

Title: **PULLING / STRAIGHTENING
UP LEANING POLES**

Unique Identifier:

34-2249

Part

11 - Maintenance

Area of Applicability:

Distribution

Documentation Type:

Task Manual

Revision:

0

Total Pages:

21

Next Review Date:

As Required

Disclosure Classification:

CONTROLLED DISCLOSURE

Compiled by



Bossie Uys

Senior Supervisor

Date: 09/09/2011

Approved by

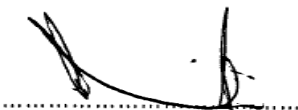


David Ntombela

Consultant

Date: 09/09/2011

Functional Responsibility

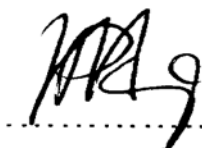


Colin Smith

DTEP Manager

Date: 12/09/2011.

Authorized by



Prince Moyo

Corporate Manager Divisional Technology

Date: 21/09/2011

Content

	Page
Foreword.....	3
Introduction	4
Bibliography	4
1 Scope	4
1.1 Purpose	4
1.2 Applicability.....	4
2 Normative/Informative References	4
2.1 Normative References	4
2.2 Informative References	5
3 Definitions and abbreviations.....	5
3.1 Definitions	6
3.2 Abbreviations	6
4 Requirements.....	7
4.1 Roles and Responsibilities	7
4.2 Pre-Planning.....	7
4.3 Task Execution	8
5 Forms and Records Documents	12
Annex A - Critical Task Observation / Risk Assessment.....	13
Annex B-Impact assessment.....	18

**PULLING / STRAIGHTENING UP LEANING
POLES**Unique Identifier: **34-2249**Type: **DMN**Revision: **0**Page: **3 of 21****Foreword**

“The document was compiled to comply with the OHSAct and NRS082 requirements and to document the tasks procedure for pulling / straightening up leaning poles to ensure that maintenance tasks are carried out in a safe manner.”

Revision history

This is the first addition / revision of the task Manual referenced **DMN_34-2249**.

Date	Rev.	Compiled By	Clause	Remarks
Sept 2011	0	DM Ntombela / JJB Uys	-	First issue of the document.
			4	Document referenced no DMN_34-2249

Authorisation

This document has been seen and accepted by:	
Name	Designation
P Moyo	Corporate Manager Divisional Technology
CD Smith	DTEP Manager
D Ntombela	Consultant
JJB Uys	Senior Supervisor

Development team

This task manual was prepared by:

NAME	DESIGNATION	DEPT/REGION
DM Ntombela	Consultant	IARC-DTEP
GPN Kruger	O F S	Western Region
SP De Bruin	Senior Supervisor	Central Region
F Van Jaarsveld	O F S	Eastern Region
DFB Lötter	O F S	Western Region
JE van Wyngaard	Senior Supervisor	Southern Region
JJB Uys (Chairperson)	Senior Supervisor	North Western Region
JJN Steenkamp	O F S	Central Region
HJ Martens	Senior Supervisor	Western Region
DM Ntombela	Consultant	IARC-DTEP
PA Pretorius	OFS MEW	Central Region
HCJ Nuttall	Senior Supervisor	North Region
P van der Westhuizen	Senior Supervisor	Southern Region
P Diedericks	SHE Officer	North Western Region

ESKOM COPYRIGHT PROTECTED

**PULLING / STRAIGHTENING UP LEANING
POLES**Unique Identifier: **34-2249**
Type: **DMN**
Revision: **0**
Page: **4 of 21**

S Delport	SHE Officer	North Region
P Ramosili	Field Services Engineer	North West Region
M Lakhan	O F S	Eastern Region
M Thanjekwayo	Group Risk Specialist – Policies & Procedures	Distribution Risk Management

Introduction

This Task Manual is compiled to formalize the task steps for Pulling / Straightening Up Leaning Poles to be carried out by distribution Business on behalf of Eskom Distribution Division. The document includes the latest updates in information, format, safety precautions from the task analysis to that the task are carried out in a safe manner.

