course with assessment.

4.4.3.3 CNC Staff/Contractor Training

CNC staff & contractors will do the following modules:

LV Operating Regulation Training Module LVOR 001 with assessment, two-day course.

Operate on LV Network LVOP 001 with both theoretical and practical tests.

4.4.3.4 Meter Reader

Meter reader to attend Low Voltage Regulations

4.4.3.5 LVOR Pass mark

The pass mark for all staff mark for LVOR 001 Low Voltage Regulations will be 80% except for Facilitators and Assessors that shall obtain 90% for theoretical assessments and a re-write will only be allowed if a percentage of 80% or more was achieved and this re write must take place within thirty (30) days.

Should the LVOR course assessment not be passed the person`s authorisation shall be suspended until such time as the person have passed the module.

4.5 Course Duration

The outcome that is required for ORHVS must be completed within ninety (90) days e.g., HVO 04 must be completed within ninety (90) days from the start date of the HVO 01 module. Should a person complete HVO 02 and later decide to complete HVO 04 it must be completed withing the ninety (90) day period. (This only applies to HVO 04)

4.6 Training Interventions

Only the latest approved and published training material, presentations and assessments may be used during training interventions, and any additional training aid to assist the training material. The venue to be used should be suitable for the number of learners and be conducive to an effective learning environment.

All technical courses related to authorisation e.g., Line Construction, LV Operating Regulations and Operate on LV Networks, etc. may only be facilitated by Eskom accredited facilitators. Pre-requisites for these courses shall also be facilitated by Eskom accredited facilitators. (This excludes SHEQS courses) The names of Eskom accredited facilitators are available on the Eskom National Facilitator Data base by sending an e mail to facilitators@eskom.co.za and typing the word facilitators into the subject line.

4.7 Assessments

The following criteria shall apply in terms of assessments for Legislative Operating courses:

- NO oral examinations shall be allowed for any formal authorisation courses.
- Only the Eskom official language shall be used during presentation and assessments.
- Formal course assessments may only be invigilated by accredited facilitator that are appointed and listed on the national facilitator data base.
- All ORHVS, Equipotential earthing and Supervision assessments must be issued by a Master Facilitator, application must be done by the accredited facilitator seven (7) before the course start date. Any assessments conducted without requesting the assessments will result in the assessment being void and the certificate not being valid.

4.8 Validity

ORHVS certificates are only valid for a period as stipulated in the ORHVS standard and LVOR certificates shall be valid for a period of Five (5) years.

Knowledge assessments may only be invigilated by an accredited facilitator/invigilator that is listed on the national facilitators database and must be recorded on SAP LSO by utilising the separate HVO 01, 02, 04 and LVOR course numbers.

4.9 Minimum Requirements for Certification

ESKOM issued certificates that complies to all requirements as listed below may be issued electronically in PDF format and need not be certified for use in the POE. All external certificates must be certified before use in the POE.

Course Certificates may only be issued by registered administrators that are registered on the National database. Should an external company not have a registered administrator the facilitators linked to that company will have their accreditation suspended until such time as the company have a registered administrator.

Before any new certificates are issued the administrator must be in possession of the following:

- Proof of course captured on SAPLSO.
- Signed attendance register.
- Completed assessments.

For all certificates that are re issued as replacements the administrator shall ensure that the course was captured and that the person was marked competent on SAP LSO.

All administrators shall be appointed by Learning and Development before being added to the National Facilitators Database. This will apply to ESKOM and external Training Provider administrators.

The following are the minimum that must be included on a certificate:

- SAP LSO Event numbers of all the modules attended.
- Name of Facilitator in print
- Eskom Accreditation number of Facilitator
- Expiry date (if applicable)
- Course date (if no expiry date)
- Name and ID or Unique number of Learner
- Full description of Course attended.
- Name and registration no of registered administrator that issued the certificate.

For external course certificates the following must be evident:

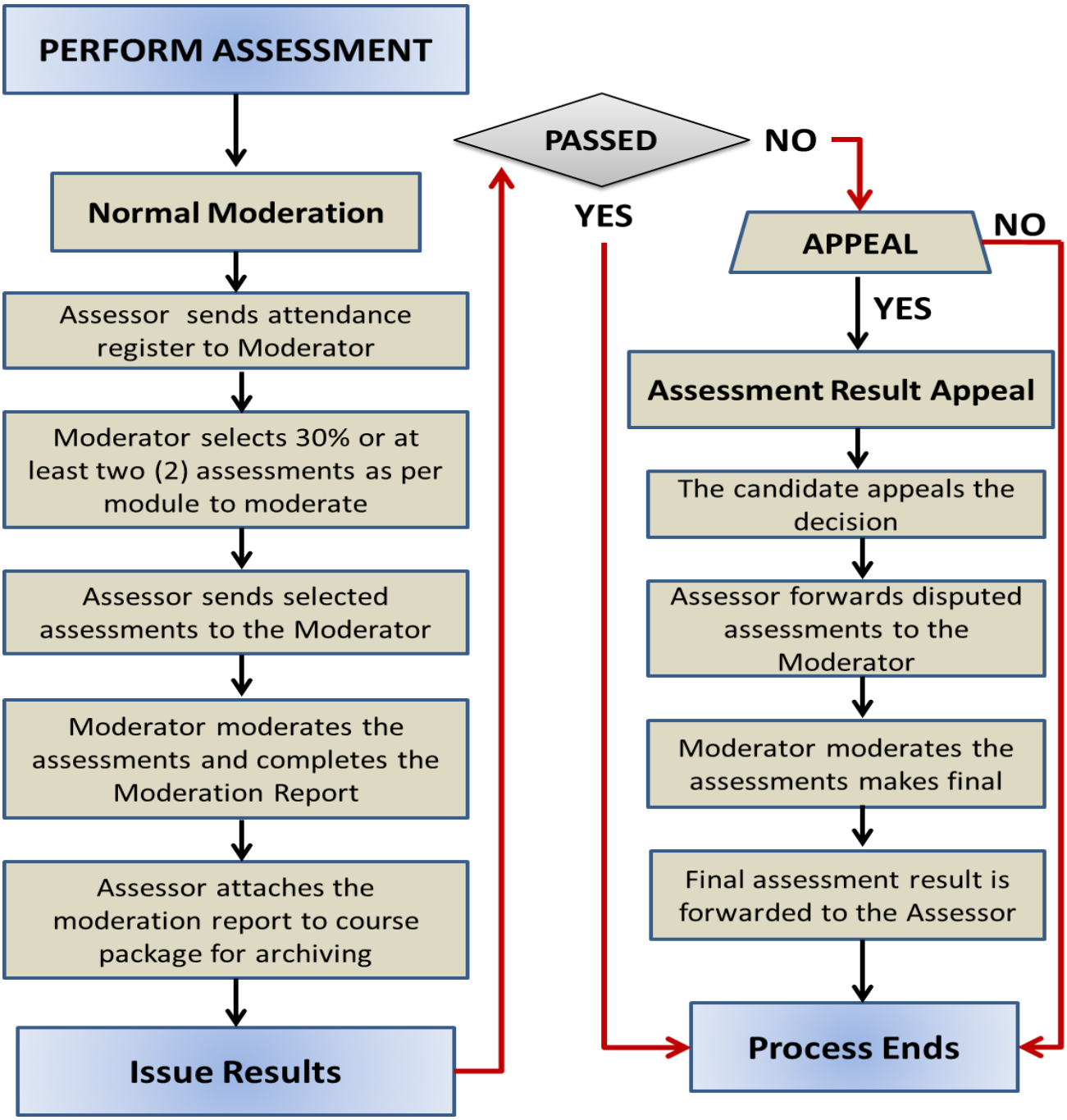
- External Provider Course number (created by the External Facilitator)
- Name of Company
- Name of Facilitator in print
- Eskom Accreditation number of Facilitator
- Expiry date (if applicable)
- Course date (if no expiry date)
- Name and ID or Unique number of Learner
- Full description of Course attended.
- Name and registration no of registered administrator that issued the certificate.

4.10 Training Curriculum

See Annexure DD

4.10.1 Legislative Moderation

The flow chart below details the process to be followed for legislative moderation and shall be carried out by the Master Facilitator:



5. Role Players and Responsibilities

5.1 Administrators

All administrators shall:

a) Ensure that they are registered on the National Facilitators Database.

b) Confirm that pre-requisites are met before students are booked on courses.

c) Ensure that SAP LSO reflects all students attending courses prior to course start.

d) Ensure that the Facilitator's name and course venue are captured on SAPLSO before course starts.

e) Ensure all documentation is in place before a certificate is issued.

f) Ensure that all SAPLSO courses are followed up before a certificate is issued.

5.2 Facilitators

All facilitators shall:

a) ensure that their accreditation is valid and on the National Facilitators Database.

b) use the latest revision of current training material.

c) adhere to the Authorisation of Legislative Training Facilitator/Practitioner Standard.

d) where applicable, apply for Legislative Assessment Tools from a Master Facilitator at least seven (7) days before the start of the course and not on the day of the course.

e) shall be held responsible for all assessments issued to him, be it printed or electronically.

f) administer and oversee the formal learning process.

g) provide the candidate with their results in writing.

h) submit assessments for moderation as per the facilitation moderation process.

i) provide line management with feedback for any Legislative courses that learners have been found not yet competent.

5.3 Line Manager/Senior Supervisor

The Line Manager/Supervisor shall:

a) ensure that the learner meets the requirements as per the pre-requisites for the relevant training courses.

b) ensure that should a learner be found not yet competent for any of the Legislative courses and a valid authorisation exists, such authorisation shall be suspended until such time as the learner is found competent.

c) ensure that all competency gaps are closed before authorisation or re-authorisation is applied for.

d) ensure that candidates attend relevant courses.

e) ensure that all his/her employees keep an updated Portfolio of Evidence (PoE).

f) do a pre-assessment of the candidate and on successful completion of the pre-assessment, declare the candidate ready for the authorisation assessment.

g) conduct a competency gap assessment together with the learner/candidate, where after they shall agree on a plan to address the identified competency gaps.

h) ensure that the PoE and the PoE quality checklist is checked and signed off.

i) apply to the Assessor for a competency assessment to be conducted.

j) identify and arrange the plant for the practical assessment.

k) arrange for a SME to be available during the assessment.

l) check that training is in line with IDP.

m) deal with special learning requirements.

n) On completion of the successful assessment, he/she shall forward a signed copy of the Authorisation form for the candidate to Technical Support and the relevant Control Centre.

o) Ensure that when any legislative certificate expires the GMR 2.1 is notified so that the Authorised person`s authorisation is suspended.

5.4 Technical Support Manager in DX space

The Technical support manager shall ensure when submitting a request for OTS to be appointed by the GMR2.1 as Assessor/Coach/Facilitator/Moderator that:

a) the OTS meets the requirements to carry out Assessments,

b) the OTS that request appointment as Coach, had attend the required training and in possession of a valid training certificate,

c) the OTS that request appointment as Facilitator or Moderator had attend the required training and meet the minimum requirement,

d) ensure that all competency gaps are closed before request for appointment.

e) apply to the GMR2.1 for appointing the OTS, including with the relevant proof of training or accreditation.

f) do at least 2 observations on an OTS per annum while conducting authorisation assessments.

g) ensure OTS keep authorisation database updated and submit reports to the cluster/province managers as per business requirement.

5.5 Learner/Candidate or Authorised Person

The Learner/Candidate shall:

a) be responsible for his/her own development.

b) ensure that all pre-requisites for required courses are met.

c) conduct the competency gap assessment together with his/her Line Manager/Supervisor, where after they shall agree on a plan to address the competency gaps.

d) acquire all the necessary pre-requisites as per the PoE document.

e) keep an updated PoE and the PoE quality checklist (Section K of the PoE) is completed and signed by both the candidate and the Line Manager/Senior Supervisor.

f) ensure that Authorisations stay valid by maintaining the requirements of all statutory training for the Authorisation validity period and ensure that the process for renewal is started three months before the expiry date.

g) complete and submit a request for pre-assessment as per Annexure A.

h) attend an initial Pre-Assessment Meeting with Line Manager/assessor.

i) undergo theoretical/practical assessment as required/instructed.

j) perform tasks as per applicable documentation.

k) ensure that all new requirements for re-authorisation are reflected.

l) on request produce positive identification and original Authorisation form.

Note: An Incomplete Portfolio of Evidence shall result in the rejection of the request for assessment

5.6 Master Facilitator

The Master Facilitator shall:

a) be appointed in writing by learning and development manager.

b) where applicable, check the validity of the facilitator's accreditation before issuing assessments.

c) conduct refresher training sessions on new legislative requirements.

d) where applicable, ensure that all assessments have the name of the Master facilitator, the facilitator, SAP LSO number and the assessment issue date displayed on them.

e) shall conduct moderation according to the Moderation Process.

f) where applicable, shall ensure that the assessment tools are sent to the facilitator at least one day before the assessment is to take place.

g) ensure that he/she is a member of the Study Committee, Work Group or Care Group of that subject.

5.7 Assessor

The Assessor shall:

a) be appointed in writing by the designated/delegated person or in the case of System Operator appointed in writing by the National Control Centre Manager

b) arrange and conduct initial meeting according to standard Agenda in Annexure D with the candidate and immediate Line Manager/Senior Supervisor.

c) compile the Assessment Documentation Folder according to the Assessment Documentation Checklist as per Annexure C.

d) draw up and prepare a Knowledge Assessment Questionnaire as per the minimum requirements.

e) prepare an Observation sheet.

f) select and coordinate an Assessment Panel.

g) chair the Authorisation Assessment.

h) conduct theoretical/practical assessment according to the assessment checklist.

i) scrutinize assessment pre-requisites and accept/reject.

j) hand over assessments for moderation when requested.

k) complete authorisation form and documentation in assessment file.

l) update learner Authorisation competency on Maximo / NTCSA.

5.8 Coach

The Coach shall:

a) be appointed in writing by the designated/delegated person or in the case of System Operator appointed in writing by the National Control Centre Manager

b) coaching the learner to attain requirements for authorisation.

c) ensure that the candidate successfully completes his/her workplace training before it is signed off in the portfolio of evidence.

d) ensure that the individual is achieving optimum on-the-job performance.

e) provide regular hands-on leadership, clear guidance, and direction as to what is expected from the learner and on-going feedback about the learner's performance.

5.9 Moderator

The Moderator shall:

a) be appointed in writing by the designated/delegated person or in the case of System Operator appointed in writing by the National Control Centre Manager

b) moderate assessments and the assessment process according to the moderation process.

c) issue a moderation report.

d) deals with the Assessment Appeal Process.

e) investigate alleged non-conformances.

f) advise and support assessors for corrective actions.

g) keep accurate verification records.

h) liaise with external moderator when required.

5.10 Designated/Delegated Person

The Designated/Delegated person shall:

a) be appointed in writing.

b) ensure persons to be authorised have been trained, assessed and declared competent for authorisation.

c) ensures alignment between job profile, job compact and authorisation outcomes.

d) limit restrictions on authorisations as required and ensure that restrictions/shortcomings are addressed through job compacts and individual development plans.

e) competencies are maintained and developed by implementing a continuous learning process.

f) investigate the expiry of authorisations as negligence of duties.

g) initiate investigations for non-conformance when required.

h) suspend or withdraw Authorisation.

5.11 Right to Authorise

The Right to Authorise shall.

a) be an appointed GMR 2.1 as appointed by the 16.2 (who has the legal authority to do so in that area, or the General Manager who has full authority to appoint) for a specific area and will only authorise staff working in the areas of his/her accountability and is in possession of a valid ORHVS certificate.

b) be an appointed GMR2.7(a) as appointed by the 16.2 (who has the legal authority to do so in that area, or the General Manager who has full authority to appoint) to assist a GMR2.1 appointee when require, and will only authorise staff working in the areas of his/her accountability and has attended an ORHVS course and is in possession of a valid ORHVS certificate.

c) Control Centre Managers or NOS managers to be appointed as in (a) or (b) when meeting the requirement as a “Competent Person” as defined in the GMR or special request to be submitted to the department of labour as stipulated in GMR2(6) to authorise Control Centre Officers and will only authorise staff working in the control centre of his/her accountability. The appointed Control Centre manager or NOS manager to attend an ORHVS course and is in possession of a valid ORHVS certificate.

d) For **NTCSA System Operator Control Room Environment**

In NTCSA System Operator Control Centre Environment, the "Right to Authorise" shall be the responsibility of the Authorisation Committee as outlined in paragraph 3.7 of the **Evaluation and Authorisation of Controllers for Load Dispatch, Transmission, Voltage Desk Authorisations,** Document number**: 342-477.**

The Authorisation Committee shall be a governance body constituted by the 16(2) of the OSH Act, in this instance being the GM of System Operator. The Committee shall exercise the authority of the GMR2(1) with regard to Controller Authorisations.

The committee shall comprise of the National Control Manager, a Competent Person (i.e., individual with a valid Government Certificate of Competency, GCC), at least 2 PSM's, an appropriately qualified and accredited representative from SOC and a subject matter expert (optional). The 16(2) will appoint the chair of the committee.

6. Portfolio of Evidence and Individual Development Plan

All persons required to be authorised in terms of this standard shall have a Portfolio of Evidence (PoE), which remains in place after authorisation to ensure the maintenance of, and further development of the person's competency is captured. A competency gap assessment must be done using the PoE as a guideline where after identified gaps should be recorded on the candidate's Individual Development Plan (IDP).

7. Formal Learning Process

The competency gaps identified shall be addressed using the formal learning process. All formal learning legislative courses need to follow a sequential order as specified in the authorisation curriculum and the Portfolio of Evidence. All formal learning interventions must be certificated and captured on the formal Eskom learning system (SAP LSO). Only certificates shall be accepted as proof of formal learning. (No attendance registers or results sheets may be accepted).

8. Workplace Training

Prior to completion of formal learning the candidate must undergo workplace training to reinforce and enhance the formal learning process. Workplace training also provides additional fundamental competencies related to the specific area or plant which cannot be obtained during the formal learning process and is captured in a portfolio of evidence.

Physical operating exercises on various job specifics as required by the Authorisation outcome. Evidence of these operating tasks shall be on record in the PoE. (e.g., Signed Operating Instructions by the coach, learner and supervisor)

9. Completion and Updating Portfolio of Evidence

The POE must be continuously updated pre and post training to reflect all the competencies and training received by the candidate. This shall include all relevant documents, for example, Formal Training, Standards, Procedures, Task Manuals and Policies.

10. Continuous Development

The authorised person shall maintain his level of competency by means of active participation as per Section E of the POE.

If an appointed operator has not performed operating as per the ORHVS definition for a period of six months, the current authorisation must be withdrawn and/or replaced with "Operating under Supervision" (Outcome 2).

Excluding Officer Technical Support and Controllers.

Note: Documentary evidence shall be kept in the Portfolio of Evidence.

10.1 Authorisation activity assessment / observation

Line Managers/Senior Supervisors shall carry out task observations on all authorised persons regularly, but at least once (1) every six months as per Power Delivery Operating Training Standard check sheet as per registered job observations forms and three (3) task observations in a twelve (12) month period for Live Work as per the High Voltage Live Work Training Standard and once(1) every twenty four months (24) for Transmission as per the Transmission High Voltage Live- Work Training Standard.

11. Assessment Process

When the minimum requirements have been met and an updated PoE for the required outcome is presented, the following assessment process shall be adhered to: (This applies to first-time authorisation and re-authorisation).

11.1 Pre-Assessment

Line Manager/Senior Supervisor or Contractor (Employer Section 16(1) or his delegate 16(2)) shall declare his/her employee competent.

An employers' appointee shall conduct the pre-assessments as per Power Delivery Operating Training Standard check sheet as per registered job observations forms prior to the authorisation assessment and include the supporting documents in the portfolio of evidence. If the learner is found not yet ready for assessment, the learner should be referred to obtain more theoretical knowledge and/or practical experience as necessary.

Note: For MV and HV operating staff needs to have Outcome 2

11.2 Application

The Line Manager/Supervisor (Eskom or Contractor) shall apply in writing to an assessor, or the person agreed to by the OU/Grid who initiates an authorisation assessment and shall identify and arrange the plant for Practical Assessment of his/her staff.

Refer to: Application for Authorisation Assessment in Annexure B. (Refer to re-authorisation)

11.3 Verification of Requirements

During the verification of requirements for assessment the Assessor shall verify that the minimum requirements in the Portfolio of Evidence as per the required authorisation outcome have been met.

12. Conduct Authorisation Assessment

The Authorisation Assessment shall consist of the following three elements:

- theoretical knowledge assessment.
- practical assessment.
- verbal assessment during practical for clarification such as area specific requirements e.g., Geographical lay-out.

The candidate shall demonstrate competency by achieving a minimum of 80% for each theoretical element and meet the practical elements to obtain authorisation.

When a candidate is found not yet competent on any of the elements, he/she shall be allowed a second assessment attempt after bridging training or exposure. Should the candidate then fail the second attempt the entire process shall be repeated.

The authorisation assessment documents on first time assessments (Theory/ Practical/ Verbal assessment documents) should only be kept/ filed for the validity period of the authorisation up to but not exceeding (3) three years, after which it will be replaced every time with the re-authorisation assessment documents (Application/ all Legislative Pre - Requisites & On Job observation by Snr. Supervisor) and kept for validity period of the authorisation up to but not exceeding (5) five years.

12.1 Theoretical Assessment

Theoretical assessments shall be compiled and consist of a combination of questions on specific disciplines relevant to the outcome, i.e.

- Apparatus, Network Layout and Electrical Theory.
- Applicable Standards/Procedures/Directives.
- Area specific (compiled at Operating Unit/Grid level).
- Operating Scenarios.
- Operations/Technical Competencies.
- ORHVS/LVOR.
- Protection.
- Safety.

A theoretical examination that was successfully passed will be valid for a period of three months, if the person is not authorised within this period the examination shall be rewritten.

12.2 Practical Assessment

The assessment shall be a practical demonstration by the candidate proving that he/she can satisfactorily perform the required tasks/activities for the required outcome.

System simulations can be used in terms of practical assessment in the control environment, LV environments, Outcome 3 Responsible person and Outcome 1 Access and Supervision.

The practical assessment shall be carried out by a panel consisting of the following persons:

Note: If holding a valid authorisation an assessor can serve two roles as an Appointed Operator / Control Officer.

OUTCOME	DESCRIPTION	RESPONSIBLE PERSON
1	Access	• Assessor • Line Manager/Senior Supervisor or in the case of a contractor the candidate's Employer or delegate
2	Operating under Supervision	• Assessor collection of evidence • No practical assessment required
3	Responsible Person	• Assessor • Line Manager/Senior Supervisor or in the case of a contractor the candidate's Employer or delegate
4, 5, 6	Appointed Operator	• Assessor • Line Manager/Senior Supervisor and Subject matter expert (learner shall operate under the Appointed Operator's supervision) • Control Officer on duty at the Control Centre (feedback to be submitted to Assessor in writing)
	PTO&W, PTS, Phasing and Local Control	• Assessor • Line Manager/Senior Supervisor and Subject matter expert (learner shall operate under the Appointed Operator's supervision) • Control Officer on duty at the Control Centre (feedback to be submitted to Assessor in writing)

OUTCOME	DESCRIPTION	RESPONSIBLE PERSON
7	Live Work	• Assessor/Facilitator • Subject matter expert – for Live work • Line manager / Supervisor
8	Control Officer	• Assessor • Shift Supervisor • SME • To be an Authorised Controller (a learner shall operate under the Authorised Controller's supervision)
	Low Voltage	• Assessor • Low Voltage Operator • Observer (optional) • Line manager / Supervisor

12.3 Verbal Assessment

After completion of the practical assessment a complimentary verbal assessment may be conducted if required for clarification of specific apparatus or operations.