Keywords

Dam; Oil; Step; Manual; Task; Ladder; Vehicle; Maintenance; and Procedure.

Bibliography

N/A

1 Scope

1.1 Purpose

The purpose of this task manual is to standardize the procedure followed when performing Pulling / Straightening Up Leaning Poles.

The purpose of this document is also to provide persons carrying out Pulling / Straightening Up Leaning Poles task with a step by step description of how to do the task, including the most critical hazards and technical specifications associated with the task.

1.2 Applicability

This Task Manual is applicable to Eskom Distribution Division and the contractors employed by the Unit.

2 Normative/Informative References

Parties using this document shall apply the most recent edition of the documents listed below:

2.1 Normative References

Occupational Health and Safety Act and Regulations (OHSAct);

EPC_32-846: Rev 0, *Operating Regulations for High Voltage Systems*;

DST_34-1462: Rev. 0, *Standard For The Care, Use, Inspection And Maintenance Of Conductive And Non Conductive Ladders*;

ESKOM COPYRIGHT PROTECTED

DPC_34-908: Rev. 0, *Procedure for Barricading;*

DISASABW3: Rev 2, *Distribution Standard On Fall Arrest Systems;*

DST_34-1462: Rev 0, *Standard For The Selection, Care, Use, Inspection And Maintenance Of Conductive And Non-Conductive Ladders;*

DST_34-1441: Rev 0, *Routine line inspection and maintenance of Reticulation lines;*

DPC_34-444: Rev 0, *The Procedure for Use and Maintenance of Portable Earthing Gear;*

SCSASABK8 (DST_34-1209): Rev 0, *Soil Compaction For Stay And Pole Foundations;*

DST_34-445: Rev 0, *Standard for the Use of Equipontential Earth footplates; and*

SCSPVACL6 (DPC_34-1402): Rev 0, *Procedure For Using A Fall Arrest System;*

2.2 Informative References

DGL_34-190: Rev 0, *Access to Farms (includes Strategy on dealing with game farms);*

EPC_32-418: Rev 0, *Working AT Heights;*

DPC_34-955: Rev 0. *Procedure for refusal to work on the grounds of health, safety and environmental concerns;*

DPC_34-227: Rev. 0, *Pre-Task Planning and feedback process;*

DST_34-1005: Rev. 0, *Environmental management policy;*

DPC_34-925: Rev 0, *Procedure for refusal to work on the grounds of health, safety and environmental concerns;*

EPC_32-247: Rev 0, *Procedure for Vegetation Clearance and Maintenance within Overhead Power Line Servitudes and on Eskom Owned Land;*

DPC_34-04: Rev 0, *Procedure For The Preparation And Administration Of Distribution Standards; and*

Manufacturers manual.

3 Definitions and abbreviations

Refer to definitions and abbreviations listed in recognised industry glossaries such as NRS 000 and the IEV and the following definitions and abbreviations are also applicable.

3.1 Definitions

All definitions in EPC_32-846 and OHSAct 85 of 1993 including the following are applicable:

Task Analysis: The systematic examination of all dangerous/hazardous tasks (work) in order to identify and quantify all the potential and existing inherent hazards that employees are exposed to while the tasks are being executed.

Risk Assessment: This process involves the combined functions of hazards identification, risk analysis, risk evaluation, determining the risk control strategy/s and the identification of the risk control measures that will be implemented during the task execution.

Dangerous/hazardous task: A specific element of work, which has produced and/or which possesses the potential to produce major loss or harm to people, assets, processes/production and/or the environment when performed properly.

Directive: A document which sets out a management objective, the appropriate policy if deemed necessary, as well as the functional accountability for activities to achieve that objective and the interface between functions affected by, or responsible for the execution of, such activities.

Authorised person: Means a person, whether an employee or another person, who has been authorised in terms of these regulations.

NOTE: Only persons who have satisfied the designated person in terms of the Occupational Health and Safety Act (Act 85 of 1993) (General Machinery Regulation 2(1)) that their knowledge is adequate to perform specific duties on specified plant and that their knowledge of these regulations is sufficient may be authorised.

3.2 Abbreviations

CCC: Change Control Committee.

CDP: Career Development Programme;

CO: Construction Official;

EPC_32-846: Operating Regulations for High Voltage Systems (**ORHVS**).

GMR: General Machinery Regulation

PCO: Principal Construction Official;

PML: Pedestal Mounted Ladder

PPE: Personal Protective Equipment;

PTO: Principal Technical Official;

SCO: Senior Construction Official;

STO: Senior Technical Official;

TO: Technical Official;

TSC: Technical Service Centre;

TsPO: Technical Specialist; and

TSU: Technical Services Unit;

4 Requirements

4.1 Roles and Responsibilities

The designated person or his delegate shall ensure that this procedure is implemented and adhered to. The authorised / responsible person is responsible for the safe execution of all work and activities as set out in this procedure.

4.2 Pre-Planning

4.2.1 Spares and Materials

- a) N/A

4.2.2 Tools and Equipment

- a) Pedestal Mounted ladder.

4.2.3 Personal Protective Equipment

All personal protective equipment shall be in accordance with DST_34-1710 and PPE identified from Risk assessment (DPC_34-227) performed.

- a) Hard Hat (work at height);
- b) FAS including the rescue kit;
- c) Safety boots; and
- d) Gloves.

4.2.4 Safety and Preparation

- a) Ensure that where long distances are travelled when going to work site preparations are done and guidelines given in DGL_34-256, EPC_32-93 and DMN_34-2210 are observed.
- b) Ensure that the panel/equipment to be worked is isolated and earthed in accordance with EPC_32-846.
- c) Ensure that the apparatus to be worked on is barricaded in accordance with DPC_34-908.
- d) Ensure that when visiting the work site the general inspection is done as per DMN_34-2208.
- e) Ensure that when work has to be done 2m above ground FAS and ladder usage procedures (DWN_34-101 and DISASABW3) and shall be used.
- f) Do an assessment to determine the scope of work and the resources that would be required (people, PPE, equipment, etc) as per DPC_34-227.
- g) Inspect at least 3 structures either sides of the leaning structure.

- h) Inspect the structure conductors, insulators and the hardware conditions.
- i) Inspect the condition work site versus the scope of work
- j) Determine if the task can be carried out safely, the direction of pulling, method to be used to pull ie manual pulling with rope or using mechanical equipment.
- k) Perform a proper risk assessment before task commencement or continuously during task execution in accordance with the prescribed procedure and ensure that all members of team are included when performing risk assessment (refer to the form attached for information).

4.3 Task Execution

4.3.1 Manual method of straightening the pole under LIVE Conditions

NOTE 1: All personnel tasked to straighten poles in the network using methods covered in this document shall carry out the tasks as per this document.

NOTE 2: Workers involved in straightening the structure / poles must concentrate on the task at hand so that they can react to any prevailing situation.

NOTE 3: Using ropes shorter than the length of the pole being straightened will expose staff danger should the pole break as they will be in close proximity to it.

NOTE 4: In order to limit the amount of tension / force used in straightening the pole the hole must be slotted to ensure easy movement..

NOTE 5: Jerking the pole when straightening it will result in conductors whipping / clashing or breaking other poles.

- a) Anchors/ regulation
- b) Securing ropes at the top of the pole
- c) Attach two ropes either sides of the pole.
- d) Using the operating stick raise the ropes to the upper third of the pole from ground level.

NOTE 1: Ensure that the people pulling and controlling ropes are at distance twice the height of the pole.