13. Authorisation

13.1 Evaluate and Record Evidence and make Assessment Judgement

The following process shall be adhered to during the evaluation and recording of evidence to make an assessment judgement:

a) Candidate signs the Assessment Report

b) Assessor completes Assessment Report

c) Assessor checks completeness of Assessment Documentation Folder

The minimum documentation required for moderation and authorisation purposes are as follows:

1) Request for pre-assessment
2) Request for Authorisation Assessment
3) Completes the Pre-requisite Checklist.
4) Standard Agenda of Initial Meeting
5) Assessment Checklist(s) Field Staff as per Annexures
6) Assessment Checklist Control Centre Checklist
7) Appeals and Dispute process (Refer to Eskom Grievance Procedure)
8) Previous Authorisation where applicable
9) Proof of pre-assessment documents as per Annexures
10) Proof of valid ORHVS/LVOR
11) Proof of Medical fitness
12) Proof of valid First Aid where applicable
13) Practical Test – Operating Instruction forms/Permits/Risk assessments as per Annexures

14) Completed and marked Knowledge Questionnaire

15) Assessment report

16) Evaluation of Assessment process

13.2 Provide Feedback

The following process shall be adhered to in terms of feedback:

a) Assessor provides feedback to the candidate on assessment results and remedial actions, if any.

b) Assessor provides feedback to Line Manager/Senior Supervisor or in the case of a contractor the candidate's Employer or his delegate.

c) Assessor presents assessment documentation folder to the relevant Designated/Delegated person.

d) Assessor executes record keeping requirements.

e) Candidate to sign acceptance and return to assessor.

13.3 Review Assessment/Moderation

13.3.1 Authorisation Process Moderation

The moderation process shall be followed as per the moderation principles. The moderator shall carry out the following to ensure that the authorisation process was followed correctly:

a) Verify assessments in case of appeal.

b) Advise and support assessors.

c) Keep accurate verification records.

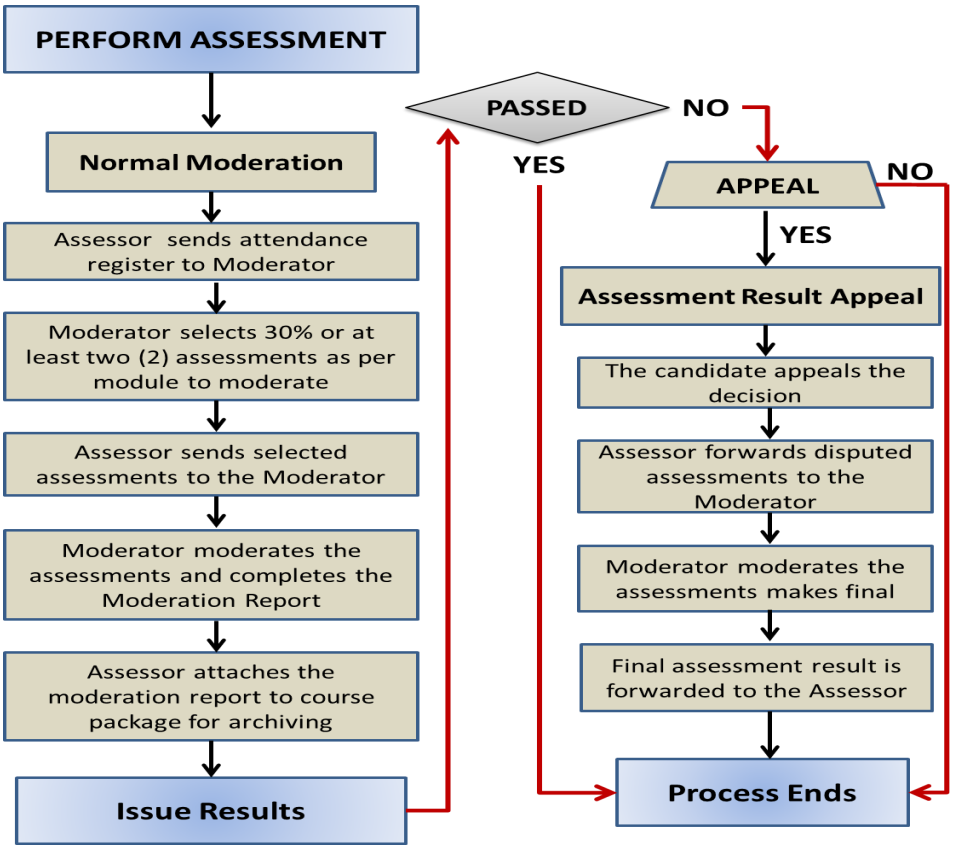
d) Liaise with external moderator when required.

e) Investigate alleged non-conformance.

Note: In the Distribution environment the Technical Support Manager will be responsible for Process moderation

13.3.2 Authorisation Moderation

The flow chart below details the process to be followed for legislative moderation and shall be carried out by the moderator:



13.4 Authorisation Form

When completing an authorisation form the following shall be adhered to:

a) Specific authorisations must specify the appropriate level of demonstrated competency that shall allow the person's training, assessment and authorisation to meet the specific outcomes.

b) The authorisation outcomes are grouped to optimise training, assessment and authorisation.

c) Any authorisation shall be defined clearly stating the restrictions applicable to the authorisation.

d) All necessary signatures are obtained.

e) All authorisations for Eskom and Contractors shall automatically lapse after the period stipulated on the authorisation form. The validity of the authorisation shall be as per regulations.

f) When an Authorised person is transferred to an area where the area is controlled by another GMR2.1, their authorisation shall be cancelled, and a new authorisation shall be required from the GMR.2.1 in control of that area.

g) When an authorised person resigns from Eskom/a company and is employed by another company, his authorisation shall expire immediately.

h) Contractor authorisation is company specific is not transferable.

i) Appointment must display the area of responsibility – meaning the specific Geographical Area.

j) The 16(2) appointees of contractors or company owner must counter sign authorisation form.

14. Extension of Authorisation

Authorisation shall not be extended.

15. Cross Boundary Authorisation

The Designated/delegated Persons may, at their discretion and with mutual agreement authorise a person to carry out specific activities that require an LVOR or ORHVS authorisation outside of the area of the Authorisation.

In cases where persons are required to be authorised for more than one area an authorisation shall be issued by the GMR2.1 of that specific area where the activities that require an LVOR or ORHVS authorisation shall be carried out.

16. Authorisation Practice

At all times a person shall be authorised to the full extent of the authorisation required in the relevant geographical area.

17. Authorisation Levels

17.1 Outcome 1: Non-Operating Authorisation

Access and ground level supervision for a person to perform non-dangerous activities, in either or both restricted and prohibited areas.

17.2 Outcome 2: Operating under Supervision

The candidate must be allowed sufficient time to become familiar with the plant and apparatus in his area and to gain practical exposure. A training path for operating type authorisations shall include a practical phase where operating will be conducted under the supervision of an Appointed Operator. Training, assessment and authorisation in this category will allow such a candidate to perform switching, linking, safety testing and earthing of any sort under supervision of an Appointed Operator as per the limitations stipulated.

17.3 Outcome 3: Responsible Person

Responsible person shall be authorised to be responsible for ensuring that the work on the apparatus covered by a work permit can be, carried out with safety and within the terms of the ORHVS.

17.4 Outcome 4: Specific Authorisation

Training, assessment and authorisation in this category will allow such Appointed Operator limited authorisation which could include but is not limited to:

a) Take a hand over of Apparatus, safety test, application and removal of working earths.

b) Opening and closing of breakers, isolators and switches lines/substations

c) Climbing of structures on live power lines to gain access for non- electrical activities for person's performing these activities (for NTCSA)

d) Climbing of structures on live power lines to gain access for non- electrical activities for person's supervising these activities (for NTCSA)

17.5 Outcome 5: Operating up to and including 33 kV

Training, assessment and authorisation in this category will allow such Appointed Operator to perform switching, linking, safety testing, earthing and issuing work permit on apparatus up to and including 33 kV.

This could include:

a) Establishment of local control.

17.6 Outcome 6: Operating (Transmission and Sub-Transmission 44 kV to 132kV)

Training, assessment and authorisation in this category will allow such Appointed Operator to perform switching, linking, safety testing, earthing and issuing work permit apparatus up to and including Transmission voltages.

This could include:

a) Establishment of local control.

17.7 Outcome 7: High Voltage Live Work Levels Of Authorisation

Training, assessment and authorisation in this category will allow such authorised person to perform live work on apparatus up to and including Transmission voltages. These authorisations will detail the live work method that the person is authorised for:

a) Assuming the duties of a person to perform live work in terms of the method restrictions specified,

b) Assuming the duties of a person in charge of live work in terms of restrictions specified.

Note: For Transmission High Voltage Level of Authorisations refer to 240-128673233 and 240-60725815

17.7.1 Basic Gloving / Task Manual Gloving (Extended Gloving)

Training, assessment and authorisation in this category will allow such authorised person to perform live work on apparatus up to and including 33kV. These authorisations will detail the live work task manual that the person is authorised for:

a) Assuming the duties of a person to perform live work on lines in terms of this method.

b) Assuming the duties of a person in charge of live work in terms of this specified.

17.7.2 Stick and Bare Hand/ Extended Stick and Bare Hand

Training, assessment and authorisation in this category will allow such authorised person to perform live work on apparatus from 44kV up to and including 132kV. These authorisations will detail the live work task manual that the person is authorised for:

a) Assuming the duties of a person to perform live work on lines in terms of this method.

b) Assuming the duties of a person in charge of live work in terms of this specified.

17.7.3 Substation Gloving

Training, assessment and authorisation in this level of authorisation will allow such authorised person to perform live work on apparatus from 11kV to 33kV. These authorisations will detail the live work task manuals that the person is authorised for:

a) Assuming the duties of a person to perform live work on substations in terms of this method.

b) Assuming the duties of a person in charge of live work on substations in terms of this method.

17.7.4 Substation Stick and Bare Hand

Training, assessment and authorisation in this level of authorisation will allow such authorised person to perform live work on apparatus from 44kV to 132kV. These authorisations will detail the live work task manuals that the person is authorised for:

a) Assuming the duties of a person to perform live work on substations in terms of this method.

b) Assuming the duties of a person in charge of live work on substations in terms of this method

17.8 Outcome 8: Controller

Training, assessment and authorisation in this category will allow such authorised person to perform duties at a control center, who is responsible for the general operation of the power system or a section thereof.

17.9 Low Voltage

There are four (4) levels of authorisation for LV:

a) LV Operator is a person suitably, selected, trained, assessed, and authorised to perform circuit identification, isolating, locking out, tagging and testing activities on either or both overhead and underground up to 1000 Volt AC or 1500 Volt DC.

b) Responsible person is a person who has been authorised to be responsible for ensuring that the work on the LV Infrastructure and Service Connections covered by a permit can be carried out safely and in accordance with these regulations.

c) LV operator in training authorisation where the candidate must be allowed sufficient time (reviewed yearly) to become familiar with the plant and apparatus in his area and to gain practical exposure. A training path for operating type authorisations shall include a practical phase where operating will be conducted under the supervision of a LV Operator. Training, assessment, and authorisation in this category will allow such a candidate to perform switching, linking, safety testing and earthing of any sort under supervision of an LV Operator as per the limitations stipulated.

d) LV specific authorisation which concerns the giving of permission in writing to perform specific duties and responsibilities in term of the LV Regulations. This will include but will not be limited to:

1) Meter Reader.

2) Connection and disconnection service provider.

3) Street Light Worker.

4) Control Plant Maintenance (CPM).

5) Power Plant Maintenance (PPM).

18. Re-authorisation (HV, MV and LV)

18.1 Renewal of authorisation on expiry

The Designated/Delegated person may, at his discretion, renew an authorisation for a period as per ORHVS/LVOR intervals without a theoretical/practical re-assessment (document assessment) under the following conditions:

a) The authorised person shall apply for renewal (all Annexures)

b) Authorisation shall be valid/current.

c) Valid/current Legislative certificates.

d) Proof of active participation in the continuous learning process.

e) Six monthly observations have been carried out.

f) The Assessor shall verify the application evidence and check for adherence to this standard, other relevant standards, procedures etc. before making a recommendation.

g) The Designated/Delegated person to consider the re authorisation of the candidate based on the Assessor's recommendation and/or request for a practical re assessment.

h) Re-authorisation after suspension

In the case of an authorisation being suspended it may be reinstated by the designated/delegated person once the following conditions have been complied to:

a) Valid/current Legislative Certificates.

b) Should an incident that relates to the Authorisation occur, the Authorisation(s) of the person(s) concerned may immediately be suspended by the designated/delegated person. The incident shall be investigated in accordance with the Procedure for the Effective Management of Safety, Health and Environmental related incidents.

c) Recommendations following an Incident investigation.

d) WITHDRAWN / WITHDRAWAL – The action of ceasing an Authorisation after recommendations from an investigation, notify in writing the Line Manager/ Supervisor / NMC and Database Custodian.

18.2 Authorisation withdrawal process

When an Authorisation is withdrawn, the following shall apply:

a) The Authorisation shall be withdrawn in writing by the Designated/Delegated Person who issued such an Authorisation. (Annex Z)

b) All relevant role players shall be informed in writing, that the Authorisation has been withdrawn i.e.. NMC, HR etc.

c) Recommendations following an Incident investigation shall be adhered/conformed to.

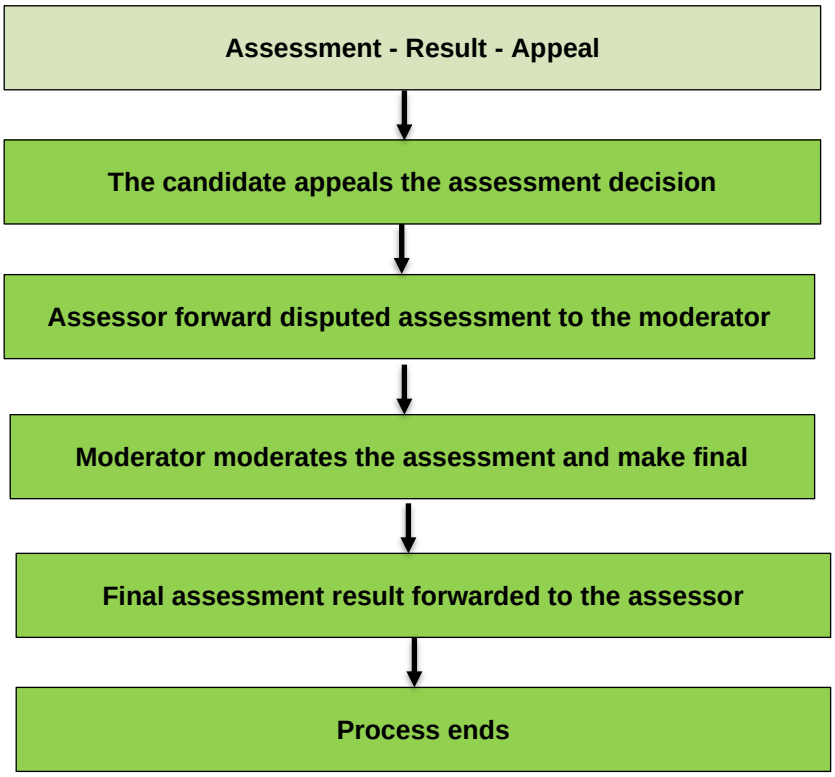
Note: All Re-Authorisations, after withdrawal, shall be done in accordance with this Standard as well as the recommendations from the Incident Investigation Panel.

18.3 Re-authorisation after expiry

In the case of the authorisation that has expired the assessment process will be followed for re-authorisation.

19. Authorisation Appeal Process

The flow chart below details the process to be followed during the appeal process.



20. Authorisation Database

Authorisation database for the area/ department concerned shall be managed, maintained, updated and published on the relevant website used in this areas/ department.

The Designated/ Delegated is accountable to appoint a person to manage, maintain and update the Authorisation database on an ongoing basis.

21. Authorisation

This document has been seen and accepted by:

Name and surname	Designation
Bongani Mandla	DNOC Chairperson
Tshwari Ramagofu	ORHVS and Operating Training Care Group (NTCSA) Chairperson
Devan Nardhamuni	Plant Operating Committee Chairperson
Lenah Mothata	National ORHVS Chairperson
Mike Voudouris	Snr Consultant Engineering
Sikelela Mkhabela	Specialised Maintenance and Support Chairperson
Lenah Mothata	NTCSA Operating SO Chairperson
Gav Hurford	Snr Manager National Control
Louis Du Plessis	Middle Manager National Operations

22. Revisions

Date	Rev.	Compiler	Remarks
Sept 2025	4	Refiloe Mahlangu	Document revised
May 2020	3	Refiloe Mahlangu	Document revised
Sept 2019	2	Refiloe Mahlangu	New document combining previous documents 240-70413865 and 240-70413713
Dec 2013	1	T Ntombela	New format and new document number

23. Development team

The following people were involved in the development of this document:

- Refiloe Mahlangu — Officer Technical Support Dx Gauteng OU
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- Henrietta Smith — Officer Technical Support Dx Free State OU
- Sipho Twala — Officer Technical Support Dx Gauteng OU
- Attie Calitz — Officer Technical Support Dx Gauteng OU
- Morne Van Heerden — Officer Technical Support Dx Free State OU
- Andre Van Heerden — Officer Education &Training
- Emma Rakgogo — Officer Technical Support Dx Gauteng OU
- Andre Van Zyl — Officer Technical Support Dx Mpumalanga OU

• Johan Pieterse	Technician Electrical Dx Limpopo OU
• Obakeng Seele	Officer Technical Support Dx Eastern Cape OU
• Patrick Monyaki	Officer Technical Support Dx North West OU
• Frans Maritz Officer	Live Work Coaching
• Mzi Stoffel	Snr Supervisor NMC EC
• Habayo Majadibodu	Officer Technical Support Dx Limpopo OU
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• Paul Connachan	Technical Training Officer Free State Grid
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• Velosin Govender	Snr Engineer Prof Electrical
• Thabo Masike	System Support Free State NMC
• Braam Korff	Asst Officer Education &Training
• Andre Botha	Officer Technical Support Dx Western Cape OU
• Joggie Engelbrecht	Officer Technical Support Dx Limpopo OU
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• Jonathan Raboshakga	Officer Technical Support Dx Mpumalanga OU

24. Acknowledgements

Not applicable.

Annex A - Request For Pre-Assessment/ Re- Assessment

(Informative)

Eskom	**REQUEST FOR PRE-ASSESSMENT / RE- ASSESSMENT** (From candidate to Line Manager/Supervisor)	**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

CANDIDATE TO BE ASSESSED:			
Unique or ID Number		Name	
Sector/Grid/Control		Contact Number	
Department		Company	
Candidate Signature		Designation	

	YES / NO
PORTFOLIO OF EVIDENCE COMPLETED AND UP TO DATE:	
Supporting documentation (to be attached)	
Signed off Portfolio of Evidence Quality Checklist	
Copy of valid ORHVS	
Copy of valid LVOR	
Copy of valid Medical Fitness Certificate	
REQUIRED AUTHORISATION OUTCOME:	
Specified Detail	
As the immediate Line Manager/Supervisor I hereby accept the above request.	
As the immediate Line Manager/Supervisor I hereby reject the above request.	

Name: _____ Unique No: _____

Designation: _____ Signature: _____

Date: _____ Telephone number: _____

Annex B - Application For Authorisation Assessment

(Informative)

Eskom	**APPLICATION FOR AUTHORISATION ASSESSMENT** (From Line Manager/Supervisor to Assessor)	**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

CANDIDATE TO BE ASSESSED:			
Unique or ID Number		Name	
Sector/Grid/Control		Contact Number	
Department		Company	
Candidate Signature		Designation	

	YES / NO
PORTFOLIO OF EVIDENCE COMPLETED AND UP TO DATE:	
Supporting documentation (to be attached)	
Signed off Portfolio of Evidence Quality Checklist	
Copy of valid ORHVS	
Copy of valid LVOR	
Copy of valid Medical Fitness Certificate	
REQUIRED AUTHORISATION OUTCOME:	
Specified Detail	
As the immediate Line Manager/Supervisor I hereby accept the above request.	
As the immediate Line Manager/Supervisor I hereby reject the above request.	