NOTE 2: Ensure that pulling of the pole is done smoothly and no jerking should be allowed, this could lead to clashing of conductors at midspan.

- e) Tension the ropes to support the pole.

NOTE 3: Where the soil around the pole is soft the pole could just be straightened buy pushing / pulling it without any excavation.

- f) Excavate / slot the hole on the side in the direction of pull (opposite to direction the pole is leaning towards).
- g) Pull the pole to the up-right position.
- h) Use plumb bob to check the straightness of the pole.
- i) Compact the soil around the pole in accordance to SCSASABK8 (DST_34-1209).
- j) Remove the ropes and clear the worksite

ESKOM COPYRIGHT PROTECTED

4.3.2 Mechanical method of straightening the pole under Live Conditions

NOTE 1: Ensure that pulling/pushing of the pole is done smoothly and no jerking should be allowed, this could lead to clashing of conductors at midspan.

- a) Take hand over from control for the live line in terms of regulation 5.03.6.3.
- b) Attach the sling at the bottom of the pole.
- c) Hook the sling to the crane.
- d) Guide the sling upwards along the pole with the crane but ensure that safe work clearance is not encroached.
- e) Tension the sling to support the pole.
- f) Slot the pole hole by excavating the side in the direction of pull (opposite the direction that the pole is leaning towards).
- g) Pull the pole to the up-right position.
- h) Use plumb bob to check the straightness of the pole.
- i) Compact the soil around the pole in accordance to SCSASABK8 (DST_34-1209).
- j) Slowly release the tension of the sling and unhook the sling from the crane.
- k) Remove the slings from the pole and clear the worksite

4.3.3 Manual method of straightening the pole under DEAD Conditions**4.3.3.1 Scenario 1: Pole is leaning in line**

- a) Ensure that the line is isolated and earthed as per ORHVS.
- b) Take the line hand-over from control.
- c) Attach four ropes on the pole.
- d) Using the operating stick raise the ropes to the upper third of the pole from ground level to stabilize the pole.
- e) Using FAS ascend up the pole and loosen the conductor binding wires (wrap-lock ties).
- f) Remove conductors from the insulators.

NOTE 1: Ensure that the people pulling and controlling ropes are at distance twice the height of the pole.

NOTE 2: Ensure that pulling of the pole is done smoothly and no jerking should be allowed.

NOTE 3: Where the soil around the pole is soft the pole could just be straightened buy pushing / pulling it without any excavation.

- g) Slot the pole hole by excavating the side in the direction of pull (opposite to direction the pole is leaning towards).

**PULLING / STRAIGHTENING UP LEANING
POLES**

Unique Identifier: **34-2249**
Type: **DMN**
Revision: **0**
Page: **10 of 21**

- h) Pull the pole to the up-right position.
- i) Use plumb bob to check the straightness of the pole.
- j) Compact the soil around the pole in accordance to SCSASABK8 (DST_34-1209).
- k) Ascend up the pole and re-bind the conductors on the insulators.
- l) Remove the ropes, descend from the pole and clear the worksite.

4.3.3.2 Scenario 2: Pole is leaning sideways

- a) Ensure that the line is isolated and earthed as per ORHVS.
- b) Take the line hand-over from control.
- c) Attach two ropes on the pole and the ropes must be attached at the upper third of the pole from ground level to stabilize the pole.

NOTE 1: Ensure that the people pulling and controlling ropes are at distance twice the height of the pole.

NOTE 2: Ensure that pulling of the pole is done smoothly and no jerking should be allowed.

NOTE 3: Where the soil around the pole is soft the pole could just be straightened buy pushing / pulling it without any excavation.

- d) Slot the pole hole by excavating the side in the direction of pull (opposite to direction the pole is leaning towards).
- e) Pull the pole to the up-right position.
- f) Use plumb bob to check the straightness of the pole.
- g) Compact the soil around the pole in accordance to SCSASABK8 (DST_34-1209).
- h) Remove the ropes and clear the worksite.

4.3.4 Mechanical method of straightening the pole under Dead Conditions

NOTE 1: Ensure that pulling/pushing of the pole is done smoothly and no jerking should be allowed.

4.3.4.1 Scenario 1: Pole is leaning in line (move the head of the pole)

- a) Ensure that the line is isolated and earthed as per ORHVS.
- b) Take a hand over from control in terms of regulation 5.03.6.3.
- c) Attach the sling at the bottom of the pole.
- d) Hook the sling to the crane.
- e) Guide the sling upwards along the pole with the crane.
- f) Tension the sling to stabilize the pole.
- g) Using FAS ascend up the pole and loosen the conductor binding wires (wrap-lock ties).

ESKOM COPYRIGHT PROTECTED

**PULLING / STRAIGHTENING UP LEANING
POLES**Unique Identifier: **34-2249**Type: **DMN**Revision: **0**Page: **11 of 21**

-
- h) Descend from the pole.
 - i) Slot the pole hole by excavating the side in the direction of pull (opposite the direction that the pole is leaning towards).
 - j) Pull / push the pole to the up-right position.
 - k) Use plumb bob to check the straightness of the pole.
 - l) Compact the soil around the pole in accordance to SCSASABK8 (DST_34-1209).
 - m) Ascend up the pole and re-bind the conductors on the insulators.
 - n) Descend from the pole.
 - o) Slowly release the tension of the sling and unhook the sling from the crane.
 - p) Remove the slings from the pole and clear the worksite

4.3.4.2 Scenario 2: Pole is leaning in line (Correcting the pole foot)

- a) Ensure that the line is isolated and earthed as per ORHVS.
- b) Take a hand over from control in terms of regulation 5.03.6.3.
- c) Attach the sling at the bottom of the pole.
- d) Hook the sling to the crane.
- e) Guide the sling upwards along the pole with the crane.
- f) Tension the sling to stabilize the pole.
- g) Attach two guide ropes at the foot of the pole.
- h) Lift the pole with crane and clear or excavate the hole.
- i) Guide foot of the pole to the hole position and lower pole into the hole.
- j) Use plumb bob to check the straightness of the pole.
- k) Remove the guide ropes.
- l) Compact the soil around the pole in accordance to SCSASABK8 (DST_34-1209).
- m) Slowly release the tension of the sling and unhook the sling from the crane.
- n) Remove the slings from the pole and clear the worksite

NOTE 1: Ensure that pulling/pushing of the pole is done smoothly and no jerking should be allowed, this could lead to clashing of conductors at midspan.

4.3.5 Task wrap up

NOTE 1: Ensure that work site is cleaned when the work is completed.

- a) Complete and submit required documentation.
- b) Restore site.

5 Forms and Records Documents


The attached report and the following forms shall form the record of work done.

- a) Work orders (if applicable).
- b) Written Pre-planning form.
- c) Workers register / Permit (if applicable).
- d) Risk Assessment form.

The completed report must be returned to the Work Co-ordinator together with the work order and a copy to the Technical Services Group.

**PULLING / STRAIGHTENING UP LEANING
POLES**Unique Identifier: **34-2249**Type: **DMN**Revision: **0**Page: **13 of 21****Annex A - Critical Task Observation / Risk Assessment**

(Normative)