Name**:** _____ Unique No: _____

Designation: _____ Signature: _____

Date: _____ Telephone number: _____

Annex C – Assessor Pre-Requisite Checklist

(Informative)

Eskom	**ASSESSOR PRE-REQUISITE CHECKLIST**	**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

CANDIDATE TO BE ASSESSED			
Unique or ID Number		**Name**	
Sector/Grid		**Contact Number**	
Department		**Company**	
Authorisation outcome			

Supporting Evidence to be attached	YES	NO
Initial meeting		
Complete POE		
Annexure A – Pre-assessment documentation		
• Request for Pre-assessment application (With Supervisor)		
• Specific assessment template as per applicable outcome		
• Pre-plan / Shift hand over (Where needed)		
• Risk assessment (Excluding NMC)		
• Permit (Where needed)		
• Meter movement form (Where needed)		
• Operating form (Where needed)		
Annexure B – **A**uthorisation Assessment documentation		
• Request for authorisation Assessment (With Assessor and Supervisor)		
• Specific assessment template as per applicable outcome		
• Pre-plan / Shift hand over (Where needed)		
• Risk assessment (Excluding NMC)		
• Permit (Where needed)		
• Meter movement form (Where needed)		
• Operating form (Where needed)		
Completed and marked Knowledge questionnaire		
Proof of valid ORHVS **Expiry date:**		
Proof of valid LVOR (Where needed) **Expiry date:**		
Proof of valid medical fitness certificate **Expiry date:**		
Proof of previous authorisation (Where needed)		
Proof of 2 observations during last 12 months as per outcome		
Annexure S – Assessment Report		
Annexure R – Evaluation of the Assessment process (To be completed by the candidate)		

As the Assessor I hereby accept		**Reject the above request.**	

Name: _____ Unique No: _____

Designation: _____ Signature: _____

Date: _____ Telephone number: _____

Annex D – Agenda/Minutes for Initial Meeting

(Informative)

Eskom	**AGENDA** **Agenda/Minutes for Initial Meeting**	**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

Date: _____

Assessor: _____

Time: _____

Venue: _____

Purpose: To discuss the Assessment Process

Description	Responds
1. Welcome	
2. Safety and Emergency Evacuation Procedure	
3. Adoption of Agenda & Declaration of Interest	
4. Discussion of Assessment Process (time, date and venue)	
5. Roles and Responsibilities:	
• **Candidate**	
• **Assessor**	
• **Supervisor**	
• **Subject Matter Expert**	
7. Dispute and Appeals Procedure	
8. Discuss the assessment check sheet	
9. Special Needs	
10. Portfolio of Evidence	
11. Other Items	
12. Closure	

Name		Signature
Assessor:		
Candidate:		
Supervisor:		
SME:		

Annex E - Practical Assessment Checklist for Low Voltage Operating and Work

Eskom	**PRACTICAL ASSESSMENT CHECKLIST FOR LOW VOLTAGE OPERATING AND WORK**	**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

CANDIDATE DETAILS:			
Name		**Unique/ID Number**	
Workstation		**Date**	
Location		**Activity**	

Competent:	
Not yet competent:	

Note: Each No answer must have remark on last page

ACTIVITY	POINTS	ACTUAL	COMMENTS
PRELIMINARIES			
1. Is a pre-task plan completed for the job to be done.	5		
2. In possession of a work order	C/NYC		
3. Is the correct material been identified and selected.	10		
4. Before operating check condition / clean operating stick.	5		
5. Are the correct Low Voltage tools available.	5		
6. Confirm correct tester as per voltage.	5		
7. Is there a Fire Extinguisher and a First Aid Box on site?	5		
8. Confirm class 0 / 1000 V gloves been tested from lab as per cycle.	C/NYC		
9. Are the correct measuring instruments selected and is it calibrated?	C/NYC		
10. Is there a FAS available on site and inspected?	5		
11. FAS rescue kid available on site and inspected?	5		
12. Has the ladder / MEWP / Climbing shoes inspected before use?	5		
13. Correct Protective Clothing (Hard hat, Operating Jacket, Long Pants, Safety Shoes working gloves and face shield)	10		
Subtotal	**60**		

ACTIVITY	POINTS	ACTUAL	COMMENTS
PRE - EXECUTION OF WORK			
1. Has the pole been inspected before climbing (when necessary)?	C/NYC		
2. Are panels to be worked on permanently earthed (where applicable)?	C/NYC		
3. Is the task manual read and or discussed with the team members on site? 4. Task manual number ……	10		
5. Check condition of equipment that will be affected by the operating.	5		
6. Check correct labelling of apparatus / Address.	5		
7. Confirm phasing / voltage before work is started	5		
Sub total	**25**		
RISK ASSESSMENT			
1. Has the scope of work been discussed with all workers.	C/NYC		
2. Has the relevant task manual where available been discussed and incorporated in the risk assessment	10		
3. Sufficient steps taken to minimize the risks.	C/NYC		
4. All workers informed of the risks.	5		
5. Worker's register completed.	C/NYC		
Sub total	**15**		
BARRICADING			
• Equipment to be worked on effectively barricaded.	5		
• Barricading must control movement of people.	5		
Sub total	**10**		
SUPERVISION			
• Correct level of Supervision identified. Level of Supervision ……	5		
• Correct level of Supervision maintained	5		
• Is there constant communication between team members	5		
Sub total	**15**		
PREPARE PLANT TO WORK ON			
1. Is the correct PPE used when performing operating / switching?	5		
2. Is switching procedure adhered to as per LVOR? (Identification, switching/linking, safety test, lockout and tagging, earthing on bear overhead conductors)	C/NYC		
3. Has the correct measuring / testing equipment been used?	5		

ACTIVITY	POINTS	ACTUAL	COMMENTS
4. Has the correct tools / equipment been used?	5		
Sub total	**10**		
EXECUTION OF WORK			
1. Have all tasks been performed as per task manual/standard/ manufacturer documentation.	10		
Sub total	**10**		
PERMITS / WORKERS REGISTER			
1. Permits and Workers Register completed correctly.	5		
2. Did the authorised person check that the responsible person is authorised to accept a permit?	5		
3. Confirm special endorsements and make sure they are understood.	5		
4. Return permit & sign off accordingly after work has been done.	5		
Sub total			
EQUIPMENT RETURNED TO SERVICE			
• Check all staff are removed from the site and sign clearance section of permit/Workers declaration.	10		
• Clear all permits.	5		
• Has the plant been prepared to be returned to service? • (All work completed, earths removed (if applicable, locks and tags removed, isolators replaced but not closed)	10		
• Has the plant been returned to service as per LVOR. • (Close breaker / isolators and test for voltage)	10		
• Have the relevant documentation been completed (MMF / In/out commissioning sheets etc.)	5		
Sub total			
TOTAL (pass mark of 80 %)			

DOCUMENTS FOR COLLECTION (TICK OFF -- ✓)			
Pre Plan		Meter movement form	
Risk assessment		In / out commission sheet	
Works order		Verify inspection sheet / certificates	

General Comments:

Remarks		
	Name	**Signature**
Assessor:		
Candidate:		
Supervisor:		
SME:		
Date:		

Annex F – Outcome 1 Practical Assessment

Eskom	**OUTCOME 1** **PRACTICAL ASSESSMENT CHECKLIST FOR AUTHORISED PERSONS FOR ACCESS AND SUPERVISION TO PROHIBITED AND RESTRICTED AREAS**	**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

CANDIDATE DETAILS:			
Name		**Unique/ID Number**	
Workstation		**Date**	
Location		**Activity**	

Competent:	
Not yet competent:	

ACTIVITY	POINTS	ACTUAL	COMMENTS
PRELIMINARIES:			
1. Pre Plan done (If applicable)	C/NYC		
2. Is there a Fire Extinguisher on site?	1		
3. Is there a first Aid Box on site?	1		
4. Correct Protective Clothing (Hard hat, Operating Jacket, Long Pants, Safety Shoes)	C/NYC		
5. Contact control before entering substation stating your activity	2		
6. Check if earthing on structure is in position (possible theft of copper)	C/NYC		
7. Confirm there is no Abnormalities	2		
Sub Total	7		
RISK ASSESSMENT:			
1. *Risk assessment carried out prior to starting work	C/NYC		
2. Sufficient steps are taken to minimise the risks	C/NYC		
3. All workers are informed of the risks, and the risk analysis form is correctly applied	2		
4. Workers register completed (Note: Workers register, and Risk assessment form combined)	2		
Sub Total	**4**		
Work			
1. Check HV Yard fence before entering the HV Yard	2		
2. Check DC supply	C/NYC		

ACTIVITY	POINTS	ACTUAL	COMMENTS
3. Notify control of presence in the substation	2		
4. Checks Logbook for abnormalities	3		
5. Does not interfere with apparatus/equipment not specified in his authorisation	C/NYC		
6. Closed gate/door after entry into HV Yard (not locked)	2		
7. Looking out for major defects (e.g., Oil leaks, dangerous situations)	C/NYC		
8. Noting and reporting such defects	2		
9. Locks Key box & control of keys	3		
10. Safety clearance			
• Knowledge of minimum Safety clearance as in the ORHVS	C/NYC		
• Maintaining minimum safety clearances at all times whilst at ground level	C/NYC		
Sub Total	**14**		
SUPERVISION:			
1. Control over Staff	2		
2. Giving clear instructions	2		
3. Continuously watching over staff	2		
4. Informing staff of dangers	2		
5. Taking corrective action	2		
6. Application of applicable ORHVS and Standards	2		
Sub Total	**12**		
EXIT FROM THE PROHIBITED AREA:			
1. Have all staff been withdrawn	2		
2. Have all tools and equipment been withdrawn	2		
3. Are all access gates/doors closed and locked	2		
4. Worker's register signed off	2		
5. Returns keys and locks key box	2		
6. Completed substation logbook-Reason for visit	2		
7. Inform Control of completion of activities	2		
Sub Total	**14**		
TOTAL (Pass Mark 80%)	**37**		

General Comments:

POST-MORTEM: (No answer will reflect as not yet competed)		
COMPLETES ALL PAPERWORK		
ACTIVITY	**YES**	**NO**
1. Pre plan (Signed off)		
2. Risk assessment (Signed off)		
3. Was there constant communication between operator and workmen?		
4. Is the site left clean?		

PRACTICAL	**POINTS**	**ACTUAL**	**PERCENTAGE**	**C/NYC**
PRELIMINARIES	7			
RISK ASSESSMENT	4			
Work	14			
SUPERVISION	12			
EXIT FROM THE PROHIBITED AREA:	14			
POSTMORTEM				
TOTAL	37			

TOTAL OF OPERATING (Pass Mark 80 %)	Competent		No Yet Competent	

Name		**Signature**
Assessor:		
Candidate:		
Supervisor:		
SME:		
Date:		

Annex G - Outcome 3 Practical Assessment

Eskom	**OUTCOME 3** **PRACTICAL ASSESSMENT CHECKLIST FOR RESPONSIBLE PERSONS TO ACCEPT WORK PERMIT AND SUPERVISION**	**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

CANDIDATE DETAILS:			
Name		**Unique/ID Number**	
Workstation		**Date**	
Location		**Activity**	

Competent:	
Not yet competent:	

ACTIVITY	POINTS	ACTUAL	COMMENTS
PRELIMINARIES:			
1. Pre Plan done (If applicable)	C/NYC		
2. Tailgate Meeting	1		
3. Is there a Fire Extinguisher on site?	1		
4. Is there a first Aid Box on site?	1		
5. Correct Protective Clothing (Hard hat, Operating Jacket, Long Pants, Safety Shoes)	C/NYC		
6. Contact control before entering substation stating your activity	2		
7. Check if earthing on structure is in position (possible theft of copper)	C/NYC		
8. Confirm there is no Abnormalities	2		
Sub Total	**7**		
RISK ASSESSMENT:			
1. *Risk assessment carried out prior to starting work	C/NYC		
2. Sufficient steps are taken to minimise the risks	C/NYC		
3. All workers are informed of the risks, and the risk analysis form is correctly applied	2		
4. Workers register completed (Note: Workers register, and Risk assessment form combined)	2		
Sub Total	**4**		

ACTIVITY	POINTS	ACTUAL	COMMENTS
EARTHING			
1. Ensure that the line/apparatus covered in the permit has been safety tested	C/NYC		
2. Ensure that the applied Earths have been correctly positioned to the line/apparatus covered in the permit according to applicable standards	C/NYC		
BARRICADING:			
1. Equipment to be worked on effectively barricaded	2		
2. Barricading excludes live equipment or structures	C/NYC		
3. Barricading not attached directly onto live structures (Effective use of stand-off brackets)	2		
4. Prevention of access to the remaining live yard or live equipment should be effective	2		
5. Danger signs/Warning labels are attached on all sides of barricading facing inwards toward work area	2		
6. Barricading to always restrict movement of staff	2		
7. Workers erecting barricading to be under direct supervision of AP	2		
Sub Total	**12**		
PERMITS / WORKERS REGISTER			
1. Did the authorised person check that the responsible person is authorised to accept a permit?	2		
2. Ensure correct preparation of worksite as per ORHVS	2		
3. Work permit form completed according to ORHVS and work requirements	2		
4. Has position of earths been shown and agreed that there are no additional earths needed?	4		
5. Special endorsements discussed with all and understood?	4		
6. Was the original handed to the responsible person?	2		
7. Workers register signed (Note: On Risk assessment form)	2		
8. Has the permit number been entered on the workers register?	1		
9. On completion that workers are withdrawn, and permit been signed operator and responsible person	C/NYC		
Sub Total	**19**		
SUPERVISION			
1. Control over Staff	3		
2. Giving clear instructions	3		
3. Continuously watching over staff	3		
4. Informing staff of dangers	3		
5. Taking corrective action	3		

ACTIVITY	POINTS	ACTUAL	COMMENTS
6. Application of applicable ORHVS and Standards	3		
7. Knowledge of minimum safety clearance as in the ORHVS	C/NYC		
8. Maintaining minimum safety clearances at all times whilst at ground level	C/NYC		
Sub Total	**18**		
TOTAL (Pass mark 80 %)			

General Comments:

POST-MORTEM: (No answer will reflect as not yet competed)		
COMPLETES ALL PAPERWORK		
ACTIVITY	**YES**	**NO**
1. Pre plan (Signed off)		
2. Risk assessment (Signed off)		
3. Permit (Where applicable) (Signed off)		
4. Is the site left clean?		

PRACTICAL	POINTS	ACTUAL	PERCENTAGE	C/NYC
PRELIMINARIES	7			
RISK ASSESSMENT	4			
EARTHING				
BARRICADING	12			
PERMITS / WORKERS REGISTER	19			
SUPERVISION	18			
POST-MORTEM				

Name		Signature
Assessor:		
Candidate:		
Supervisor:		
SME:		
Date:		

Annex H - Outcome 4A Practical Assessment

Eskom	**OUTCOME 4A** **PRACTICAL ASSESSMENT CHECKLIST FOR TAKE A HAND OVER OF APPARATUS, SAFETY TEST, APPLICATION AND REMOVAL OF WORKING EARTHS**	**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

CANDIDATE DETAILS:			
Name		**Unique/ID Number**	
Workstation		**Date**	
Location		**Activity**	

Competent:	
Not yet competent:	

(*) Denotes Instant Failure and assessment will be terminated (C – Competent – NYC not yet competent)

ACTIVITY	POINTS	ACTUAL	COMMENTS
PRELIMINARIES			
1. Understanding what is to be done	3		
2. Planning the job	3		
3. Is there a Fire Extinguisher on site?	1		
4. Is there a first Aid Box on site?	1		
5. Selecting appropriate tools and equipment	2		
6. Check if earthing on structure is in position. (Possible theft of copper)	C/NYC		
7. Correct Protective Clothing (Hard hat, Operating Jacket, Long Pants, Safety Shoes)	C/NYC		
Sub total	**10**		
RISK ASSESSMENT:			
1. *Risk assessment carried out prior to starting work	C / NYC		
2. Sufficient steps are taken to minimize the risks	C / NYC		
3. All workers are informed of the risks, and the risk assessment form is correctly applied	C / NYC		
4. *Worker's register completed	C / NYC		
5. Has the candidate explained to the workers the dangers/risks and where they may and may not climb.	2		
6. Was the scope of work and all dangers explained to all staff before work is commenced and before the workers register has been completed by the candidate	3		

ACTIVITY	POINTS	ACTUAL	COMMENTS
7. Discuss with workers if selective earthing will be done and on which phases	2		
Sub Total	**7**		
TAKING HANDOUT FROM CONTROL			
1. Contact Control and Identify yourself. Also discussed adverse weather conditions	2		
2. Handout written out on instruction form correctly, date, time and signature	3		
3. Handout taken from control with permission to apply and remove working earths	2		
Sub Total	**7**		
SAFETY TESTING & EARTHING			
1. Select correct type and number of working earths to be applied to ensure an Equipotential zone	2		
2. Inspect condition of working earths visually (quality, clamps & conductors)	2		
3. Lay out of working earths at place where to be applied	3		
4. Lay out of equipment and tools to be utilised in performing specified scope of work	3		
5. Correct fall arrest plan discussed with risk assessment.	2		
6. Check and test high voltage detectors (test heads)	2		
7. Before using operating stick confirm correct voltage rating, check condition of stick, if tested (label) and clean operating stick with silicone cloth	2		
8. Check correct labelling of line structure where work is to be executed (identify correct panel)	2		
9. If additional bonding (Jumpers, running earths and multiple conductors per phase to be bridged out) is needed, is it planned and available? (Mobile equipment, droppers, jumpers)	2		
10. Lifting equipment to be attached to the structure in a safe manner and ensuring a safe clearance is maintained between the lifting equipment and the conductor	2		
11. Workers helping with the application of the earths (not applying) must be advised of what is to be done and where. (Rope handling, rescue)	2		
12. Working earth's first apply/connected to a main member of the tower. (Check integrity of the tower member)	2		
13. Correct Link stick (Solid operating stick to be used for voltages above 132kV when testing) used for safety testing. (Telescopic Link stick may be used for earthing).	2		
14. Fit correct voltage tester on Link stick	3		
15. *Test for voltage at positions where earths are to be applied on all three phases or if selectively the phase to be earthed.	C / NYC		

ACTIVITY	POINTS	ACTUAL	COMMENTS
16. Using approved insulated stick ensuring working earths is firmly applied to the conductor	2		
17. Workers not to hold onto earths while being applied	2		
18. Ensure that all working earths are bonded to create an Equipotential zone	3		
19. The application of earths to be done in a safe and secured manner	3		
20. Earth guard conductor, if applicable	2		
Sub Total	**43**		
EQUIPMENT RETURNED TO SERVICE			
1. *Ensure that the scope of work is completed	C / NYC		
2. Check that all maintenance or repair work has been conducted, and equipment is ready for service (all connections checked)	3		
3. Check that all repair tools and equipment have been removed	3		
4. All bonding, jumpers and test leads to be removed	3		
5. Check that all workers have withdrawn as per the workers register	2		
6. Earths removed from guard conductor, if applicable	2		
7. All working earths removed in the correct manner i.e. first from the conductor with operating stick and then from the steel member	3		
8. Lifting equipment to be lowered in a safe manner	2		
9. Sign the necessary documents (Complete work report logbook)	2		
10. Hand back to control – time of working earths applied and removed, all equipment and workman removed, the plant to be handed back as per the ORHVS	C / NYC		
Sub Total	**20**		
GENERAL SAFETY			
1. Completes all applicable paperwork	2		
2. Were minimum safe work clearances taken into consideration	3		
3. Was there constant communication between the candidate and workers?	2		
4. Did the workers understand the risk assessment done, complete the workers register, access control and emergency procedures	2		
5. No unsafe condition or situation took place during the execution of work	2		
6. FAS used when working at height. (Inspections). (Rescue equipment)	2		
7. Did the candidate inform the workers of the emergency numbers applicable	1		

ACTIVITY	POINTS	ACTUAL	COMMENTS
8. All standards and procedures adhered to – No regulations broken (ORHVS)	4		
9. Is the site left clean?	2		
Sub Total	**20**		

General Comments

OVERALL RESULTS

PRACTICAL	POINTS	ACTUAL	PERCENTAGE	C/NYC
PRELIMINARIES	10			
RISK ASSESSMENT	7			
TAKING HANDOUT FROM CONTROL	7			
SAFETY TESTING & EARTHING	43			
EQUIPMENT RETURNED TO SERVICE	20			
GENERAL SAFETY	20			
TOTAL	**107**			

Percentage		%	Recommended		Not recommended	

ASSESSOR

NAME	SIGNATURE	DATE

SUPERVISOR / MANAGER

NAME	SIGNATURE	DATE

G M R 2.1

NAME	SIGNATURE	DATE

SUBJECT MATTER EXPERT

NAME	SIGNATURE	DATE

COACH

NAME	SIGNATURE	DATE

CANDIDATE

NAME	SIGNATURE	DATE

Note:

1) Candidate is to obtain 80% or more for each section and those sections which are unsuccessful, bridging training will be required. If the candidate is unsuccessful for three sections or more then it is recommended that the authorisation not be issued, or existing authorisation is terminated, and a full training course and re-evaluation will be required.
2) If the candidate is found Not Yet Competent (NYC) for any section of the assessment, then the candidate is unsuccessful.
3) If any item within the assessment is not applicable, then the corresponding activity points can be indicated as N/A on the form, and the subtotal for that section as well as the main total points tally would need to be amended accordingly.

Annex I – Outcome 4B Practical Assessment Checklist

Eskom	**OUTCOME 4B** **PRACTICAL ASSESSMENT CHECKLIST FOR OPENING AND CLOSING OF BREAKERS, ISOLATORS AND SWITCHES LINES/SUBSTATIONS**	**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

CANDIDATE DETAILS:			
Name		**Unique/ID Number**	
Workstation		**Date**	
Location		**Activity**	

Competent:	
Not yet competent:	

(*) Denotes Instant Failure and assessment will be terminated (C – Competent – NYC not yet competent)

ACTIVITY	POINTS	ACTUAL	COMMENTS
PRELIMINARIES			
1. Understanding what is to be done	3		
2. Planning the job	3		
3. Is there a Fire Extinguisher on site?	1		
4. Is there a first Aid Box on site?	1		
5. Selecting appropriate tools and equipment	2		
6. Check if earthing on structure is in position. (Possible theft of copper)	C/NYC		
7. *Correct Protective Clothing (Hard hat, Operating Jacket, Long Pants, Safety Shoes)	C/NYC		
Sub total			
RISK ASSESSMENT			
1. *Risk assessment carried out prior to starting work	C / NYC		
2. Sufficient steps are taken to minimize the risks	C / NYC		
3. All workers are informed of the risks, and the risk assessment form is correctly applied	C / NYC		
4. *Worker's register completed	C / NYC		
5. Check key cabinet (If applicable)	1		
6. Change over substation auxiliaries supply (if applicable)	2		
7. Select correct number of prohibitory signs and posted in front of correct panel	1		

ACTIVITY	POINTS	ACTUAL	COMMENTS
8. On entering the Relay Room: Check Relays and log flagged relays for all equipment	3		
9. Check Battery voltage. (Why?)	2		
10. Check Logbook and abnormal board (If Applicable). (Why?)	3		
11. Check loading. (Why?)	2		
12. Check correct labelling of panels	1		
13. In HV Yard - Check correct labelling of apparatus. -	2		
14. Check condition of all apparatus on which operating is to be done. (Bkrs, Isolators, Auxiliaries) and remaining apparatus	3		
15. Status of Apparatus if correspond with operating diagram (Isolators, Breakers)	3		
16. Contacts Control and Discusses the Following: Identify yourself and Substation, Scope of Work, Potential hazards & risks, State of apparatus, required operating, operating sequence, adverse weather conditions.	6		
17. Discuss with control if operating diagrams corresponds	1		
18. Agree on intended operating	1		
19. Correctly write out operating instructions **NOTE: No alterations or changes. Each instruction starts on a new line. Operating instructions in sequential format. Only Annex 14 abbreviations. All blank lines cancelled)**	3		
Sub Total	**44**		
OPERATING			
1. Take Operating in correct sequence as written down on the operating instruction form	3		
2. *Carry out operating in the correct sequence	C / NYC		
3. Hang Prohibitory sign on control panel and points of isolation	1		
4. Operating instruction form taken with to place of intended operating	1		
5. Select required keys from key box and lock key box if applicable	2		
6. Lock / close relay room on leaving and restrict access to Prohibitory area gate	1		
7. No other persons within yard while operating	1		
8. *Check breaker/s visually open all 3 phases before operating Isolators	C / NYC		
9. Check Isolators visually if all three phases are open / closed – then make inoperative and lock out (L.O.R.)	3		
10. Hang Prohibitory signs on operating handles & lock in position (All points of supply)	2		

ACTIVITY	POINTS	ACTUAL	COMMENTS
11. Operator confirms with operating instructions to be at correct apparatus and ensure the intended action correspond with instructions (where? what? why?)	10		
12. Instructions ticked off step-by-step as carried out	1		
13. Report back operating with times and logs controls' time	4		
14. Place keys back in key box and lock key box if applicable	1		
Sub Total	**30**		
PERMITS / WORKERS REGISTER			
1. Did the candidate check that the responsible person is authorised (with a valid authorisation) to accept a permit for the extent of their work?	2		
2. Has the isolated apparatus been shown to the responsible person	2		
3. Has the candidate explained to the workers the dangers/risks and that they may not leave ground level	2		
4. Site specific hazards and risks noted on the "Special Endorsements" or "Special Endorsements" refers to risk assessment done to inform Responsible Person of site specific Hazards and Risks	3		
5. Did the candidate and the Responsible Person sign the permit section of the work permit form	2		
6. Was the original handed to the Responsible Person	1		
7. Were all dangers/special endorsements explained to the Responsible Person before permit is issued	3		
8. Has the permit number been entered on the workers register	1		
Sub Total	**16**		
EQUIPMENT RETURNED TO SERVICE			
9. * Risk Assessment to be completed for operating	C / NYC		
10. Check that all maintenance or repair work has been conducted and equipment is ready for service (all connections checked, and permanent barriers replaced)	2		
11. Apparatus in original position. Isolators and breakers back in original open position.	10		
12. Check that all relays on relay panels are reset	2		
13. Check all workers and equipment removed from work area	2		
14. Check all worker registers are cleared and permits signed off	2		
15. Apparatus been handed back is still open and isolated	2		
16. All operating instructions correctly written out	9		

ACTIVITY	POINTS	ACTUAL	COMMENTS
17. *Take Operating in correct sequence as written down on the operating instruction form to close isolators (check breaker open and all L.O.R switches in correct position (remote).	C / NYC		
18. Visually check isolators properly closed on all three phases	4		
19. Close breakers, check indication/taking load	1		
20. Check if breakers are closed on all 3 phases	1		
21. All Operating instructions ticked off step-by-step	2		
22. If applicable was Tap changers selected correctly and auxiliary supply changed as per procedures	2		
23. Operating instructions reported to Control, and time recorded	2		
24. Check substation is back to normal (Operating diagram updated, alarms cleared, informed customers)	4		
25. Keys are returned to key box and correct place (if applicable)	1		
26. Check substation battery chargers and voltage	2		
27. Check tap changer selection (if required)	1		
28. Check all auxiliary supplies (if required)	4		
29. Update substation logbook (update feeder counter cards/Bkr logbook)	2		
30. Hand back to control – all equipment and workman removed, the plant to be handed back as per the ORHVS	C / NYC		
Sub Total	**60**		
GENERAL SAFETY			
1. Completes all applicable paperwork	4		
2. Were minimum clearances taken into consideration	3		
3. Was there constant communication between the candidate and workers?	2		
4. Did the workers understand the risk assessment done, complete the workers register, access control and emergency procedures	2		
5. Did the candidate inform the workers of the emergency numbers applicable	1		
6. Is the site left clean?	2		
Sub Total	**14**		
General Comments			

OVERALL RESULTS

PRACTICAL	POINTS	ACTUAL	PERCENTAGE	C/NYC
PRELIMINARIES	44			
OPERATING	30			
HANDOVER	5			
PERMITS / WORKERS REGISTER	16			
EQUIPMENT RETURNED TO SERVICE	55			
GENERAL SAFETY	14			
TOTAL	164			

Percentage		%	Recommended		Not recommended	

ASSESSOR		
NAME	SIGNATURE	DATE

SUPERVISOR / MANAGER		
NAME	SIGNATURE	DATE

G M R 2.1		
NAME	SIGNATURE	DATE

SUBJECT MATTER EXPERT		
NAME	SIGNATURE	DATE

INSTRUCTOR / COACH		
NAME	SIGNATURE	DATE

TRAINEE / LEARNER / OPERATOR		
NAME	SIGNATURE	DATE

Notes:

1) Candidate is to obtain 80% or more for each section and those sections which are unsuccessful, bridging training will be required. If the candidate is unsuccessful for three sections or more then it is recommended that the authorisation not be issued, or existing authorisation is terminated, and a full training course and re-evaluation will be required.