	FORM TITLE	Critical Task Observation / Risk Assessment			
	FORM NUMBER	34-2249	REV DATE	AS REQUIRED	
	DOCUMENT TITLE	Pulling / Straightening Up Leaning Poles			
SITE/LOCATION:					
WORK DESCRIPTION:					
BASIC STEPS	SAFETY STEPS	CRITICAL STEPS	STEPS FOLLOWED		
			YES	NO	N/A
Pre-job planning	<ul style="list-style-type: none"> Assessment at the site. Planning work and resources 	<ul style="list-style-type: none"> Validity of the authorization 			
		<ul style="list-style-type: none"> Adequately equipped Vehicle (fire extinguisher, first aid box, tools, equipment, etc) 			
		<ul style="list-style-type: none"> Knowledge of area, environment, equipment. 			
Risk assessment	<ul style="list-style-type: none"> On site risk assessment prior to commencement of work and continuous during the task execution 	<ul style="list-style-type: none"> Risk assessment correctly done 			
		<ul style="list-style-type: none"> Sufficient visibility 			
		<ul style="list-style-type: none"> Proper risk assessment conducted before task commencement. 			
		<ul style="list-style-type: none"> Continuous evaluation of risk during task execution 			
		<ul style="list-style-type: none"> Identified critical risks Minimised or mitigated. 			
PPE Overall Safety boots, Hard hat, Fall Arrest System, Rain wear, Gloves and Sunglasses	<ul style="list-style-type: none"> Use the correct PPE throughout 	<ul style="list-style-type: none"> Inspect PPE and equipment before usage 			
		<ul style="list-style-type: none"> Ensure that Appropriate PPE and safety equipment are worn/used during execution of the task. 			
Arrival on site	<ul style="list-style-type: none"> Position the vehicle at the work site 	<ul style="list-style-type: none"> Safe / Correct positioning of vehicle 			
Straightening up a pole where excavation is not necessary to straighten the pole under live conditions	<ul style="list-style-type: none"> Attach two ropes either sides of the pole. Using the operating stick raise the ropes to the upper third of the pole from ground level. Pull the pole to the up-right position. Use plumb bob to check the straightness of the pole. Compact the soil around the pole in accordance to SCSASABK8 (DST_34-1209). Remove the ropes and clear the worksite 	<ul style="list-style-type: none"> Ensure that the clearances are adhered to. 	•	•	•
		<ul style="list-style-type: none"> Ensure that two ropes are used for pulling and controlling when straightening pole that is still attached to the conductor 	•	•	•
		<ul style="list-style-type: none"> Follow the compaction method as it is stipulated in SCSASABK8 (DST_34-1209). 	•	•	•
Straightening up a pole where excavation is necessary to	<ul style="list-style-type: none"> Attach two ropes either sides of the pole. 	<ul style="list-style-type: none"> Ensure that the clearances are adhered to 	•	•	•