2) If the candidate is found Not Yet Competent (NYC) for any section of the assessment, then the candidate is unsuccessful.

3) If any item within the assessment is not applicable, then the corresponding activity points can be indicated as N/A on the form, and the subtotal for that section as well as the main total points tally would need to be amended accordingly.

Annex J – Outcome 4C Practical Assessment Checklist for Climbing of Structures on Live Power Lines

Eskom	**OUTCOME 4C PRACTICAL ASSESSMENT CHECKLIST FOR CLIMBING OF STRUCTURES ON LIVE POWER LINES TO GAIN ACCESS FOR NON-ELECTRICAL ACTIVITIES FOR PERSONS PERFORMING THESE ACTIVITIES**	**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

CANDIDATE DETAILS:			
Name		**Unique/ID Number**	
Workstation		**Date**	
Location		**Activity**	

Competent:	
Not yet competent:	

(*) Denotes Instant Failure and assessment will be terminated (C – Competent – NYC not yet competent)

ACTIVITY	POINTS	ACTUAL	COMMENTS
PRELIMINARIES			
1. Understanding what is to be done	3		
2. Planning the job	3		
3. Is there a Fire Extinguisher on site?	1		
4. Is there a first Aid Box on site?	1		
5. Selecting appropriate tools and equipment	2		
6. Check if earthing on structure is in position. (Possible theft of copper)	C/NYC		
7. *Correct Protective Clothing	C/NYC		
Sub total	**10**		
RISK ASSESSMENT:			
1. *Risk assessment carried out prior to starting work	C / NYC		
2. Sufficient steps are taken to minimize the risks	C / NYC		
3. All workers are informed of the risks, and the risk assessment form is correctly applied	C / NYC		
4. *Worker's register completed	C / NYC		
5. Has the candidate explained to the workers the dangers/risks and where they may and may not climb?	2		
6. Was the scope of work and all dangers explained to all staff before work is commenced and before the workers register has been completed by the candidate?	3		

ACTIVITY	POINTS	ACTUAL	COMMENTS
7. Correct fall arrest plan discussed with risk assessment?	2		
8. Check correct labelling of line structure where work is to be executed (identify correct panel)	2		
Sub Total	**19**		
ACTIVITY EXECUTION			
1. Ensure minimum Approach Distances as per standard 240-132479779 between live apparatus and workmen are always maintained	2		
2. Ensure that hand lines are visually inspected and electrically tested daily before work	2		
3. Ensure correct use of non-conductive hand lines – erected between the two phases and tied down to prevent encroachment with clearances	2		
4. Ensure that when using guard wire/earth peak to erect hand lines, guard wire must be earth correctly	2		
5. Ensure climbing is done safely and that there are metal parts between the worker and the live conductor	2		
6. Ensure that when climbing through the k point there is minimum time spent without metal parts between the candidate and the live conductor	2		
7. Ensure that short slings are used when positioned/working on cross arms	2		
8. Ensure that when tools/equipment are lifted or lowered ensuring the minimum safe approach distances are adhered to	2		
9. Ensure the hand line is properly secured at all times	2		
Sub Total	**18**		
EQUIPMENT RETURNED TO SERVICE			
1. * Ensure that the scope of work is completed	C / NYC		
2. Check that all repair tools and equipment have been removed	3		
3. Personnel bonds to be removed from the guard conductor (if applicable)	3		
4. Hand lines (if applicable) to be lowered in a safe manner	2		
5. Sign the necessary documents (Complete workers register, complete sign off on the Annexure A Declaration Form)	2		
Sub Total	**10**		
GENERAL SAFETY			
1. Completes all applicable paperwork	2		
2. Were minimum Approach Distances as per standard 240-132479779 adhered to?	3		
3. Was there constant communication between the candidate and the workers?	2		

ACTIVITY	POINTS	ACTUAL	COMMENTS
4. Did the candidate understand the risk assessment done, complete the workers register, access control and emergency procedures?	2		
5. Was the Declaration form for non-electrical activities completed by the candidate upon receiving handout from control prior to commencement of work activities?	2		
6. No unsafe condition or situation took place during the execution of work	2		
7. FAS used when working at height. (Inspections). (Rescue equipment)?	2		
8. Ensure rescue kit available	2		
9. Is the candidate aware of the emergency numbers applicable?	1		
10. All standards and procedures adhered to – No regulations broken (ORHVS)	4		
11. Is the site left clean?	2		
12. First aid kit and fire extinguisher available	2		
13. Hand lines should be kept in plastic containers with lids to prevent moisture or contaminants	2		
Sub Total	**28**		
TOTAL MARKS			

General Comments

OVERALL RESULTS

PRACTICAL	POINTS	ACTUAL	PERCENTAGE	C/NYC
A. PRELIMINARIES	19			
B. ACTIVITY EXECUTION	18			
C. EQUIPMENT RETURNED TO SERVICE	10			
D. GENERAL SAFETY	28			
TOTAL	75			

Percentage		%	Recommended		Not recommended	

ASSESSOR		
NAME	**SIGNATURE**	**DATE**

SUPERVISOR / MANAGER		
NAME	**SIGNATURE**	**DATE**

G M R 2.1		
NAME	**SIGNATURE**	**DATE**

SUBJECT MATTER EXPERT		
NAME	**SIGNATURE**	**DATE**

COACH		
NAME	**SIGNATURE**	**DATE**

CANDIDATE		
NAME	**SIGNATURE**	**DATE**

Notes:

1) Candidate is to obtain 80% or more for each section and those sections which are unsuccessful, bridging training will be required. If the candidate is unsuccessful for three sections or more then it is recommended that the authorisation not be issued, or existing authorisation is terminated, and a full training course and re-evaluation will be required.
2) If the candidate is found Not Yet Competent (NYC) for any section of the assessment, then the candidate is unsuccessful.
3) If any item within the assessment is not applicable, then the corresponding activity points can be indicated as N/A on the form, and the subtotal for that section as well as the main total points tally would need to be amended accordingly.

Annex K – Outcome 4D Practical Assessment for A Person's Supervising the Climbing of Structures on Live Power Lines to Gain Access for Non-Electrical Activities

Eskom	**OUTCOME 4D PRACTICAL ASSESSMENT FOR A PERSON'S SUPERVISING THE CLIMBING OF STRUCTURES ON LIVE POWER LINES TO GAIN ACCESS FOR NON-ELECTRICAL ACTIVITIES**	**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

CANDIDATE DETAILS:			
Name		**Unique/ID Number**	
Workstation		**Date**	
Location		**Activity**	

Competent:	
Not yet competent:	

(*) Denotes Instant Failure and assessment will be terminated (C – Competent – NYC not yet competent)

ACTIVITY	POINTS	ACTUAL	COMMENTS
PRELIMINARIES			
1. Understanding what is to be done	3		
2. Planning the job	3		
3. Is there a Fire Extinguisher on site?	1		
4. Is there a first Aid Box on site?	1		
5. Selecting appropriate tools and equipment	2		
6. Check if earthing on structure is in position. (Possible theft of copper)	C / NYC		
7. Correct Protective Clothing	C / NYC		
Sub total			
RISK ASSESSMENT:			
1. Risk assessment carried out prior to starting work	C / NYC		
2. Sufficient steps are taken to minimise the risks	C / NYC		
3. All workers are informed of the risks and the risk assessment form is correctly applied	C / NYC		
4. Worker's register completed	C / NYC		
5. Has the candidate explained to the workers the dangers/risks and where they may and may not climb?	2		

ACTIVITY	POINTS	ACTUAL	COMMENTS
6. Was the scope of work and all dangers explained to all staff before work is commenced and before the workers register has been completed by candidate?	3		
7. Correct fall arrest plan discussed with risk assessment?	2		
8. Check correct labelling of line structure where work is to be executed (identify correct panel)	2		
Sub Total	**19**		
TAKING HANDOUT FROM CONTROL FOR NON-ELECTRICAL ACTIVTIES			
1. Contact Control and Identify yourself. Also discuss adverse weather conditions	2		
2. Handout written out on instruction form correctly, including date, time and signature	3		
3. Handout taken from control with permission to perform non-electrical activities	2		
4. Complete the Declaration form for non-electrical activities	2		
Sub Total	**9**		
ACTIVITY EXECUTION			
1. Ensure minimum Approach Distances as per standard 240-132479779 between live apparatus and workmen are always maintained	2		
2. Ensure direct supervision from the correct level to prevent parallax errors	2		
3. Ensure that hand lines are visually inspected and electrically tested daily before work	2		
4. Ensure correct use of non-conductive hand lines – erected between the two phases and tied down to prevent encroachment with clearances	2		
5. Ensure that when using guard wire/earth peak to erect hand lines, guard wire must be earth correctly	2		
6. Ensure climbing is done safely and that there are metal parts between the worker and the live conductor	2		
7. Ensure that when climbing through the k point there is minimum time spent without metal parts between the worker and the live conductor	2		
8. Ensure that short slings are used when positioned/working on cross arms	2		
9. Ensure that when tools/equipment are lifted or lowered, the minimum safe approach distances are adhered to	2		
Sub Total	**18**		
EQUIPMENT RETURNED TO SERVICE			
1. Ensure that records of work done are kept	2		
2. Make sure that it is safe to hand back	3		
3. Check that all repair tools and equipment have been removed	3		

ACTIVITY	POINTS	ACTUAL	COMMENTS
4. Earths to be removed from the guard conductor (if applicable)	3		
5. Check that all workers have been withdrawn as per the workers register	2		
6. Hand lines (if applicable) to be lowered in a safe manner	2		
7. Sign the necessary documents (Complete workers register, complete sign off on the Annexure A Declaration Form)	2		
8. * Hand back to control	C / NYC		
Sub Total	**17**		
GENERAL SAFETY			
1. Completes all applicable paperwork	2		
2. Ensure that minimum Approach Distances as per standard 240-132479779 were adhered to	3		
3. Was there constant communication between the candidate and the workers?	2		
4. Did the workers understand the risk assessment done, complete the workers register, access control and emergency procedures?	2		
5. Was the Declaration form for non-electrical activities completed by all workmen upon receiving handout from control prior to commencement of work activities?	2		
6. Did the candidate check that all workmen have the necessary pre-requisites to perform the task?	2		
7. No unsafe condition or situation took place during the execution of work	2		
8. FAS used when working at height?	2		
9. Ensure rescue kit available	2		
10. Did the candidate inform the workers of the emergency numbers applicable?	1		
11. All standards and procedures adhered to – No regulations broken (ORHVS)	4		
12. Is the site left clean?	2		
13. Hand lines should be kept in plastic containers with lids to prevent moisture or contaminants	2		
14. To ensure that workers utilise the correct PPE for the task to be executed	2		
Sub Total	**30**		
General Comments			

OVERALL RESULTS

PRACTICAL	POINTS	ACTUAL	PERCENTAGE	PASS/FAIL
PRELIMINARIES	9			
TAKING HANDOUT FROM CONTROL FOR NON-ELECTRICAL ACTIVITIES	9			
ACTIVITY EXECUTION	18			
EQUIPMENT RETURNED TO SERVICE	17			
GENERAL SAFETY	30			
TOTAL	83			

Percentage		%	Recommended		Not recommended	

ASSESSOR		
NAME	SIGNATURE	DATE

SUPERVISOR / MANAGER		
NAME	SIGNATURE	DATE

G M R 2.1		
NAME	SIGNATURE	DATE

SUBJECT MATTER EXPERT		
NAME	SIGNATURE	DATE

COACH		
NAME	SIGNATURE	DATE

CANDIDATE		
NAME	SIGNATURE	DATE

NOTE:

1. **Candidate is to obtain 80% or more for each section and those sections which are unsuccessful, bridging training will be required. If the candidate is unsuccessful for three sections or more then it is recommended that the authorisation not be issued, or existing authorisation is terminated, and a full training course and re-evaluation will be required.**
2. **If the candidate is found Not Yet Competent (NYC) for any section of the assessment, then the candidate is unsuccessful.**
3. **If any item within the assessment is not applicable, then the corresponding activity points can be indicated as N/A on the form, and the subtotal for that section as well as the main total points tally would need to be amended accordingly.**

Annex L – Outcome 5 Practical Assessment Checklist for Authorised Person Operating Up To 33 kV

Eskom	**OUTCOME 5** **ASSESSMENT CHECKLIST OPERATING UP TO 33 kV (LINES)**	**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

CANDIDATE DETAILS:			
Name		**Unique/ID Number**	
Workstation		**Date**	
Location		**Activity**	

Competent:	
Not yet competent:	

(*) Denotes Instant Failure and assessment will be terminated (C – Competent – NYC not yet competent)

ACTIVITY	POINTS	ACTUAL	COMMENTS
1. PRELIMINARIES			
1. Pre Plan done (If applicable)	C/NYC		
2. Tailgate Meeting	3		
3. Is there a Fire Extinguisher on site?	1		
4. Is there a first Aid Box on site?	1		
5. Correct Protective Clothing (Hard hat, Operating Jacket, Long Pants, Safety Shoes)	C/NYC		
6. Check if earthing on structure is in position (possible theft of copper)	C/NYC		
7. Confirm there is no Abnormalities	2		
8. Revision of diagrams	2		
Sub Total	9		
2. RISK ASSESSMENT			
1. *Risk assessment carried out prior to starting work	C/NYC		
2. Sufficient steps are taken to minimise the risks	C/NYC		
3. All workers are informed of the risks, and the risk analysis form is correctly applied	2		
4. Workers register completed (Note: Workers register, and Risk assessment form combined)	2		
Sub Total	**4**		

ACTIVITY	POINTS	ACTUAL	COMMENTS
3. PRE-OPERATING			
1. Clean the applicator/operating stick (telescopic link stick) with a silicon coated cloth before use throughout	1		
2. Ensure the test instrument is in working order - Direct contact tester. (Test on known live equipment if possible)	1		
3. Inspect the portable earthing gear for mechanical defect before use	1		
4. Ensure to be at the correct apparatus by comparing the instruction on the operating instruction form with the apparatus to be operated on	1		
5. Write the operating instructions (Instruction may be pre-written to safe time)	1		
6. Test communication with the Controller	1		
7. Discuss with the Controller the planned operating instructions if the pre-written instructions are not in the correct sequence as issued by the Controller, the operator shall cancel the instruction and rewrite	2		
Sub Total	**8**		
4. OPERATING			
1 Contact Control - Identify Yourself, Substation and line with voltage	1		
2 Correctly writes out operating to isolate and earth the above equipment up to and including Handover.			
a. Form filled in correct sequence	1		
b. No two instructions on the same line	1		
c. No open lines between operating instructions	1		
d. All relevant details filled in on form	1		
3 Contact Control and take operating in correct sequence	C/NYC		
4 Confirm correct apparatus before operating	C/NYC		
5 Sign after each sequence	1		
6 Take off necessary protection as per operating	**1**		
7 Close S3 bypass isolators	**1**		
8 Open pole mounted breaker	**1**		
9 Confirm breaker open by indication or sound or by testing if open	C/NYC		
10 Attached labeling	**1**		
11 Open S1 line isolator	**1**		

ACTIVITY	POINTS	ACTUAL	COMMENTS
12 Remove S1 line isolator	**1**		
13 Open S2 line isolator	**1**		
14 Remove S2 line isolator	**1**		
15 Testing breaker S1 side apply earth	**1**		
16 Testing breaker S2 side apply earth	**1**		
17 Confirming number of earths on breaker	**1**		
18 Hand back to control with time of each action preformed	C/NYC		
19 Take hand from control before any work activities	C/NYC		
Sub Total	**17**		
5. SAFETY TESTING AND EARTHING			
1. Fit approved tester to operating stick and select correct voltage	1		
2. Operating stick checked and cleaned before using	2		
3. *Test-approved testing device on live equipment before all testing operations (Live, Dead, Live)	C/NYC		
4. Check condition of portable earths	2		
5. Safety tests all phases to be dead	C/NYC		
6. Apply earths in correct order	1		
7. Assistants helping with the application of the earths must be advised of what is to be done. (under supervision)	1		
8. Instructions ticked off step-by-step	1		
9. *Report back to control noting times	C/NYC		
Sub Total	**6**		
6. HANDOVER			
1. Contacts control and takes handover	2		
2. Handover instruction recorded on operating instruction form	1		
Sub Total	**3**		
7. PERMIT / WORKERS REGISTER (if applicable)			
1. Did the authorised person check that the responsible person is authorised to accept a permit?	2		
2. Ensure correct preparation of worksite as per ORHVS	2		

ACTIVITY	POINTS	ACTUAL	COMMENTS
3. Work permit form completed according to ORHVS and work requirements	2		
4. Has position of earths been shown and agreed that there are no additional earths needed?	4		
5. Special endorsements discussed with all and understood?	4		
6. Was the original handed to the responsible person?	2		
7. Workers register signed (Note: Workers register, and Risk assessment form combined)	2		
8. Has the permit number been entered on the workers register?	1		
9. On completion that workers are withdrawn, and permit been signed operator and responsible person	C/NYC		
Sub Total	**12**		
8. SUPERVISION			
1. Control over staff	2		
2. Giving clear instructions	2		
3. Continuously watching over staff	2		
4. Informing staff of dangers	2		
5. Taking corrective action	2		
6. Application of applicable ORHVS and Standards	2		
7. Knowledge of minimum safety clearance as in the ORHVS	C/NYC		
8. Maintaining minimum safety clearances at all times whilst at ground level	C/NYC		
Sub Total	**12**		
9. EQUIPMENT RETURNED TO SERVICE			
1. Removal of all tools and equipment.	2		
2. Withdrawal of workers and signing off on Workers register/ Risk assessment form	C/NYC		
3. Work permit form, the clearance signed off and completed according to ORHVS (if applicable)	2		
4. Hand back to Control	2		
5. Operating – taken in correct order	C/NYC		
6. Remove earths correctly	3		
7. Linking done correctly as per operating	3		
8. Closing of breaker	4		
9. Return protection	3		

ACTIVITY	POINTS	ACTUAL	COMMENTS
10. Hand back and Indicate state of apparatus to control	2		
11. Record breaker advances (if applicable)	1		
Sub Total	**23**		
(Pass 80%) TOTAL			

POST-MORTEM: (No answer will reflect as not yet competed)		
COMPLETES ALL PAPERWORK		
ACTIVITY	**YES**	**NO**
1 Pre plan (Signed off)		
2 Operating sheet (Signed off)		
3 Risk assessment (Signed off)		
4 Permit (Where applicable) (Signed off)		
5 Operating stick inspection sheet		
6 Portable earths inspection sheets		
7 Was there constant communication between operator and workmen?		
8 Is the site left clean?		

COMMENTS

PRACTICAL	POINTS	ACTUAL	PERCENTAGE	C/NYC
PRELIMINARIES	9			
RISK ASSESSMENT	4			
PRE -OPERATING	8			
OPERATING	17			
SAFETY TESTING AND EARTHING	6			
HANDOVER	3			
PERMITS/WORKERS REGISTER	12			
SUPERVISION	12			
EQUIPMENT RETURNED TO SERVICE	23			
POSTMORTEM	4			
TOTAL	**142**			

TOTAL OF OPERATING (Pass Mark 80 %)	**Competent**		**No Yet Competent**	

Name		Signature
Assessor:		
Candidate:		
Supervisor:		
SME:		
Date:		

Eskom	**OUTCOME 5 ASSESSMENT CHECKLIST OPERATING UP TO 33 kV (SUBSTATION AND CABLES)**	**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

CANDIDATE DETAILS:			
Name		**Unique/ID Number**	
Workstation		**Date**	
Location		**Activity**	

Competent:	
Not yet competent:	

(*) Denotes Instant Failure and assessment will be terminated (C – Competent – NYC not yet competent)

ACTIVITY	POINTS	ACTUAL	COMMENTS
1. PRELIMINARIES			
1. Pre Plan done (If applicable)	C/NYC		
2. Tailgate Meeting	3		
3. Is there a Fire Extinguisher on site?	1		
4. Is there a first Aid Box on site?	1		
5. Correct Protective Clothing 6. (Hard hat, Operating Jacket, Long Pants, Safety Shoes)	C/NYC		
7. Check if earthing on structure is in position (possible theft of copper)	C/NYC		
8. Confirm there is no Abnormalities	2		
9. Revision of diagrams	2		
Sub Total	9		
2. RISK ASSESSMENT			
1. *Risk assessment carried out prior to starting work	C/NYC		
2. Sufficient steps are taken to minimise the risks	C/NYC		
3. All workers are informed of the risks, and the risk analysis form is correctly applied	2		
4. Workers register completed (Note: Workers register, and Risk assessment form combined)	2		
Sub Total	**4**		

ACTIVITY	POINTS	ACTUAL	COMMENTS
3. PRE-OPERATING			
1. Correctly writes out operating to isolate and earth the above equipment up to and including Handover.			
2. Form filled in correct sequence	1		
3. No two instructions on the same line	1		
4. No open lines between operating instructions	1		
5. All relevant details filled in on form	1		
6. *Contact Control and take operating in correct sequence	1		
7. Sign after each sequence	1		
8. On entering SOR: Contacts Control & explains the nature of work (Name, Location, Nature of Work)	3		
9. Check Relays and log flagged relays for ALL equipment.	1		
10. Check Battery voltage. (Why?)	2		
11. Check Logbook. (Why?)	2		
12. Check loading. (Why?)	2		
13. Check correct labelling of panels	1		
14. Ensure substation diagram is the latest revision (Confirm with Control)	2		
Sub Total	**19**		
4. PROHIBITED AREA / LIVE CHAMBER			
1. Check correct labelling of apparatus.	2		
2. Check condition of equipment on which operating is to be done. (Breakers, Isolators, Auxiliaries)	1		
3. Check condition of equipment that will be affected by the operating. (Breakers, Isolators, Auxiliaries)	6		
4. Status of Apparatus (Isolators, Breakers)	6		
5. Before operating check condition of, and if necessary, clean operating stick (if applicable)	2		
Sub Total	**17**		
5. OPERATING SUBSTATION / RACKIN TYPE SWITCHGEAR			
1. Contact Control (Identify Yourself and Substation)	1		
2. Take Operating in correct sequence to Isolate cable network from sub	1		
3. Breaker one; Switch off supervisory	1		
4. Open breaker (or control open via supervisory)	1		
5. Check breaker open	1		
6. Hang Prohibitory sign on panel	1		

ACTIVITY	POINTS	ACTUAL	COMMENTS
7. Rack breaker out of Busbar (if applicable)	1		
8. Place breaker in earthing position (if applicable)	1		
9. Rack breaker in earthing Busbar	1		
10. Close breaker to apply earth	1		
11. Hang Prohibitory sign on panel	1		
12. Lock control room on leaving or leave policeman at gate or restrict access	1		
Sub Total	**12**		
6. OPERATING RMU/MINISUB			
1. Get operating to sectionalise cable network as per 11TI 03	1		
2. Redo risk assessment on equipment (specific risk; SF 6 gas, Oil, Vacuum)	C/NYC		
3. Open RMU isolators towards the corrected direction. All dead Operating)	C/NYC		
4. Check breaker/s/ RMU isolators open towards the correct direction (statist indicator)	3		
5. Label operating point and lock out	2		
6. Lock Minisub doors or place guard. (Repeat at other RMU(Minisub)	C/NYC		
7. Operator confirms with operating instructions to be at correct apparatus and ensure of the intended action (where? What? Why?)	C/NYC		
8. Instructions ticked off step-by-step as carried out	C/NYC		
9. *Report back operating with times and logs controls' time	3		
Sub Total	**9**		
7. SAFETY TESTING & EARTHING:			
1. Take operating for earthing	1		
2. Select correct number of earths required for the operation	1		
3. Check condition of earths	3		
4. SOR and yard gate – policed	1		
5. Assistants helping with the application of the earths must be advised of what is to be done (under supervision)	3		
6. Operating stick checked and cleaned before using	2		
7. Lays out earths and connect to earth in correct positions	1		
8. Fit approved tester to operating stick and select correct voltage	2		
9. *Test-approved testing device on live equipment before all testing operations (Live, Dead, Live)	C/NYC		

ACTIVITY	POINTS	ACTUAL	COMMENTS
10. *Test for voltage at positions where earths are to be applied on all three phases	C/NYC		
11. Check if main earthing on structure is in position and connected to earth mat/ earth spike (possible theft of copper) before applying earth to structure/ earth spike	4		
12. Apply the earths firmly in position	3		
13. Operator/Assistants not to hold onto earths while being applied	1		
14. Instructions ticked off step-by-step	1		
15. *Report back to control noting times	C/NYC		
Sub Total	**23**		
8. HANDOVER			
1. Contacts Control and takes a handover.	2		
2. Wright operating step on operating sheet	2		
Sub Total	**4**		
9. BARRICADING			
1. Equipment to be worked on effectively barricaded	2		
2. Barricading excludeslive equipment or structures	C/NYC		
3. Barricading not attached directly onto live structures (Effective use of stand-off brackets)	2		
4. Prevention of access to the remaining live yard or live equipment should be effective	2		
5. Danger signs/Warning labels are attached on all sides of barricading facing inwards toward work area	2		
6. Barricading to restrict movement of staff at all times	2		
7. Workers erecting barricading to be under direct supervision of AP	2		
Sub Total	**12**		
10. PERMITS / WORKERS REGISTER			
1. Permits and Workers Register completed correctly	2		
2. Did the appointed operator check that the responsible person is authorised to accept a permit?	2		
3. Did the operator and responsible person satisfy themselves that equipment is safe to work on? (Springs discharged, AC/DC supplies, etc.	4		
4. Did the appointed operator and the responsible person sign the permit section of the work permit form?	1		
5. Was the original handed to the responsible person?	1		

ACTIVITY	POINTS	ACTUAL	COMMENTS
6. Has position of earths been shown and agreed that there is no additional earths needed?	4		
7. Work and all dangers to be explained to all staff before work is commenced and before they sign the register	4		
8. Has the permit number been entered on the workers register?	1		
9. On completion that workers are withdrawn, and permit been signed operator and responsible person	C/NYC		
Sub Total	**19**		
11. SUPERVISION			
1. Control over staff	3		
2. Giving clear instructions	3		
3. Continuously watching over staff	3		
4. Informing staff of dangers	3		
5. Taking corrective action	3		
6. Application of applicable ORHVS and Standards	3		
7. Knowledge of minimum safety clearance as in the ORHVS	C/NYC		
8. Maintaining minimum safety clearances at all times whilst at ground level	C/NYC		
Sub Total	**18**		
12. EQUIPMENT RETURNED TO SERVICE:			
1. Check all staff are removed from the Prohibited area/ Live Chamber/ Lines and sign clearance section of permit/Workers register	C/NYC		
2. Dismantle all barricading	1		
3. Correctly writes operating from hand back to return of plant to service in correct sequence:			
• Form filled in correct sequence	1		
• No two instructions on the same line	1		
• No open lines between operating instructions	1		
• All relevant details filled in on form	1		
4. Contacts Control and proceeds with returning the equipment to service.	C/NYC		
5. Control Instructions signed after each sequence.	1		
6. All earths removed	C/NYC		
7. Check breakers if opened or closed before operating Isolators (Indication & Mechanical) and springs charged.	C/NYC		
8. Remove all prohibitory signs from Isolators	1		

ACTIVITY	POINTS	ACTUAL	COMMENTS
9. Check Isolators – all phases are fully closed or open and locked	4		
10. Check breakers visually for closed/open and taking load where applicable	2		
11. Operating ticked off step-by-step	5		
12. Report back to control noting times	C/NYC		
13. Check substation is back to normal	3		
14. Record work carried out in logbook	2		
15. Record breaker advances and details on breaker trip sheets	2		
Sub Total	**23**		

Remarks

POST-MORTEM: (No answer will reflect as not yet competed)		
COMPLETES ALL PAPERWORK		
ACTIVITY	**YES**	**NO**
1 Pre plan (Signed off)		
2 Operating sheet (Signed off)		
3 Risk assessment (Signed off)		
4 Permit (Where applicable) (Signed off)		
5 Operating stick inspection sheet		
6 Portable earths inspection sheets		
7 Was there constant communication between operator and workmen?		
8 Is the site left clean?		

PRACTICAL	POINTS	ACTUAL	PERCENTAGE	C/NYC
PRELIMINARIES	9			
RISK ASSESSMENT	4			
PRE-OPERATING	19			
PROHIBITED AREA / LIVE CHAMBER	17			
OPERATING SUBSTATION / RACKIN TYPE SWITCHGEAR	12			
OPERATING RMU/MINISUB	9			
SAFETY TESTING & EARTHING:	23			
HANDOVER	4			
BARRICADING	12			
PERMITS / WORKERS REGISTER	19			
SUPERVISION	18			
EQUIPMENT RETURNED TO SERVICE:	23			
POST-MORTEM				
TOTAL (Pass Mark 80%)	**107**			

Name		Signature
Assessor:		
Candidate:		
Supervisor:		
SME:		
Date:		

Annex M – Outcome 6 Practical Assessment Checklist for Appointed Operator – Operating Up To 132kV

Eskom	**OUTCOME 6** **PRACTICAL ASSESSMENT CHECKLIST FOR APPOINTED OPERATOR – OPERATING UP TO 132KV**	**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

CANDIDATE DETAILS:			
Name		**Unique/ID Number**	
Workstation		**Date**	
Location		**Activity**	

Competent:	
Not yet competent:	

(*) Denotes Instant Failure and assessment will be terminated (C – Competent – NYC not yet competent)

ACTIVITY	POINTS	ACTUAL	COMMENTS
1. **PRELIMINARIES**			
1. Pre-plan	C/NYC		
2. Tailgate Meeting	3		
3. Is there a Fire Extinguisher on site?	1		
4. Is there a First Aid Box on site?	1		
5. Correct Protective Clothing (Hard hat, Operating Jacket, Long Pants, Safety Shoes)	C/NYC		
6. Perimeter fence checked	1		
7. Check if the earthing on structure is in position (possible theft of copper)	C/NYC		
8. Key Cabinet	1		
9. Abnormalities / Mimic Board	1		
10. Revision of diagrams	2		
Sub Total	**10**		
2. **RISK ASSESSMENT**			
1. *Risk assessment carried out prior to starting work	Pass/Fail		
2. Sufficient steps are taken to minimise the risks	Pass/Fail		
3. All workers are informed of the risks, and the risk analysis form is correctly applied	2		

ACTIVITY	POINTS	ACTUAL	COMMENTS
4. Workers register completed (Note: Workers register, and Risk assessment form combined)	2		
Sub Total	4		
3. **PRE-OPERATING**			
1. On entering SOR:			
• Contacts Control & explains the nature of work (Name, Location, Nature of Work)	3		
• Check Relays and log flagged relays for ALL equipment.	1		
• Check Battery voltage. (Why?)	2		
• Check Logbook. (Why?)	2		
• Check loading. (Why?)	2		
• Check correct labelling of panels	1		
• Ensure substation diagram is the latest revision (confirm with Control)/ Mimic board	2		
2. Prohibited Area / Live Chamber			
• Check correct labelling of apparatus.	2		
• Check condition of equipment on which operating is to be done. (Breakers, Isolators, Auxiliaries)	1		
• Check condition of equipment that will be affected by the operating. (Breakers, Isolators, Auxiliaries)	6		
• Status of Apparatus (Isolators, Breakers)	6		
• Before operating check condition of, and if necessary, clean operating stick (if applicable)	3		
Sub Total	**31**		
4. **OPERATING**			
1. Correctly writes out operating to isolate and earth the above equipment up to and including Handover. • Form filled in correct sequence • No two instructions on the same line • No open lines between operating instructions • All relevant details filled in on form	C/NYC		
2. Contact Control and take operating in correct sequence	C/NYC		
3. Sign after each sequence	1		
4. Confirm correct apparatus before operating	C/NYC		
5. Open Breaker/s and check • Ammeter/s (Load shift) • Globes indication	 2 2		

ACTIVITY	POINTS	ACTUAL	COMMENTS
6. Hang Prohibitory sign on panel	1		
7. Select required keys from key box and lock key box	2		
8. Lock SOR on leaving or leave a policeman	2		
9. When entering yard leave policeman at gate or close gate	2		
10. No other persons working within yard while operating	2		
11. Check if at correct Isolators / breaker panel before operating commences	C/NYC		
12. Check breaker/s if in open or closed position before operating Isolators	C/NYC		
13. Check earth connection on Isolators operating handles for earth connection and support structure earth.	3		
14. Check Isolators if all three phases are open / closed – then lock	3		
15. Hang Prohibitory signs on operating handles & lock in position	2		
16. Instructions ticked off step-by-step	5		
17. Was auxiliary supply last off and first on/ tap changers?	2		
18. Busbar shutters locked where applicable (non-standard lock)	4		
19. *Report back operating with times and logs controls' time	C/NYC		
20. Keys back	1		
Sub Total	**34**		
5. **SAFETY TESTING & EARTHING**			
1. Take operating for earthing	1		
2. Select correct number of earths required for the operation	1		
3. Check condition of earths	3		
4. SOR and yard gate – policed	1		
5. Assistants helping with the application of the earths must be advised of what is to be done (under supervision)	3		
6. Operating stick checked and cleaned before using	2		
7. Lays out earths and connect to earth in correct positions	1		
8. Fit approved tester to operating stick and select correct voltage	2		
9. *Test-approved testing device on live equipment before all testing operations (Live, Dead, Live)	C/NYC		
10. *Test for voltage at positions where earths are to be applied on all three phases	C/NYC		
11. Check if main earthing on structure is in position and connected to earth mat (possible theft of copper) before applying earth to structure	4		

ACTIVITY	POINTS	ACTUAL	COMMENTS
12. Apply the earths firmly in position	3		
13. Operator/Assistants not to hold onto earths while being applied	2		
14. Instructions ticked off step-by-step	1		
15. *Report back to control noting times	C/NYC		
Sub Total	**24**		
6. **HANDOVER**			
1. Contacts Control and takes a handover.	2		
2. Handover instruction recorded on operating instruction form	2		
Sub Total	**4**		
7. **BARRICADING**			
1. Equipment to be worked on effectively barricaded	2		
2. *Barricading excludes live equipment or structures	C/NYC		
3. Barricading not attached directly onto live structures (Effective use of stand-off brackets)	2		
4. Restricted of access to the remaining live yard or live equipment should be effective	2		
5. Danger signs are attached on all sides of barricading facing inwards toward work area	2		
6. Barricading to control movement of staff at all times	2		
7. Workers erecting barricading to be under direct supervision of an appointed operator	2		
Sub Total	**12**		
8. **PERMITS / WORKERS REGISTER:**			
1. Permits and Workers Register completed correctly	2		
2. Did the appointed operator check that the responsible person is authorised to accept a permit?	2		
3. Did the operator and responsible person satisfy themselves that equipment is safe to work on? (Springs discharged, AC/DC supplies, etc. isolated)	4		
4. Did the appointed operator and the responsible person sign the permit section of the work permit form?	1		
5. Was the original handed to the responsible person?	1		
6. Has position of earths been shown to workers and where they may/may not climb?	4		
7. Work and all dangers to be explained to all staff before work is commenced and before they sign the register	4		
8. Has the permit number been entered on the workers register?	1		
Sub Total	**19**		

9. **SUPERVISION**	**POINTS**	**ACTUAL**	**COMMENTS**
1. Control over staff	2		
2. Giving clear instructions	2		
3. Continuously watching over staff	2		
4. Informing staff of dangers	2		
5. Taking corrective action	2		
6. Application of applicable ORHVS and Standards	2		
Sub Total	**12**		
10. **EQUIPMENT RETURNED TO SERVICE:**			
1. *Check all staff are removed from the Prohibited area/ Live Chamber/ Lines and sign clearance section of permit/Workers register	C/NYC		
2. Dismantle all barricading	1		
3. Correctly writes operating from hand back to return of plant to service in correct sequence.	C/NYC		
4. Form filled in correct sequence.			
• No two instructions on the same line	1		
• No open lines between operating instructions	1		
• No open lines between operating instructions	1		
• All relevant details filled in on form	1		
5. Contacts Control and proceeds with returning the equipment to service.	C/NYC		
6. Control Instructions signed after each sequence.	1		
7. *All earths removed	C/NYC		
8. Check breakers if opened or closed before operating Isolators (Indication & Mechanical) and springs charged.	C/NYC		
9. Remove all prohibitory signs from Isolators	1		
10. Check Isolators – all phases are fully closed or open and locked	4		
11. Check breakers visually for closed/open and taking load where applicable	2		
12. Operating ticked off step-by-step	1		
13. Tap changer selection	2		
14. *Report back to control noting times	C/NYC		
15. Check substation is back to normal:	3		
16. Record work carried out in logbook	2		
17. Record breaker advances and details on breaker trip sheets	2		
18. Keys to be put back	2		

ACTIVITY	POINTS	ACTUAL	COMMENTS
19. Check battery charger+ Voltage	2		
Sub Total	**27**		

General Comments

ACTIVITY	YES	NO
POST-MORTEM		
1. Completes ALL paperwork		
2. Was there constant communication between operator and workmen?		
3. Is site left clean?		
4. Hand in copy of all equipment / tools that have test intervals for verification. (Example: Operating stick, earths		

PRACTICAL	POINTS	ACTUAL	PERCENTAGE	C/NYC
PRELIMINARIES	10			
RISK ASSESSMENT	4			
PRE -OPERATING	31			
OPERATING	34			
SAFETY TESTING AND EARTHING	23			
HANDOVER	4			
BARRICADING	12			
PERMITS/WORKERS REGISTER	19			
EQUIPMENT RETURNED TO SERVICE	27			
TOTAL OF OPERATING (Pass Mark 80 %)	**164**			

Name		Signature
Assessor:		
Candidate:		
Supervisor:		
SME:		
Date:		

Annex N – Outcome 6 Practical Assessment Checklist for Transmission (NTCSA)

Eskom	**OUTCOME 6** **PRACTICAL ASSESSMENT CHECKLIST FOR TRANSMISSION(NTCSA)**	**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

CANDIDATE DETAILS:			
Name		**Unique/ID Number**	
Workstation		**Date**	
Location		**Activity**	

Competent:	
Not yet competent:	

(*) Denotes Instant Failure and assessment will be terminated (C – Competent – NYC not yet competent)

ACTIVITY	POINTS	ACTUAL	COMMENTS
PRELIMINARIES			
1. * Risk Assessment and/or Workers Register to be completed during tailgate meeting	C / NYC		
2. Understanding what is to be done	3		
3. Planning the job	3		
4. Is there a Fire Extinguisher on site?	1		
5. Is there a first Aid Box on site?	1		
6. Selecting appropriate tools and equipment	2		
7. Check if earthing on structure is in position (possible theft of copper)	C/NYC		
8. Correct Protective Clothing (Hard hat, Operating Jacket, Long Pants, Safety Shoes)	C/NYC		
RISK ASSESSMENT and PRE-OPERATING			
1. *Risk assessment carried out prior to starting work	C / NYC		
2. Sufficient steps are taken to minimize the risks	C / NYC		
3. All workers are informed of the risks, and the risk assessment form is correctly applied	C / NYC		
4. *Worker's register completed	C / NYC		
5. Change over substation auxiliaries' supply (if applicable)	2		
6. Select correct type and number of earths must be according to substation fault levels	3		

ACTIVITY	POINTS	ACTUAL	COMMENTS
7. Inspect condition of earths visually (quality, clamps & conductors)	3		
8. Lay out of earths at place where to be applied and connected to earth studs	8		
9. Barricading laid out at correct place (not hooked/erected)	2		
10. Select correct number of prohibitory signs and posted in front of correct panel	1		
11. Check and test high voltage detectors (test heads) Correct voltage and prove against a known live source	2		
12. Before using operating stick confirm correct voltage rating, check condition of stick, if tested (label) and clean operating stick with silicone cloth	2		
13. On entering the Relay Room: Check Relays and log flagged relays for all equipment	3		
14. Check Battery voltage. (Why?)	2		
15. Check Logbook and abnormal board (If Applicable). (Why?)	3		
16. Check loading. (Why?)	2		
17. Check correct labelling of panels	1		
18. In HV Yard Check correct labelling of apparatus. -	2		
19. Check condition of all apparatus on which operating is to be done. (Breakers, Isolators, Auxiliaries) and remaining apparatus	3		
20. Status of Apparatus if correspond with operating diagram (Isolators, Breakers)	3		
21. Check tap position and selection if applicable	1		
22. Contacts Control and Discusses the Following: Identify yourself and Substation, Scope of Work (security linking to be done by coach), Potential hazards & risks, State of apparatus, required operating, Number & positions of earths, operating sequence, adverse weather conditions.	6		
23. Discuss with control if diagrams correspond	1		
24. Agree on intended operating	1		
25. Correctly write out operating instructions	3		
(NOTE: No alterations or changes. Each instruction starts on a new line. Operating instructions in sequential format. Only Annex 14 abbreviations. All blank lines cancelled)			
Sub Total	**64**		
OPERATING			
1. Contact Control and Identify Yourself and Substation-	1		
2. Take Operating in correct sequence as written down on the operating instruction form	3		
3. *Carry out operating in the correct sequence	C / NYC		

ACTIVITY	POINTS	ACTUAL	COMMENTS
4. Hang Prohibitory sign on control panel and points of isolation	1		
5. Operating instruction form taken with to place of intended operating	1		
6. Select required keys from key box and lock key box if applicable	2		
7. Lock / close relay room on leaving and restrict access to prohibitory area gate	1		
8. No other persons within yard while operating	1		
9. If applicable was Tap changers selected correctly and auxiliary supply changed as per procedures	3		
10. *Check breaker/s visually open all 3 phases before operating Isolators	C / NYC		
11. Where applicable check if load is taken by the remaining feeders / Transformers	1		
12. Check Isolators visually if all three phases are open / closed – then make inoperative and lock out (L.O.R.)	3		
13. Hang Prohibitory signs on operating handles & lock in position (All points of supply)	2		
14. Operator confirms with operating instructions to be at correct apparatus and ensure the intended action correspond with instructions (where? what? why?)	10		
15. Instructions ticked off step-by-step as carried out	1		
16. Busbar shutters locked where applicable (Non-standard lock)	1		
17. Report back operating with times and logs controls' time	4		
18. Place keys back in key box and lock key box if applicable	1		
Sub Total	**36**		
SAFETY TESTING & EARTHING			
1. Take Operating in correct sequence as written down on the operating instruction form for earthing	5		
2. Select correct keys from key box for earth switches (if applicable)	1		
3. Lock / close relay room on leaving and restrict access to prohibitory area gate	1		
4. Workers helping with the application of the earths must be advised of what is to be done (under supervision)	2		
5. Fit approved tester to operating stick and select correct voltage	1		
6. *Test for voltage at positions where earths are to be applied on all three phases (Solid operating stick to be use for voltages above 132kV when testing)	C / NYC		
7. Check if main earthing on structure is in position and connected to earth mat (possible theft of copper) before applying earth to structure	5		
8. * Apply the earths firmly in position	C / NYC		

ACTIVITY	POINTS	ACTUAL	COMMENTS
9. The application of earths to be done in a safe and secured manner	3		
10. Operator/Assistants not to hold onto earth leads while being applied (Assistants may not apply or attached earths)	1		
11. Instructions ticked off step-by-step	10		
12. Select correct keys from key box for earth switches (if applicable	1		
13. Report back to control noting times	3		
Sub Total	**69**		
HANDOVER			
1. Hand-over written out correctly for each apparatus separately on an instruction form	3		
2. With handing back is ticked off correctly (Only one tick)	2		
Sub Total	**5**		
BARRICADING			
3. Apparatus to be worked on barricaded and includes an entrance and exit gate of the prohibited area or walkway created with barricading / ropes	2		
4. Barricading is not lower than 1500mm from ground level anywhere	2		
5. Barricading excludes live equipment or structures carrying live apparatus (Note if apparatus is included in the barricaded area which are alive and not pointed out as close proximity and done accidentally it must be an instant failure)	2		
6. Barricading not attached directly onto structures carrying live apparatus and erected properly	2		
7. Restricting access to remaining prohibited area should be effective	2		
8. Warning labels attached on all sides of barricading facing inwards towards work area (Look at Transformers with diamond mesh fences)	2		
9. Plan to barricade properly to include trucks or other construction vehicles, cranes or maintenance equipment	2		
10. Barricading to restrict access to live apparatus at all times	2		
11. Workmen erecting barricading to be under supervision of Authorised Person	2		
Sub Total	**18**		
PERMITS / WORKERS REGISTER			
1. Did the candidate check that the responsible person is authorised (with a valid authorisation) to accept a permit for the extent of their work?	2		
2. Has the isolated and earthed apparatus been shown to the responsible person	2		

ACTIVITY	POINTS	ACTUAL	COMMENTS
3. Has the positions and number of earths been shown to the responsible person	2		
4. Has the candidate explained to the workers the dangers/risks and where they may and may not climb	2		
5. Site specific hazards and risks noted on the “Special Endorsements” or “Special Endorsements” refers to risk assessment done to inform Responsible Person of site specific Hazards and Risks	3		
6. Did the candidate and the Responsible Person sign the permit section of the work permit form	2		
7. Was the original handed to the Responsible Person	1		
8. Was the work and all dangers/special endorsements explained to all staff before work is commenced and before the workers register has been completed by the candidate/Responsible Person	3		
9. Has the permit number been entered on the workers register	1		
Sub Total	**18**		
REGULATION 5.9.2 (TESTING)			
1. Responsible Person request Candidate to remove earths for testing purposes	1		
2. Candidate write instructions	3		
3. Candidate contact Control and receive permission to remove and re-apply earths under Reg. 5.09.2	2		
4. Select correct keys from key box, check labels (if applicable)	1		
5. All workers withdrawn and/or warned that it is not safe to work anymore	3		
6. Test leads applied	1		
7. Earths removed under supervision of Responsible Person if applicable	2		
8. Test carried out by Responsible Person/Candidate	1		
9. Earths re-applied under supervision of Responsible Person, if applicable	2		
10. Remove test leads from equipment and apparatus	1		
11. *Candidate report back to Control	C / NYC		
12. All keys returned to key box in correct place and key box locked (if applicable)	1		
Sub Total	**18**		
EQUIPMENT RETURNED TO SERVICE			
1. * Risk Assessment to be completed during tailgate meeting if applicable	C / NYC		
2. Check that all maintenance or repair work has been conducted, and equipment is ready for service (all connections checked, and permanent barriers replaced)	3		

ACTIVITY	POINTS	ACTUAL	COMMENTS
3. Apparatus in original position. Isolators and breakers back in original open position.	10		
4. Check that all relays on relay panels are reset	2		
5. Check all workers and equipment removed from work area	2		
6. Check all worker registers are cleared and permits signed off	2		
7. Drop/remove all barricading	1		
8. All working earths removed and control earths still in place (Only for Lines and Totally isolated substation)	2		
9. Apparatus been handed back is still isolated and earthed.	2		
10. All operating instructions correctly written out	10		
11. *Take Operating in correct sequence as written down on the operating instruction form to remove all earths	C / NYC		
12. *Take Operating in correct sequence as written down on the operating instruction form to close isolators (check breaker open and all L.O.R switches in correct position (remote).	C / NYC		
13. Visually check isolators properly closed on all three phases	5		
14. Close breakers, check indication/taking load	1		
15. Check if breakers are closed on all 3 phases	1		
16. All Operating instructions ticked off step-by-step	2		
17. If applicable was Tap changers selected correctly and auxiliary supply changed as per procedures	2		
18. Operating instructions reported to Control, and time recorded	2		
19. Check substation is back to normal (Operating diagram updated, alarms cleared, informed customers)	4		
20. Keys are returned to key box and correct place (if applicable)	1		
21. Check substation battery chargers and voltage	3		
22. Check all relays in whole relay room and report (if necessary)	1		
23. Check tap changer selection (if required)	1		
24. Check all auxiliary supplies (if required)	5		
25. Update substation logbook (update feeder counter cards/Bkr logbook)	2		
Sub Total	**64**		
GENERAL SAFETY			
1. Completes all applicable paperwork	4		
2. Were minimum safe work clearances taken into consideration	3		
3. Was there constant communication between the candidate and workers?	2		

ACTIVITY	POINTS	ACTUAL	COMMENTS
4. Did the workers understand the risk assessment done, complete the workers register, access control and emergency procedures	2		
5. Did the candidate inform the workers of the emergency numbers applicable	1		
6. Is the site left clean?	2		
Sub Total	**14**		

OVERALL RESULTS

PRACTICAL	POINTS	ACTUAL	PERCENTAGE	C/NYC
A. PRELIMINARIES	64			
B. OPERATING	36			
C. SAFETY TESTING & EARTHING	69			
D. HANDOVER	5			
E. BARRICADING	18			
F. PERMITS / WORKERS REGISTER	18			
G. REGULATION 5.9.2 (TESTING)	18			
H. EQUIPMENT RETURNED TO SERVICE	64			
I. GENERAL SAFETY	14			
TOTAL	306			

Percentage		**%**	**Recommended**		**Not recommended**	

ASSESSOR

NAME	SIGNATURE	DATE

SUPERVISOR / MANAGER

NAME	SIGNATURE	DATE

G M R 2.1

NAME	SIGNATURE	DATE

SUBJECT MATTER EXPERT

NAME	SIGNATURE	DATE

Annex O - Practical Assessment Checklist for Phasing Tests

Eskom	**PRACTICAL ASSESSMENT CHECKLIST FOR PHASING TESTS**	**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

CANDIDATE DETAILS:			
Name		**Unique/ID Number**	
Workstation		**Date**	
Location		**Activity**	

Competent:	
Not yet competent:	

(*) Denotes Instant Failure and assessment will be terminated (C – Competent – NYC not yet competent)

ACTIVITY	POINTS	ACTUAL	COMMENTS
PRELIMINARIES			
1 Understanding what is to be done	3		
2 Pre Plan done	3		
3 Is there a Fire Extinguisher on site?	1		
4 Is there a first Aid Box on site?	1		
5 Selecting appropriate tools and equipment	2		
6 Check if earthing on structure is in position (possible theft of copper)	C/NYC		
7 Correct Protective Clothing (Hard hat, Operating Jacket, Long Pants, Safety Shoes)	C/NYC		
Sub Total	10		
RISK ASSESSMENT:			
1. Risk analysis carried out prior to starting work	C/NYC		
2. Sufficient steps are taken to minimize the risks	C/NYC		
3. All workers are informed of the risks, and the risk analysis form is correctly applied	3		
4. Workers' register completed	2		
Sub Total	**5**		

ACTIVITY	POINTS	ACTUAL	COMMENTS
SECTION 1 – OPERATING:			
1. Has Control been notified of testing to be done?	C/NYC		
2. Has the breaker feeding equipment to be tested been selected off arc?	2		
3. Has "working on apparatus" label been attached on panel (if applicable)	2		
Sub Total	**4**		
SECTION 2 – SAFETY:			
1. Physically check phasing stick for: a. Damage b. Cleanliness c. Dry **NB! ONLY APPROVED PHASING STICKS TO BE USED**	C/NYC		
2. Is the voltage to be tested higher than rated voltage of phasing stick?	C/NYC		
3. Were inserts removed (where applicable) as an extra precaution to help maintain clearances during phasing test operation?	2		
4. When working from ladders, while erecting or removing ladder from structure, maintain safe clearances (only glass fibre ladders to be used)	2		
5. Is an authorised person present on ground level to supervise and ensure the maintenance of safe clearances?	2		
6. When leaving ground level, is safe clearance maintained at all times?	2		
Sub Total	**8**		
SECTION 3 – PHYSICAL TEST:			
1. Were removal of dust covers performed with the operating handle supplied?	2		
2. Did the contacts of the probe make contact with the live points simultaneously? (While one probe is in contact with live apparatus, the other probe must not be moved around.)	2		
3. Were all three voltages checked i.e. R-W, W-B, B-R to check presence of all three phases and working condition of phasing sticks?	C/NYC		
4. Was the phasing test performed correctly i.e. R-R, W-W, B-B?	2		
5. Were the readings taken recorded as each test is completed and verified by second authorised person?	2		

ACTIVITY	POINTS	ACTUAL	COMMENTS
1. Was phasing confirmed correct: i.e. Zero-volt readings on R-R, W- W, B-B (Vector grouping on transformers, if fed from different substations, to be considered as voltages might be detected.) Or Phasing incorrect if full voltage readings are detected.	C/NYC		
Sub Total	**8**		
SECTION 4 – AFTER COMPLETION:			
1. Safely remove all equipment.	1		
2. Report back to Control.	1		
3. Remove all labels on the panels at substation.	1		
4. Return breakers to normal.	1		
Sub Total	**4**		
TOTAL (Pass Mark 80 %)			

OVERALL RESULTS

PRACTICAL	POINTS	ACTUAL	PERCENTAGE	C/NYC
PRELIMINARIES	8			
RISK ASSESSMENT:	5			
SECTION 1 – OPERATING:	2			
SECTION 2 – SAFETY:	8			
SECTION 3 – PHYSICAL TEST:	8			
SECTION 4 – AFTER COMPLETION:	4			
TOTAL	35			

Percentage		**%**	**Recommended**		**Not recommended**	

Name		Signature
Assessor:		
Candidate:		
Supervisor:		
SME:		
Date:		

Annex P – Practical Evaluation for Local Controller Authorisation

Eskom	**PRACTICAL EVALUATION FOR LOCAL CONTROLLER AUTHORISATION**	**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

CANDIDATE DETAILS:			
Name		**Unique/ID Number**	
Workstation		**Date**	
Location		**Activity**	

Competent:	
Not yet competent:	

(*) Denotes Instant Failure and assessment will be terminated (C – Competent – NYC not yet competent)

ACTIVITY	POINTS	ACTUAL	COMMENTS
PRELIMINARIES (EQUIPMENT/MATERIAL REQUIRED)			
1 Private Office/Room	C/NYC		
➢ Desk/Chair	C/NYC		
➢ PC / Laptop / (Fax where applicable)	C/NYC		
➢ 24hr Digital Clock (any form of time)	C/NYC		
➢ Radio / Telephone Lines	C/NYC		
➢ Tape Recorder	C/NYC		
➢ Operating Diagrams	C/NYC		
➢ Log Sheets (Operating Sheet)	C/NYC		
➢ Scrap Paper for notes	C/NYC		
TOTAL			
PRE-OPERATING ACTIVITIES			
1 Understanding what is to be done	3		
2 ORHVS Book (Newest revision)	C/NYC		
3 List Of Contact Personnel Names & Phone Numbers of the applicable area	3		
4 Did the Local Controller check the status of the network with NMC prior to taking over local control?	3		

	ACTIVITY	POINTS	ACTUAL	COMMENTS
5	Did the authorised local control officer discuss and agree with NMC on boundaries of the network demarcated/handed out for local control?	3		
6	Did the local Control officer notify all the operators demarcated to that are about the establishment of the Temporary local control centre?	3		
	TOTAL	15		
OPERATING ACTIVITIES				
1	Did the Local controller uniquely number each fault received?	4		
2	Did the Local controller obtain all workorders for the planned work? (Where applicable)	4		
3	Did all the operating diagrams used indicate exact position and state of apparatus at all times? (i.e. open positions, earths applied, handovers and names of operators)	4		
4	Did the Local controller issue the instructions as discussed with Operator (Operating standard)	4		
5	Has name of operator been attached to operating sheet.	4		
6	Has times been log after instructions were issued	4		
7	No open line between operating steps	4		
8	If operator hand back were times and details recorded	4		
9	Has abnormalities recorded	4		
10	Has he indicated to field staff or area of responsibility that local control has been closed and given back to NMC	4		
	TOTAL	40		
POST-OPERATING ACTIVITIES				
1	Did the Local controller advice all the operators of the closing of Local control?	3		
2	Did the Local controller hand back his/her demarcated area to NMC detailing the status of the network?	C/NYC		
3	Did the Local controller fax/email all the copies of operating log sheets used to NMC?	3		
	TOTAL	6		

ACTIVITY	POINTS	ACTUAL	COMMENTS
ON COMPLETION RECORD HANDED IN:			
1. Operating sheet for hand over from NMC	5		
2. Operating sheets for all operating given	5		
3. Operating sheet for hand back to NMC	5		
TOTAL	**15**		
TOTAL (Pass Mark 80 %)			

State reasons for not recommending authorisation or other comments:

PRACTICAL	POINTS	ACTUAL	PERCENTAGE	C/NYC
PRELIMINARIES	C/NYC			
PRE-OPERATING ACTIVITIES	18			
OPERATING ACTIVITIES	40			
POST-OPERATING ACTIVITIES	6			
ON COMPLETION RECORD HANDED IN	15			
TOTAL	79			

Percentage		**%**	**Recommended**		**Not recommended**	

Name		Signature
Assessor:		
Candidate:		
Supervisor:		
SME:		
Date:		

Annex Q – Practical Evaluation for Controller Authorisation

Eskom	**PRACTICAL EVALUATION FOR CONTROLLER AUTHORISATION**	**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

CANDIDATE DETAILS:			
Name		**Unique/ID Number**	
Workstation		**Date**	
Location		**Activity**	

Competent:	
Not yet competent:	

ACTIVITY	POINTS	ACTUAL	COMMENTS
SHIFT TAKE OVER – NORMAL/FAULT CONDITIONS:			
1. Check outstanding and current stoppages.	**2**		
2. Check handovers (outstanding and current).	**2**		
3. Check SCADA entries &network changes	**2**		
4. Check SCADA dressing and earth position on current stoppages	**2**		
5. Check FMS/Phoenix for current stoppages	**2**		
6. Was the escalation process followed if applicable	**2**		
7. Progress of the present faults.	**2**		
8. Check danger points; normally open points non paralleling points	**2**		
9. Check SCADA and/ or ENS dressing, earth position and hand overs on current faults	**2**		
10. Check FMS and Phoenix work numbers (abnormalities	**2**		
11. Handover must be endorsed.	**2**		
Sub Total	**24**		
STOPPAGE PREPAREDNESS			
1. Check if new diagrams are in place (Patches)	**2**		
2. Check SCADA updates against new diagrams	**2**		
3. Check revision of the diagrams	**2**		

ACTIVITY	POINTS	ACTUAL	COMMENTS
4. Check for back feeding and loading	**2**		
5. Check for abnormalities	**2**		
6. Commissioning plans in place	**2**		
7. Fault level mitigation	**2**		
Sub Total	**14**		
FMS/PHOENIX			
1. Correct entries on planned work and faults (date, time)	**2**		
2. Understanding of RMC processes (dispatching)	**2**		
3. Checking and compiling of information	**2**		
4. Closing of reports	**2**		
5. Finding existing event by number	**2**		
6. Making events / stoppages active	**2**		
Sub Total	**12**		
SCADA			
1. Logging on SCADA	**2**		
2. SCADA navigation	**2**		
3. Operating on SCADA	**2**		
4. Tagging, command block, data acquisition block, alarm processing block/inhabits.	**2**		
5. Use of supervisory (apparatus identification)	**2**		
6. Manual data entry (apparatus identification)	**2**		
7. Checking and introduction of patches	**2**		
8. Accepting alarms	**2**		
9. Reacting to various alarms and events	**2**		
10. Demarcation lines	**2**		
Sub Total	**20**		
DIAGRAMS			
1. Proper diagrams dressing (operating diagram)	**2**		
2. Paper diagrams updates (Explain)	**2**		
3. Revision check	**2**		
4. SCADA diagrams compare with paper diagrams	**2**		
Sub Total	**8**		

ACTIVITY	POINTS	ACTUAL	COMMENTS
OPERATING			
1. Instructions issued as per 240-75909223	**5**		
2. Safety of operators	**4**		
3. Safety of equipment	**4**		
4. Continuity of supply	**4**		
5. Handing over of apparatus	**4**		
6. Decision making	**4**		
7. Operating zones and Demarcations	**5**		
8. Operational documents	**5**		
9. Identification of correct station and panel	**5**		
10. Efficiency level of advising field staff	**5**		
11. Accountability level for operating / decisions made	**5**		
12. Scope of work and pre-operating discussion	**5**		
13. Verbal instructions (repetitions for clarity)	**5**		
14. Writing instructions (Approved abbreviations and legibility)	**5**		
15. Loading calculations	**5**		
16. Protection knowledge and interpretation	**5**		
17. Voltage regulation/Control	**5**		
18. Interaction with other Control Centres	**5**		
19. Was the escalation process followed (where applicable)	**5**		
Sub Total	**90**		
RADIO AND PHONE			
1. Communication and use of operating language	**5**		
2. Self-control and mannerism under adverse conditions	**5**		
3. Knowledge of radio channels	**3**		
4. Relevant phone numbers (other control rooms, RMC desk)	**4**		
5. Reaction time	**5**		
6. Use of console	**4**		
Sub Total	**26**		
SHIFT HAND-OVER – NORMAL CONDITIONS			
1. Check hand- over book outstanding and current stoppages.	**2**		

ACTIVITY	POINTS	ACTUAL	COMMENTS
2. Check hand overs, outstanding and current.	**2**		
3. Check SCADA entries against network changes	**2**		
4. Check SCADA dressing and earth position on current stoppages	**2**		
5. FMS/Phoenix for current stoppages	**2**		
6. Was the escalation process followed if applicable	**2**		
7. Hand over must be endorsed.	**2**		
Sub Total	**14**		
SHIFT HAND-OVER – FAULT CONDITIONS			
1. Progress of the present faults.	2		
2. Check danger points; normally open points non paralleling points	2		
3. Check SCADA and or ENS dressing and earth position hand-outs on current faults	2		
4. Check FMS for current faults	2		
Sub Total	**8**		

PRACTICAL	POINTS	ACTUAL	PERCENTAGE	C/NYC
A. Shift Take Over	24			
B. Stoppage Preparedness	14			
C. FMS/Phoenix	12			
D. SCADA	20			
E. Diagrams	8			
F. Operating	90			
G. Radio and Phone	26			
H. Shift hand over (Normal Conditions)	14			
I. Shift Hand Over (Fault Conditions)	8			
TOTAL (Pass Mark 80%)	**216**			

General Comments:

Name		Signature
Assessor:		
Coach:		
Supervisor:		
SME:		
Candidate:		
Date:		

-Annex R – System Operator Practical Evaluation for Senior Controller Authorisation (NTCSA)

Eskom	**SYSTEM OPERATOR PRACTICAL EVALUATION FOR SENIOR CONTROLLER AUTHORISATION (NTCSA)**	**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

CANDIDATE DETAILS:			
Name		**Unique/ID Number**	
Workstation		**Date**	
Location		**Activity**	

Competent:	
Not yet competent:	

(*) Denotes Instant Failure and assessment will be terminated (C – Competent – NYC not yet competent)

PART 1: TRANSMISSION DESK			
ACTIVITY	**POINTS**	**ACTUAL**	**COMMENTS**
Shift hand-over process & Shift Take-over process			
1. Knowledge on what to handover / takeover	2		
2. Critical Alarms received, Faults on network, Actions taken & Personnel on callouts	2		
3. EL warnings	2		
4. System disturbances	2		
5. Equipment Tagging and Line Flagging	2		
6. Changes in security linking	2		
Sub Total	**12**		

Comments:

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ACTIVITY	**POINTS**	**ACTUAL**	**COMMENTS**
SCADA Dressing			
1. Handovers: EA's and Inter-Control	3		
2. Logging/Dressing of Earths	3		
3. Breakers & Links: Opened & Closed (Manual Dressing)	3		

ACTIVITY	POINTS	ACTUAL	COMMENTS
4. Information tag: (e.g LAB, Defective Equipment etc)	3		
5. Live Line Maintenance tags	3		
6. Reg 5.9.2	3		
7. Do Not Operate tags	3		
8. Line Flagging	3		
Sub Total	**24**		

Comments:

ACTIVITY	POINTS	ACTUAL	COMMENTS
Browsing through TEMSE screens			
1. Transformer tap-changers: up, down, manual & auto	1		
2. Voltage pages (e.g. Voltage summaries, Reactive Devices, QOS etc.)	1		
3. Different Loading pages (e.g. Gen Area Status, Gen plant/unit Status, Daily Estimates etc.)	1		
4. Information page	1		
5. SAPP	1		
6. Tie lines	1		
7. Equipment limits	1		
8. Alarm pages, acknowledge & purging	1		
9. Telephone list	1		
10. Power flow page	1		
11. State Estimator	1		
12. Reconstruction of events (Recon)	1		
Sub Total	**12**		

Comments:

ACTIVITY	POINTS	ACTUAL	COMMENTS
Issuing of instructions / standardized terminology (32-970)			
1. Continuous consultation with the Shift Advisor	3		
2. IPS lines	3		
3. Sub-transmission lines	3		
4. IPS transformers	3		
5. Sub-transmission transformers	3		
6. Sub-transmission busbars	3		
7. IPS busbars	3		
8. International Customers	3		
9. Reactive Devices (e.g. SVCs, RXs, SE/Shunt CXs, Stratcoms etc.)	3		
10. Breaker and Half (e.g. Connectors, Diameters, Bay & Tie-Bay Bkrs etc.)	3		
11. Execution of Bypass and Transfer procedures where necessary	3		
12. Execution of Commissioning Programs	3		
13. Execution of EPP plans when necessary	3		
14. Application of earths (e.g. Earth Switches, Portable earths and Working earths)	3		
15. Clarity and audibility of speech (voice)	3		
Sub Total	**45**		

Comments:

ACTIVITY	POINTS	ACTUAL	COMMENTS
Security Linking (substation layout)			
1. Security linking on:			
(a) Transformers	3		
(b) Feeders	3		
(c) Busbar Couplers and Sections	3		
2. Zone identification	3		
Sub Total	**12**		

Comments:

ACTIVITY	POINTS	ACTUAL	COMMENTS
Standby roster & Authorisation list			
1. Retrieval of standby roster when needed	1		
2. Retrieval of Authorisation list when needed	1		
3. Verification of AO Authorisations	1		
Sub Total	**3**		

Comments:

ACTIVITY	POINTS	ACTUAL	COMMENTS
Electronic Log			
1. Correct sequential logging of operating instructions			
a) Switching and linking	2		
b) Earthing	2		
c) Hand-Overs (e.g. EAs and Control Centres)	2		
2. Logging of AO names and Control Centres	2		
Sub Total	**8**		

Comments:

ACTIVITY	POINTS	ACTUAL	COMMENTS
Substation abnormalities and management thereof			
1. Awareness/Knowledge of substation abnormities (e.g. Lethabo Linking Scenarios, FLs)	1		
2. Capturing of substation abnormalities (e.g. Faulty relays, Stations running split etc.)	1		
3. Reporting of substation abnormalities	1		
4. Discontinuation or removal of an abnormality	1		
Sub Total	**4**		

Comments:

ACTIVITY	POINTS	ACTUAL	COMMENTS
TEMSE faults			
1. Knowledge on TEMSE faults reporting to NCSS	2		
Sub Total	**2**		

Comments:

ACTIVITY	POINTS	ACTUAL	COMMENTS
Phoenix and Outage related procedures			
1. Ability to comply to Outage Management Procedure	2		
Sub Total	**2**		

Comments:

ACTIVITY	POINTS	ACTUAL	COMMENTS
Basic restoration principles			
1. Knowledge of restoration principles	2		
2. In case of trip:			
a) Informing relevant stakeholders of the trip	2		
b) Calling out AO and Sec Plant personnel	2		
c) Locating the fault and isolation thereof	2		
d) Restoration sequence	2		
e) Informing relevant stakeholders after restoration	2		
Sub Total	**12**		

Comments:

ACTIVITY	POINTS	ACTUAL	COMMENTS
Telephone Etiquette			
1. Answering and operating the phone correctly	1		
2. Clarity, Loudness (audibility) of speech	1		
3. Discussion to the point (no wavering of facts)	1		
4. No wasting time on unnecessary / personal / irrelevant issues	1		
5. Conformance to language used throughout conversations (English)	1		
Sub Total	**5**		

Comments:

ACTIVITY	POINTS	ACTUAL	COMMENTS
Protection Knowledge (e.g. flags, alarms, bus-zone, etc)			
1. Understanding of different alarms	3		
2. Correct reaction to different alarm scenarios (e.g active alarm, switching Bus-zone OFF etc.)	3		
Sub Total	**6**		

Comments:

ACTIVITY	POINTS	ACTUAL	COMMENTS
Risk of Trip			
1. Was ROT outages managed properly?	7		
2. Were all stakeholders informed of the ROT?	7		
Sub Total	**14**		

Comments:

OVERALL SCORE (PART 1)	/167	%

PART 2: LOADING DESK			
ACTIVITY	**POINTS**	**ACTUAL**	**COMMENTS**
Receiving Hand-over			
1. Punctual for shift hand-over.	3		
2. Is he/she observant during shift hand- over?	3		
3. Did he/she ask any questions during shift hand-over (SH)?	3		
4. Did he/she check time error during SH?	3		
5. Did he/she check the frequency during SH?	3		
6. Did he/she ensure what the system condition is? (EL1, EL 2, normal)	3		
7. Did he/she inquire about over or underestimate during SH?	3		
8. Did he/she inquire if there is adequate reserves available	3		
9. Did he/she enquire about load shedding status	3		
Sub Total	**27**		

Comments:

ACTIVITY	**POINTS**	**ACTUAL**	**COMMENTS**
Taking Over (Day/Night) Loading Desk			
System Familiarization Tasks			
1. Did he/she check available operating reserves.	3		
2. Did he/she check regulation up/down on TEMSE?	3		
3. Did he/she check AGC status on/off?	3		
4. Did he/she check AGC mode TLBC/CFC?	3		
5. Does he/she understand when AGC modes must be changed?	3		
6. Did he/she check if SAPP contracts are entered into TEMSE.	3		
7. Did he/she check if time error correction is on/off on TEMSE?	3		
8. Did he/she check if current hourly contracts and Generation on system corresponds with TEMSE data?	3		
9. Did he/she check the current energy schedule for correctness?	3		
10. Does he/she understand the load pattern? (week, weekend, summer, winter, public holiday's)	3		
11. Does he/she know who is responsible for the energy contract?	3		

ACTIVITY	POINTS	ACTUAL	COMMENTS
12. Did he/she check if Tie-line flow correspond with SAPP schedule?	3		
13. Does he/she know who is responsible for SAPP contracts and how and where to contact them when needed?	3		
14. Can the person revise and implement SAPP contracts?	3		
15. Can he/she initiate time error correction procedure?	3		
16. Did he/she check what generation changes or outages would take place during shift?	3		
17. Does he/she continuously monitor the power stations for deviations from contract?	3		
18. Does he/she continuously monitor TEMSE for alarms?	3		
19. Does he/she know which alarms is high priority (group 1)?	3		
20. Did he/she read the morning report?	3		
Sub Total	**87**		

Comments:

ACTIVITY	POINTS	ACTUAL	COMMENTS
Manual loading			
1. Can he/she calculate the frequency bias?	3		
2. Does he/she know the relevant NERC criteria?	3		
3. Is he/she able to load without AGC using frequency as a measure?	3		
4. When he/she manually loads is the frequency distribution satisfactory?	3		
5. Does he/she know respective generator elbows, mill change requirements and mill change times?	3		
6. Does he/she know respective generators limits and capabilities?	3		
7. Can he/she follow the load manually without incident?	3		
8. Can he/she calculate and instruct necessary actions to prepare for load pickups or drop-of in advance?	3		
9. Does he/she inform Head of shift of any abnormalities?	3		
Sub Total	**28**		

Comments

ACTIVITY	POINTS	ACTUAL	COMMENTS
Performance of Routine Tasks on Loading desk			
1. Does he/she inform voltage desk of generation changes?	3		
2. Does he/she know and understand existing generation constraints on IPS?	3		
3. Does he/she inform PSM OR ADVISOR of any problems or risks he/she encounters?	3		
4. Does he/she update phoenix when generation changes take place?	3		
5. Does he/she update unit standby page on TEMSE when any generation changes take place?	3		
6. Is communication between NTCSA, loading, voltage and PSM or Advisor regular, and correct?	3		
7. Does he/she understand the load shedding order and the implementation process thereof.	3		
8. Does he/she know the types and number of reserves required under normal conditions?	3		
9. Does he/she know and understand what the impact and results of reserve shortages will have on the IPS?	3		
10. Is he/she able to detect reserve shortage well in advance?	3		
11. Does he/she know what the danger and actions will be for fires under NTCSA lines feeding from power stations?	3		
12. Is he/she contributively when faults occur on the system?	3		
13. Does he/she help Voltage or NTCSA desk with telephone calls if they are busy?	3		
14. Does he/she recognize faults on TEMSE and defect them?	3		
15. Can he/she capture or change hourly SAPP contract on TEMSE correctly?	3		
16. Is he/she able to identify and prioritize concurrent tasks?	3		
17. Does he/she know when it is necessary to initiate an energy reschedule?	3		
18. Does he/she Know who to contact to revise estimates and to request energy reschedule?	3		
19. Is he/she able to implement the revised energy schedule?	3		
20. Can he/she monitor individual Generator AGC performance and recognize poor or no response?	3		
21. Can the person access the relevant ancillary database on the intranet?	3		
22. Is the person able to retrieve, analyse and use the ancillary information?	3		
23. Does the person report generator trips to voltage desk and PSM or Advisor?	3		
24. Does he/she retrieve frequency deviations from frequency recorder after a unit trip?	3		
25. Is the person able to obtain the correct information regarding the unit trip from the relevant power station?	3		
26. Does the person check available reserves after unit trip?	3		

ACTIVITY	POINTS	ACTUAL	COMMENTS
27. Does the person update the relevant information systems after unit trip?	3		
28. Does he/she update SAPP inadvertent figures correctly and before the end of shift?	3		
29. Is the person able to load according to energy schedule?	3		
30. Does the person utilize the reserve merit order when real demand deviates from energy contract?	3		
31. Is he/she able to cope with pressure/stress while performing concurrent tasks?	3		
32. Does he/she answer the telephone punctually?	3		
33. Does the person correctly log all relevant information (instructions, unit trips, unit changes, load losses, and exc.)?	3		
34. Does the person maintain adequate regulation up and down as per requirement?	3		
35. Are instructions given according to regulatory requirements?	3		
36. Does the person adhere to water management requirements and constraints at all times?	3		
37. Does the person respond to alarms without delay and as per operating requirements?	3		
38. Is alarm information communicated to relevant key receivers and actioned?	3		
39. Is the person able to remotely start and stop Hydro and Gas turbines?	3		
40. Does the person change Hydro and Gas turbine modes according to system requirements?	3		
41. Is appropriate action taken when remote start-up fails?	3		
Sub Total	**123**		

Comments:

ACTIVITY	POINTS	ACTUAL	COMMENTS
Performance During Abnormal Conditions			
1. Can he/she immediately identify that system is abnormal or that an abnormal incident took place?	3		
2. Is the person able to quickly analyze the abnormal condition/incident and communicate the reason to PSM or Advisor?	3		
3. Can the person determine what is the most appropriate action to take in order to stabilize the system or to return it to normal?	3		
4. Does the person implement the corrective actions as per operational SOG's, OP's and agreements	3		
5. Is the action reviewed after implementation for correctness and effectiveness to address abnormal system or incident?	3		
Sub Total	**15**		

Comments:

ACTIVITY	POINTS	ACTUAL	COMMENTS
Hand Over of Shift			
1. Is the person's shift hand over sheet written out and containing all necessary information, before handing over of shift?	3		
2. Does he/she compare and verify valid information with the PSM, advisor or person on the voltage desk, before handing over of shift?	3		
3. Does the person ensure that there is sufficient reserve on handing over of shift where possible?	3		
4. Does the person hand over shift to his reliever in a professional manner?	3		
5. Is additional information shared with reliever when handing- over shift, i.e. included in the hand- over sheet.	3		
Sub Total	**15**		

Comments:

ACTIVITY	POINTS	ACTUAL	COMMENTS
Operational Knowledge and Understanding			
1. Can the person explain the rules and agreements related to tie line control?	3		
2. Does the person understand the consequences of tie line deviations?	3		
3. Can the person explain principals and concepts related to inter utility emergency conditions?	3		
4. Can the person explain the relationship between SOG's and OP's?	3		
5. Does he/she know which SOG's and OP's are relevant to the loading dispatch desk?	3		
6. Can the person explain what the different kinds of operational reserves are?	3		
7. Does the person know what the mode change times of the different hydros and gas units are?	3		
8. Can the person indicate where he will find the dam levels and fuel levels of Hydro and Gas stations?	3		
9. Does the person understand their role on the dispatch desk and how it relates to the rest of the control room?	3		
10. Is the person able to explain in detail what actions will be required from them during a low frequency incident?	3		
11. Can the person calculate the amount of generation change required when a high or low frequency is experienced?	3		
Sub Total	**33**		

Comments:

ACTIVITY	POINTS	ACTUAL	COMMENTS
Behaviour and Attitude			
1. Does the person accept seniority and authority?	1		
2. Does he/she perform his/her duties professionally?	1		
3. Is the person authoritative in performing his duties?	1		
4. Does he/she take responsibility while performing his/her duties?	1		
5. Is his /her telephone etiquette exemplary?	1		
6. Does he/she inform PSM or advisor prior to taking action?	1		
7. Does he/she take action as a matter of urgency?	1		
Sub Total	**7**		

Comments:

OVERALL SCORE (PART 2)	/334	%

PART 3: VOLTAGE DESK			
ACTIVITY	**POINTS**	**ACTUAL**	**COMMENTS**
Shift Take-Over and Hand-Over			
1. Is there clear communication by Candidate during handover?	3		
2. Does the Candidate listen carefully and ensure full understanding by asking questions?	3		
3. How are interferences during handover managed?	3		
4. Was Loading Desk handover discussed?	3		
5. Was NTCSA Desk handover discussed?	3		
6. Was the Daily Report discussed?	3		
7. Was all system faults and sustained alarms discussed?	3		
8. Was the system status and emergency reserve deployment discussed?	3		
9. Was the reserve levels and merit orders and availability discussed?	3		
Sub Total	**27**		

Comments:

ACTIVITY	POINTS	ACTUAL	COMMENTS
Voltage Control			
1. After taking over shift, was a thorough voltage profile check carried out by Candidate, and was necessary adjustments made?	3		
2. Did Candidate check Alarm log for abnormalities?	3		
3. Did the Candidate act to correct Alarms and abnormalities?	3		
4. Did the Candidate check availability of devices available for voltage control?	3		
5. Was the Voltage profile continuously monitored and adjusted?	3		
6. Was proactive voltage control done appropriate for time of day and system requirement?	3		
7. Was Ferranti, Surge impedance loading, and Fault levels considered during switching activities for outages?	3		
8. Is there full understanding of what actions to take during a voltage exceedance?	3		
9. Were appropriate entries made in Daily Report related to voltage control exceedances, equipment faults and lines switched out to control voltage?	3		
10. Did the Candidate discuss any voltage related problems with appropriate departments and was information shared with PSM and Advisor where required?	3		
Sub Total	**30**		

Comments:

ACTIVITY	POINTS	ACTUAL	COMMENTS
Transmission Outage and Emergency Management			
1. After taking over shift was the NTCSA Outage plan for the day checked and the outages for the day discussed between the Candidate and the Snr Controllers on the Transmission Desks and the Advisor?	3		
2. During this discussion, was the following considered? • Fault level mitigation. • System Security. • Line and Equipment • Loading. • Outage Conflicts.	15		

• Correct flagging. • Impact on voltages. • Abnormal operating procedures. • Transient stability limitations. • Commissioning requirements and procedures. • Increased system risks. • Weather conditions. • Line faults and other equipment faults. • Operating comments. • TEMSE problems, faults and availability.			
3. Were outages considered where Generation will be constrained? Were there severe ongoing system emergencies where operating risks need to be mitigated for e.g. stage 6 load shedding?	3		
4. Was Peer checking carried out during switching operations and was communication clear?	3		
5. Was security linking done correctly and correct operating sequence taken into consideration?	3		
6. Was NTCSA Outages updated, and maintenance breakdown logs updated	3		
7. Were NTCSA faults correctly identified and restoration and system faults correctly mitigated	3		
8. Was switching sequences correct and ORHVS adhered to?	3		
9. Were instructions issued according to ORHVS requirements?	3		
10. Was switching sequences correct and ORHVS adhered to?	3		
Sub Total	**42**		

Comments:

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ACTIVITY	POINTS	ACTUAL	COMMENTS
Generation, Frequency and Emergency Management			
1. Did the Candidate communicate with Loading Desk, where NTCSA Outages could have an influence on the availability of Generation?	3		
2. Did the Candidate communicate Generation constraints that can influence NTCSA Outages with the NTCSA Desk?	3		
3. Was system emergency status considered and was the emergency reserve merit order the latest updated version?	3		
4. Was emergency reserves and Emergency Reserve Merit Order checked and ensured to be correct?	3		
5. Was all necessary communication for unit trips, frequency incidents and deployment of emergency reserves done and correctly logged in?	3		
6. Did the Candidate check ILS availability, and does he/ She know how to utilise and restore?	3		

ACTIVITY	POINTS	ACTUAL	COMMENTS
7. Did Candidate check OCGT's availability and deployment merit order?	3		
8. Were the system Dump Energy reserves considered, and does He / She know how to implement curtailment of Wind Generation and Apollo CS output?	3		
9. Can the Candidate implement load curtailment and load shedding?	3		
Sub Total	**27**		

Comments:

ACTIVITY	POINTS	ACTUAL	COMMENTS
Communication			
1. Is Daily Report and associated entries done correctly and timeously?	2		
2. Is messaging system used correctly and required communication done?	2		
3. Does Candidate know how to complete ERCC report?	2		
4. Does the Candidate know how and when to publish Daily Report?	2		
5. Is the PSM and Advisor kept up to date with the information, incidents and abnormalities on the system?	2		
6. Did the Candidate clearly communicate with His / Her Peers?	2		
7. Is the Candidate in control of the Voltage desk?	2		
8. Did the Candidate ask questions when unsure and clarity was required?	2		
Sub Total	**16**		

Comments:

OVERALL SCORE (PART 3)	/167	%

Name		Signature
Assessor:		
Coach:		
Candidate:		
Supervisor:		
SME:		
Date:		

Annex S - Evaluation of The Assessment Process

Eskom	**EVALUATION OF THE ASSESSMENT PROCESS** **(To be completed by the candidate)**	**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

Name of Candidate	
Name of Assessor	
Date of Assessment	

NO	QUESTION	Yes	No	Comment
1.	Did the assessor put you at ease during the assessment process?			
2.	Was the assessment program timeously shared with you?			
3.	Was it clear and understandable?			
4.	Was the assessment program followed, and relevant documents made available to you?			
5.	Was all the appropriate documentation completed and signed?			
6.	Is there anything that you can add to give value to the assessment program?			

Is there anything that you can add to give value to the assessment program?

Annex T – Assessment Report

Eskom	**ASSESSMENT REPORT** (To be completed by Assessor)	**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

RECOMMENDED ☐ NOT RECOMMENDED ☐

CANDIDATE NAME: _____

UNIQUE / ID No: _____

Element	Competent	Not yet Competent
Knowledge Questionnaire		
Verbal test (during Practical)		
Practical test		
REASONS/COMMENTS FOR NOT RECOMMENDING AUTHORISATION:		

ASSESSOR:

NAME: _____ SIGNATURE: _____

ASSESSMENT PANEL MEMBERS:

NAME: _____ SIGNATURE: _____

NAME: _____ SIGNATURE: _____

NAME: _____ SIGNATURE: _____

DATE: _____

CANDIDATE:

NAME: _____ SIGNATURE: _____

DATE: _____

Annex U – Authorisation for Control Officer

(This template is Informative and can be changed to be site-specific)

Eskom	**AUTHORISATION FOR CONTROL OFFICER**	**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

Operating Unit/Grid _____ Area of responsibility _____

Name: _____ Department/Company: _____

Designation _____ Unique/ID no.: _____

Contact no.: _____

IN TERMS OF THE OPERATING REGULATIONS FOR HIGH VOLTAGE SYSTEMS YOU ARE HEREBY AUTHORISED TO PERFORM THE DUTIES AS DEFINED BELOW:

(Add / delete what is necessary and update / change restrictions accordingly)
SPECIFIC REGULATION:

1.17 Control Officer restricted to: _____
2.1 Duties and responsibilities of Control Officers: _____
2.2 Keeping of records: _____
2.3 Issue and receipt of operating instructions: _____
2.4 Control of loading Power Stations under normal and abnormal conditions: _____
2.5 Control of loading of Distribution apparatus: _____
2.9 Use of operating diagram: _____

SPECIFIC OPERATING:

2.3.3.3 Give permission to operate and work instruction: _____
2.6 Making apparatus alive on first installation or after alteration: _____
5.1 To perform Switching/Linking operations remotely: _____
5.1 Supervise learner Control Officers operating under supervision: _____
5.3 Making apparatus safe to work on: _____
5.3.6.1 Handover instruction: _____
6.4 Restoration of supply/Permission to Sectionalise: _____
7.2.1 Preparation and handing over of apparatus for live work: _____

RECOMMENDED BY ASSESSOR: ..... SIGNATURE: ..... DATE: .....

SUPPORTED BY SENIOR SUPERVISOR/ EMPLOYER: ..... SIGNATURE: ..... DATE: .....

AUTHORISED BY DESIGNATED PERSON: ..... SIGNATURE: ..... DATE: .....

VALIDITY PERIOD OF THIS AUTHORISATION: ..... **TO** .....
(Date of practical test) (Expiry date)

THE AUTHORISATION DETAILED ABOVE IS UNDERSTOOD BY ME AND I ACCEPT THE DUTIES AND RESPONSIBILITIES SET OUT THEREIN.

INCUMBENT (NAME PRINT): ..... SIGNATURE: ..... DATE: .....

Annex V – Authorisation for Low Voltage

(This template is Informative and can be changed to be site-specific)

Eskom		**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

Operating unit: ..... **Area of Responsibility (Sectors):** .....

Name: ..... **Department/Company/CNC:** .....

Designation: ..... **Unique/ID no.:** .....

Contact no.: .....

In terms of Eskom's Low Voltage Regulations (240-61523882) you are hereby authorised to perform the duties as defined below:

Note: *All details not applicable must be erased*

In terms of Eskom's Low Voltage Regulations (240-61523882) you are hereby authorised to perform the duties as defined below:

3.1.1 LOW-VOLTAGE OPERATOR:

- Perform work without a permit: On either or both overhead and underground network as well Control Plant up to 1000V AC and 1500 V DC.
- Issue of permits: For Dead work on either or both overhead and underground networks as well as Control Plant up to 1000V AC and 1500 V DC.
- Specific Authorisation as per Task Manual: Meter Maintenance as per attached TASK MANUALS on networks up to 1 000V

3.1.2 LOW-VOLTAGE RESPONSIBLE PERSON:

- Responsible person restricted to: Perform dead work on either or both overhead and underground networks as well as Control Plant up to 1000V AC and 1500 V DC covered by a permit.

5. SUPERVISION OR SUPERVISE:
People in electrically hazardous locations (ELW 001): Supervision of persons working on networks up to 1 000V and 1500 VDC.

- Supervision of learner low-voltage operators carrying out the operating: On either or both overhead and underground networks up to 1000V AC and 1500 V DC.
- Supervision of learner low-voltage candidates carrying out work as per task manuals: On either or both overhead and underground networks up to 1000V AC and 1500 V DC.

6. RIGHT TO POSSESS A KEY:

- Low Voltage key (Green): To obtain access to either or both overhead and underground network apparatus up to 1000V AC and 1500 V DC.

7. PREPARING LV PLANT FOR WORK:

- Perform identification of circuits, switching, linking, locking out, tagging, and testing activities: On either or both overhead and underground networks as well as Control Plant up to 1000V AC and 1500 V DC.
- Perform earthing operations on bare conductors and tagging of isolating points: Networks up to 1000V AC and 1500 V DC.

8. RETURNING PLANT TO SERVICE:

- Perform identification of circuits, clear link and closing activities: On either or both overhead and underground networks as well as Control Plant up to 1000V AC and 1500 V DC

9. ISSUE OF WORK PERMITS:

- Issue of permits of prepared plant: On either 1000V AC or 1500 V DC

10. LOW-VOLTAGE LIVE WORKING:

- Perform live work tasks in accordance with the task manuals as listed (ticked off): Networks up to 1000V AC and 1500 V DC.

11. TESTING AND COMMISSIONING

- Of prepared plant as per the regulations: On either or both overhead and underground networks as well as Control Plant up to 1000V AC and 1500 V DC.

13. RESTRICTION/S:

- May only perform low voltage tasks on shared structures that carries live MV under supervision of a person that is authorised as per outcome 4a that implies; Take a hand over of apparatus, supervision of people performing work in close proximity conditions.
- No lifting machinery or bucket may be used on a live shared structure.

Recommended by Assessor: ..... Signature: ..... Date: .....

Supported by Senior Supervisor/Employer: ..... Signature: ..... Date: .....

Authorised by Designated person: ..... Signature: ..... Date: .....

Validity period of this authorisation: ..... (Date of practical test) To ..... (Expiry date)

THE AUTHORISATION DETAILED ABOVE IS UNDERSTOOD BY ME AND I ACCEPT THE DUTIES AND RESPONSIBILITIES SET OUT THEREIN. CONTRACTORS ACCEPT RESPONSIBILITIES ON OWN RISK.

Incumbent (Name print): ..... Signature: ..... Date: .....

Annex W – High Voltage Authorisation for Distribution and Transmission

(This template is Informative and can be changed to be site-specific)

Eskom	**Outcome 6 HIGH VOLTAGE AUTHORISATION FOR DISTRIBUTION, SUB-TRANSMISSION Voltage up 132 kV**	**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

Operating unit: ..... Area of responsibility: .....

Name: ..... Department/Company: .....

Designation: ..... Unique/ID no.: .....

Contact no.: .....

In terms of definition 1.7 of the Operating Regulations for High Voltage Systems you are hereby authorised to perform the duties below:

Note: All details not applicable must be erased & Restriction must be indicated

REGULATION

1.70	Responsible person restricted to:	(e.g. line work only, cable work only)
2.1.3.2	Operate on excluded systems:	Distribution and Sub transmission network up to132 kV
2.3.4.1	Transmission of messages:	Distribution and Sub transmission network up to 132 kV
2.3.5.1	Accept pre-authorised instructions:	Distribution and Sub transmission network up to 132 kV.
2.3.5.3	Taking permission to operate and work:	Distribution network overhead line up to 33kV.
2.3.5.4	Taking permission to sectionalize:	Distribution network overhead line up to 33kV.
2.7.1	Phasing:	**(Stick & Visual)** Distribution network overhead line up to 132 kV
3.1	Access to live chambers, restricted- and prohibited areas:	Distribution and Sub transmission network up to 132 kV
4.2.4	Right to possess keys:	As per authorised level **colour** key.
5.1	Perform switching, linking, safety testing and earthing operations:	Distribution and Sub transmission network up to 132 kV.
5.3.6.1	Take handover:	Distribution and Sub transmission network up to 132 kV.
5.3.6.3	Supervise work in close proximity to live conductors or apparatus:	Distribution and Sub transmission network up to 132 kV.
5.5.2	Replace Drop out fuse Isolator:	Distribution networks up to 33 kV
5.6.2	Supervise persons work in prohibited areas:	Conduct supervision in accordance with 240-86640998
5.9.2	Testing of equipment:	Distribution and Sub transmission network up to 132 kV
6.4	Restoration of supply:	Distribution and Sub transmission network up to 132 kV
6.5	Establish a temporary local control:	Distribution and Sub transmission network up to 132 kV.
8.2.	Issue and Receive of Work permit:	Distribution and Sub transmission network up to 132 kV.

OTHER RESTRICTION/S.

.....

IMPORTANT NOTES

The validity of this authorisation is dependent of a valid **ORHVS (Exp.)**

RECOMMENDED BY ASSESSOR: ..... SIGNATURE: ..... DATE: .....

SUPPORTED BY SENIOR SUPERVISOR/ EMPLOYER: ..... SIGNATURE: ..... DATE: .....

AUTHORISED BY DESIGNATED PERSON: ..... SIGNATURE: ..... DATE: .....

VALIDITY PERIOD OF THIS AUTHORISATION: ..... **TO** .....

(Date of practical test) (Expiry date)

I UNDERSTAND THE AUTHORISATION DETAILED ABOVE AND I ACCEPT THE DUTIES AND RESPONSIBILITIES SET OUT THEREIN. CONTRACTORS ACCEPT RESPONSIBILITIES ON OWN RISK.

INCUMBENT (NAME PRINT): ..... SIGNATURE: ..... DATE: .....

Annex X – Assessor / Coach / Moderator

Eskom	**ASSESSOR / COACH / MODERATOR / DATABASE ADMINISTRATOR APPOINTMENT**	**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

OU/BU/Grid:_____ CNC/CLN: _____

NAME: _____ DEPARTMENT: _____

DESIGNATION:_____ UNIQUE NO / ID No: _____

GEOGRAPHICAL OPERATING AREA:

Note: Erase if not applicable and add more duties if required.

In terms of the "Power Delivery Operating Assessment, Authorisation and Training Standard" and in terms of the "Operating Regulations for High Voltage Systems" (ORHVS) you are hereby appointed to perform the duties as defined below:

- Assessor for authorisation outcomes: 1,2,3,4,5,6,7,8 & LV
- Coach for outcomes 1,2,3,4,5,6,7,8 & LV
- Moderator for authorisation outcomes 1,2,3,4,5,6,7,8 & LV
- Authorisation data base administrator

APPOINTMENT EXPIRY DATE: (where applicable) _____

DESIGNATED/DELEGATED PERSON: _____

SIGNATURE: _____

The appointment detailed above is understood and I accept the duties and responsibilities.

SIGNATURE: _____ DATE: _____

Annex Y – Invigilator Appointment

Eskom	**INVIGILATOR APPOINTMENT**	**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

OU/Grid: _____ **CNC/CLN:** _____

NAME:_____ **DEPARTMENT:** _____

DESIGNATION:_____ **UNIQUE NO/ID No:**_____

GEOGRAPHICAL OPERATING AREA: _____

Note: Erase if not applicable and add more duties if required.

In terms of the "Power Delivery Operating Assessment, Authorisation and Training Standard" and in terms of the "Operating Regulations for High Voltage Systems" (ORHVS) you are hereby appointed to perform the duties as defined below:

- Ensure that the examination runs smoothly, in the set time, without interruptions, in conditions that allow the learners to perform at their best.
- Ensure that the learners understand what is expected of them without helping them with the actual answers.
- Deal thoughtfully and responsibly with unexpected problems that may arise; Ensure that there are no irregularities.
- Keep any records required.
- No other unauthorised person may look at the exam paper except the learners who are writing the exam.
- No other person/facilitator may be present at the exam sitting except the invigilator and the learners.
- If for any reason I must leave the room, I will ensure that I have delegated to another invigilator to stand in for me.

I understand that if any irregularity is detected by the Training and Delivery, an investigation will take place and that I, as an invigilator, will be held accountable for that irregularity and that a written report will be expected from me.

Note: This appointment supersedes all previous appointments.

DESIGNATED/DELEGATED_____

SIGNATURE: _____ DATE: _____

The appointment detailed above is understood and I accept the duties and responsibilities.

Annex Z – Withdrawal Letter

Eskom	**WITHDRAWAL LETTER**	**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

To Whom It May Concern:

Sir/ Madam

Withdrawal of Authorisation:

I,_____, Designated/Delegated Person for: _____

Operating Unit, _____Zone, herewith withdraw the Authorisation of the following Person:

Name: _____ Unique Number: _____

This person's Authorisation is withdrawn and shall not be valid in this area/Operating Unit/Zone from this date:

Date: _____

This withdrawal is in line with the recommendation from the Investigation Panel/ Medical Team and is done according to Power Delivery Operating Assessment, Authorisation and Training Standard 240-70413865.

Designated/Delegated Person

Name: _____

Unique No.: _____

Designation: _____

Signature: _____

Date: _____

Operator sign of received

Name: _____

Unique No.: _____

Designation: _____

Signature: _____

Date: _____

Annex AA - Authorised Person Observation HV & MV

Eskom	**AUTHORISED PERSON OBSERVATION HV&MV**	**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

PERSON BEING OBSERVED DETAILS:			
Name:		**Unique/ID Number:**	
Workstation:		**Date:**	
Location:		**Activity**	

Note: Each No answer must have remark on last page

PRELIMINARIES	**Yes**	**No**	**N/A**
• Before operating check condition / clean operating stick.			
• Confirm correct tester as per voltage.			
• Confirm the condition of earths.			
• Is there a Fire Extinguisher and a First Aid Box on site?			
• Confirm class 3 glove been tested from lab as per cycle.			
• Correct Protective Clothing (Hard hat, Operating Jacket, Long Pants, Safety Shoes)			
• Perimeter fence checked.			
• Check Logbook / abnormal board / mimic board for any abnormalities			
• Check condition of equipment that will be affected by the operating. (Breakers, Isolators, Auxiliaries, Rural Transformers e.g.)			
• Check correct labelling of apparatus.			
• Contacts Control & explains the nature of work (Name, Location, Nature of Work)			
• Confirm operating diagram revision (This includes substations or lines)			
RISK ASSESSMENT			
• Has the scope of work been discussed with all workers?			
• Risk assessment conducted prior to starting work.			
• Sufficient steps taken to minimize the risks.			
• All workers informed of the risks.			
PRE-OPERATING			
• Correctly write out operating to open, isolate and earth the relevant equipment up to and including Handover.			

	Yes	No	N/A
• Correctly write out operating to hand back, to remove earths, link isolate and close breakers and switch on protection.			
• No two instructions on the same line.			
• No open lines between operating instructions.			
• No other persons working within yard while operating.			
OPERATING			
• Contact control and discuss operating.			
• Receive instructions and read it back to control.			
• Confirm operating time & sign at the bottom of operating sheet.			
• Confirm if at correct Isolators / Breaker / Transformer before operating commences.			
• Is switching procedure adhered to as per ORHVS?			
• Attach Prohibitory sign on panel.			
• Instructions ticked off step-by-step.			
• Indicate opening and closing times of Breakers / Isolators.			
• Hand back to control after operating steps is completed.			
• Abnormal board / mimic board to updated.			
SAFETY TESTING & EARTHING			
• Take operating for earthing.			
• Select correct number of earths required for the operation.			
• Assistants helping with the application of the earths must be advised of what is to be done.			
• Fit approved tester to specific voltage on operating stick.			
• Test-approved testing device on live equipment before all testing operations (Live, Dead, Live)			
• Apply the earths firmly in position.			
• Make sure the assistant do not touch earth directly when already applied to earth/line.			
• Close earth switch / open earth switch.			
BARRICADING			
• Equipment to be worked on effectively barricaded.			
• Barricading not attached directly onto live structures (Effective use of stand-off brackets)			
• Workmen erecting barricading to be under supervision of an Appointed operator.			
• Danger signs are attached on barricading facing inwards toward work area.			

	Yes	No	N/A
• Barricading must control movement of people.			
HANDOVER / HAND BACK			
• Contacts Control and takes a handover and note times on operating sheet.			
• Contacts Control and takes a handover and note times on operating sheet.			
• Contacts Control and hand back handover and note times on operating sheet.			
PERMITS / WORKERS REGISTER			
• Permits and Workers Register completed correctly.			
• Did the appointed operator check that the responsible person is authorised to accept a permit?			
• Confirm special endorsements and make sure they are understood.			
• Return permit & sign off accordingly after work has been done.			
SUPERVISION			
• Correct level of Supervision identified Level of Supervision ……			
• Correct level of Supervision maintained.			
Always maintain clearances knowledge of minimum Safety clearance as per the ORHVS.			
• 132 kV = 2.0 m • 66 kV = 1.3 m			
• 88 kV = 1.5 m • 1 kV up to 44 kV = 1.0 m			
EQUIPMENT RETURNED TO SERVICE			
• Check all staff are removed from the HV Yard and sign clearance section of permit/Workers declaration.			
• Dismantle all barricading.			
• Clear all permits.			
• Clear all fault indications on panel.			
• Confirm status of plant.			
• Contact control and discuss operating.			
• Get instructions to remove all earths.			
• Get instructions to clear link and close.			
• Switch on protection.			
• Report back operating to control stating times and details.			
• Complete trip advances in logbook.			
• Confirm all operating keys back in cabinet.			
• Abnormal board / mimic board to updated.			

Documents for collection			
Pre Plan		Operating sheet	
Risk assessment		Works order	
Person observed		Signature	

REMARKS/COMMENTS	
Scope of Work:	
Work Order number/ Outage ID:	
OBSERVED BY	
Name:	Designation:
Signature:	Date:

Annex BB – Authorised Person Observation for Low Voltage

Eskom	**AUTHORISED PERSON OBSERVATION for LOW VOLTAGE**	**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

PERSON BEING OBSERVED DETAILS:			
Name:		**Unique/ID Number:**	
Workstation:		**Date:**	
Location:		**Activity**	

Note: Each No answer must have remark on last page

PRELIMINARIES	**Yes**	**No**	**N/A**	**Remarks**
• Before operating check condition / clean operating stick.				
• Confirm correct tester as per voltage.				
• Is there a Fire Extinguisher and a First Aid Box on site?				
• Confirm class 0 glove been tested from lab as per cycle.				
• Are the correct measuring instruments selected and is it calibrated?				
• Is there a FAS available on site and inspected?				
• FAS rescue kid available on site and inspected?				
• Has the ladder / MEWP / Climbing shoes inspected before use?				
• Correct Protective Clothing (Hard hat, Operating Jacket, Long Pants, Safety Shoes working gloves, 1000 Volts Gloves and face shield)				
PRE - EXECUTION OF WORK				
• Has the pole been inspected before climbing?				
• Is the task manual read and or discussed with the team members on site? Task manual number ……				
• Check condition of equipment that will be affected by the operating.				
• Check correct labelling of apparatus / Address.				
RISK ASSESSMENT				
• Has the scope of work been discussed with all workers?				
• Risk assessment conducted prior to starting work.				

	Yes	No	N/A	Remarks
• Sufficient steps taken to minimize the risks.				
• All workers informed of the risks.				
• Worker's register completed.				
BARRICADING				
• Equipment to be worked on effectively barricaded.				
• Barricading must control movement of people.				
SUPERVISION				
• Correct level of Supervision identified. Level of Supervision ……				
• Correct level of Supervision maintained				
EXECUTION OF WORK				
• Is switching procedure adhered to as per LVOR?				
• Has the correct measuring / testing equipment been used?				
• Has the correct tools / equipment been used?				
• Assistants helping with the task must be advised of what is to be done.				
• Have all tasks been performed as per task manual/standard.				
PERMITS / WORKERS REGISTER				
• Permits and Workers Register completed correctly.				
• Did the authorised person check that the responsible person is authorised to accept a permit?				
• Confirm special endorsements and make sure they are understood.				
• Return permit & sign off accordingly after work has been done.				
EQUIPMENT RETURNED TO SERVICE				
• Check all staff are removed from the site and sign clearance section of permit/Workers declaration.				
• Clear all permits.				
• Confirm the status of plant.				
• Has the plant been returned to service as per LVOR.				
• Has the correct documentation been completed.				

DOCUMENTS FOR COLLECTION			
Pre Plan		Meter movement form	
Risk assessment		In / out commission sheet	
Works order		Any other documents	
OBSERVED PERSON			
Person observed:		Signature:	
OBSERVED BY			
Name:		Designation:	
Signature:		Date:	
REMARKS/COMMENTS			

Annex CC - Controller On-Job Observations

Eskom	CONTROLLER ON-JOB OBSERVATIONS	Template Identifier		Rev	
		Document Identifier		Rev	
		Effective Date			
		Review Date			

NOTE: This form must be signed by both the Assessor/Auditor and Controller. Original must be signed and put in portfolio files and a copy to be given to Controller.

☺ = 5 Points ☹ = 3 Points ☹ = 1 Points Controller's Name: ……

No.	Activity / Task / Skill / Competency being analysed	☺	☹	☹	Comments for Further Action
01	**Response time**				
	Time taken to answer the phone				
	Time taken to react to alarms				
	Alarm pages, acknowledge & purging				
02	**Scope of work discussions**				
	Discussion to the point (no wavering of facts)				
	No wasting time on unnecessary / personal / irrelevant issues				
	Communication with relevant parties				
	Adherence to scope of work discussion when issuing instruction				
03	**Operating**				
	Issuing Operating instructions in correct sequence (240-75909223)				
	Operating according the ORHVS				
	Use of approved abbreviations (ORHVS)				
	Adhering to operating guidelines and procedures				
	Operating with other control centres				
	Operating zones and demarcations				
04	**Checking Ops comments, Abnormalities, EPP's, etc**				
	Check, adhere to Ops comments and application from Phoenix				
	Abnormalities of station on ABB System				
	Retrieve EPP where outage requires one in hand				

No.	Activity / Task / Skill / Competency being analysed	☺	😐	☹	Comments for Further Action
05	**Logging**				
	Legibility				
	Date on log sheet				
	Operators name and surname on log sheet				
	Operators phone number on log sheet				
	Controllers name and surname on log sheet				
	FMS / Phoenix event and WO number on log sheet				
	Abnormality recorded on log sheet				
	Description of fault recorded				
	Correct plant recorded on log sheet				
	Memo numbers recorded on log sheet				
	Immediate action of urgent alarms				
06	**Dressing (SCADA/PAPER DIAGRAMS)**				
	Hand-Outs, Operator's, Inter-Regions & Reg 5.9.2				
	Breakers & Links; Opened & Closed				
	Line alive back (LAB)				
	Tagging, manual and inhibit (dressing)				
	Correct tags, correct positions, & timeous updates				
	Correct logging of earths				
	Checking and introducing of patches (new plant)				
07	Updating of Fault Management System (FMS/PHOENIX)				
	Ability to make plant:(a) taken/Actual (b) not taken (c) postponed/reschedule(d) cancelled (e) NOFELCA				
	Ability to extend an outage and identify which stakeholders to notify (Awareness/knowledge of the procedure)				Does not have authority to extend dates on outages
	Ability to create an event in fault conditions				
	Dispatching process				
	Escalation process				
08	**Fault Capturing & Sharing of information**				
	Right equipment to capture on fault reports				

No.	Activity / Task / Skill / Competency being analysed	☺	😐	☹	Comments for Further Action
	Retrieval of fault reports				
	Correct capturing of information				
	Stay outs captured correctly				
	Points				

OVERALL ASSESSMENT SCORE	TOTAL=……(PASS MARK = 90 %)
	COMMENTS BY ASSESSOR

	Name	Signature
Observer		
Candidate		
Date		

Annex DD – Authorisation Course Pre-Requisites and Course Criteria

Eskom	**AUTHORISATION COURSE PRE-REQUISITES AND COURSE CRITERIA**	**Template Identifier**		**Rev**	
		Document Identifier		**Rev**	
		Effective Date			
		Review Date			

General			
No	**Course Name**	**Prerequisites**	
1	Health, Safety and Quality at the Workplace PRE 02a	None	3 days
2	High Voltage Environment and Regulations Awareness HVA 01	None	1.5 days
3	Fundamentals of Electricity L2C 01 (Must complete assessment A and B to be certified)	Grade 10 with Mathematics and Science	10 days
Medium Voltage Operating Training Curriculum			
4	Supervision in Electrical Hazardous Areas ELW 001	• ORHVS Awareness HVA 01 • Pre-Job Planning and Risk Assessment PRE 02b / HIRA	1.5 days
5	Equipotential Earthing Level 2 OL2 02	• ORHVS Awareness HVA 01 • Pre-Job Planning and Risk Assessment PRE 02b / HIRA	3 days
6	ORHVS Level 1 HVO 1 (Access And Supervision)	• ORHVS Awareness HVA 01 Or • Previous ORHVS certificate • Pre-Job Planning and Risk Assessment PRE 02b / HIRA	1 day
7	ORHVS Level 2 HVO 2 (Responsible Person)	• ORHVS HVO 01 • Supervision of People in Hazardous Areas ELW 001 • Pre-task planning and Risk Assessment PRE 02b / HIRA	1 day
8	ORHVS Level 4 HVO 4 (Appointed Operator)	• ORHVS HVO 02 and • Equipotential Earthing Level 2 OL2 02 and • Electrical Qualification Or • Current and Valid MV Authorisation. Or • Fundamentals of Electricity Or • NTC 3 in Electrical Trade Theory	3 days

9	PTO&W and PTS OL4 002	• ORHVS HVO 04	1.5 days
10	Basic Power System Protection STO ESTO 012	• Fundamentals of Electricity Or • NTC 3 in Electrical trade theory Or • Electrical Qualification And • Outcome 2 Authorised	2.5 days
11	Basic Power System Protection PTO EPTO 021	• Fundamentals of Electricity Or • NTC 3 in Electrical trade theory Or • Electrical Qualification And • Outcome 4b or higher authorised And • Basic Power System Protection STO ESTO 012	2.5 days
12	Operate on Medium voltage networks (11kV-44Kv) L4E 11	• ORHVS HVO 04 • Basic Power System Protection STO ESTO 012 • Outcome 2	4 days
13	Operate on High voltage networks (66kV-132Kv) L4E 12	• Operate on Medium voltage networks (11kV-44Kv) L4E 11 • Basic Power System Protection STO ESTO 012 and PTO EPTO 021 • Outcome 4b	4 days
14	Phasing 110V to 132kV ESTO 004 (Theory only)	• Outcome 4b	1.5 days

Low Voltage Operating Training Curriculum			
15	Low Voltage Operating Regulations LVOR 001	• Electrical measuring instruments Or • Electrical Qualification Or • NTC 3 in Electrical Trade theory Or • Valid LV Operator authorisation And • Pre-task Planning and Risk Assessment PRE 02b / HIRA • Supervision in electrical hazardous areas (ELW 001)	2 days
16	Operate on Low Voltage Networks LVOP 001	• Fundamentals of Electricity Or • Electrical Qualification Or • NTC 3 in Electrical Trade theory Or • Valid LV Operator Authorisation And • LV Operating Regulations LVOR 001 • Pre-task Planning and Risk Assessment PRE 02b / HIRA • Working at Heights • Ladder Safety • Supervision in electrical hazardous areas (ELW 001)	4 Days
17	MV & LV crimping ELW 5	• PRE 02(a) Health, safety, and quality at work • HVA 001 High voltage environment and regulations awareness • PRE 002 Pre-task planning and risk assessment L2C 02 And • Use and care of hand tools. Or • Relevant Trade	5 Days
18	Low Voltage Cables ELW 012	• PRE 02(a) Health, safety, and quality at work • HVA 001 High voltage environment and regulations awareness • PRE 002 Pre-task planning and risk assessment and • Use and care of hand tools. Or • Relevant Trade	7 Days

19	Low Voltage Line Construction ELW 011	• Low Voltage Cables ELW 012 • MV & LV Crimping ELW 005 • PRE 02(a) Health, safety, and quality at work • HVA 001 High voltage environment and regulations awareness • PRE 002 Pre-task planning and risk assessment • Ladders safety and Working at Heights • L2C01 Understand the fundamentals of electricity	10 Days
20	Performing Work on Energized (LV) Networks L3E 06	• Fundamentals of Electricity Or • Electrical Qualification Or • NTC 3 in Electrical Trade theory Or • Valid LV Operator authorisation And • LV Line Construction ELW 011 • Operate on Low Voltage Networks LVOP 001 • Split Pre-paid metering OTO 06g • LV Operating Regulations LVOR 001 • Pre-task Planning and Risk Assessment PRE 02b / HIRA • Working at Heights • Ladder Safety • Supervision in electrical hazardous areas (ELW 001)	5 days

Medium Voltage Training Curriculum			
21	Inspection and Acoustic Testing of wood poles MVLM 002	• Pre-task Planning and Risk Assessment PRE 02b / HIRA • ORHVS Awareness HVA 01	3 Days
22	MV Line Inspection MVLM 001	• MV Line Construction (part 25) Or • 5 Years MV Authorised at least outcome 4(b) or higher	5 days

23	Earth Electrode Resistance Testing (Lines) ELW 010	• Fundamentals of Electricity Or • Electrical Qualification • If no qualification Electrical Measuring Instruments	2 days
24	Inspect and Clean Substation Yards SSM 001 and SSM 010	• Valid Authorisation Outcome 5 • Basic Power System Protection STO ESTO 012 • Basic Power System Protection PTO EPTO 021	5 days
25	Maintain Substation Earthing System SSM 007	• Electrical Measuring instruments Or • Relevant electrical qualification • Valid Authorisation for Access	4 Days

Low Voltage Training Curriculum			
26	LV Line Inspection L2E 06	• LV Line Construction ELW 011 Or • 5 years LV authorised as a LV Operator	4 days
27	Split Pre-paid Metering OTO 06g	• LV Operating Regulations LVOR 001 • Operate on Low Voltage Networks LVOP 001 • Pre-task Planning and Risk Assessment PRE 02b / HIRA	3 days