ESKOM COPYRIGHT PROTECTED

PULLING / STRAIGHTENING UP LEANING POLES

Unique Identifier: **34-2249**

Type: **DMN**

Revision: **0**

Page: **14 of 21**

<p>straighten the pole under Live conditions</p>	<ul style="list-style-type: none"> Using the operating stick raise the ropes to the upper third of the pole from ground level Tension the ropes to support the pole. Excavate / slot the hole on the side in the direction of pull (opposite to direction the pole is leaning towards). Pull the pole to the up-right position. Use plumb bob to check the straightness of the pole. Compact the soil around the pole in accordance to SCSASABK8 (DST_34-1209). Remove the ropes and clear the worksite 	<ul style="list-style-type: none"> Ensure that two ropes are used for pulling and controlling when straightening pole that is still attached to the conductor 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
		<ul style="list-style-type: none"> Stabilize the pole by tensioning it before excavation is done 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
		<ul style="list-style-type: none"> Follow the compaction method as it is stipulated in SCSASABK8 (DST_34-1209). 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
<p>Mechanical method of straightening the pole under Live Conditions</p>	<ul style="list-style-type: none"> Take LIVE hand over from control in terms of regulation 5.03.6.3. Attach the sling at the bottom of the pole. Hook the sling to the crane. Guide the sling upwards along the pole with the crane but ensure that safe work clearance is not encroached. Tension the sling to support the pole. Slot the pole hole by excavating the side in the direction of pull (opposite the direction that the pole is leaning towards). Pull the pole to the up-right position. Use plumb bob to check the straightness of the pole. Compact the soil around the pole in accordance to SCSASABK8 (DST_34-1209). Slowly release the tension of the sling and unhook the sling from the crane. Remove the slings from the pole and clear the worksite 	<ul style="list-style-type: none"> Ensure that the apparatus is handed over by Control before any work commences 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
		<ul style="list-style-type: none"> Ensure that the correct sling is used and the clearances are adhered to when attaching it. 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
		<ul style="list-style-type: none"> Stabilize the pole by tensioning it before excavation is done 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
		<ul style="list-style-type: none"> Follow the compaction method as it is stipulated in SCSASABK8 (DST_34-1209). 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
		<ul style="list-style-type: none"> The sling is under tension when the pole is being straightened up therefore slowly release the tension when removing the sling. 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
<p>Where excavation is not necessary to straighten the pole under Dead Conditions– Pole is leaning sideways.</p>	<ul style="list-style-type: none"> Ensure that the line is isolated and earthed as per ORHVS. Take the line hand-over from control. Attach two ropes on either sides of the pole. Using the operating stick raise the ropes to the upper third of the pole from ground level. Pull the pole to the up-right position. Use plumb bob to check the straightness of the pole. Compact the soil around the pole in accordance to SCSASABK8 (DST_34-1209). Remove the ropes and clear the worksite. 	<ul style="list-style-type: none"> Check that the line is OPEN, ISOLATED, SAFETY TESTED and EARTHED. 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
		<ul style="list-style-type: none"> Ensure that the apparatus is handed over by Control before any work commences 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
		<ul style="list-style-type: none"> Ensure that two ropes are used for pulling and controlling when straightening pole that is still attached to the conductor 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
		<ul style="list-style-type: none"> Follow the compaction method as it is stipulated in SCSASABK8 (DST_34-1209). 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
<p>Where excavation is not necessary to straighten the pole under Dead Conditions – Pole is leaning in line.</p>	<ul style="list-style-type: none"> Ensure that the line is isolated and earthed as per ORHVS. Take the line hand-over from control. Attach four ropes on the pole. 	<ul style="list-style-type: none"> Check that the line is OPEN, ISOLATED, SAFETY TESTED and EARTHED. 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
		<ul style="list-style-type: none"> Ensure that the apparatus is handed over by Control before any work commences 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">

PULLING / STRAIGHTENING UP LEANING POLES

Unique Identifier: **34-2249**

Type: **DMN**

Revision: **0**

Page: **15 of 21**

	<ul style="list-style-type: none"> Using the operating stick raise the ropes to the upper third of the pole from ground level to stabilize the pole. Using FAS ascend up the pole and loosen the conductor binding wires (wrap-lock ties). Remove conductors from the insulators. Descend from the pole. Pull the pole to the up right position. Use plumb bob to check the straightness of the pole. Compact the soil around the pole in accordance to SCSASABK8 (DST_34-1209). Using FAS ascend up the pole and re-bind the conductors on the insulators. Remove the ropes, descend from the pole and clear the worksite. 	<ul style="list-style-type: none"> Stabilize and anchor the pole with four ropes. 	•	•	•
		<ul style="list-style-type: none"> Ensure that FAS is used through out task execution. 	•	•	•
			•	•	•
<ul style="list-style-type: none"> Where excavation is necessary to straighten the pole under Dead Conditions:- Pole is leaning in line. 	<ul style="list-style-type: none"> Ensure that the line is isolated and earthed as per ORHVS. Take the line hand-over from control. Attach four ropes on the pole. Using the operating stick raise the ropes to the upper third of the pole from ground level to stabilize the pole. Using FAS ascend up the pole and loosen the conductor binding wires (wrap-lock ties). Remove conductors from the insulators. Slot the pole hole by excavating the side in the direction of pull (opposite to direction the pole is leaning towards). Pull the pole to the up-right position. Use plumb bob to check the straightness of the pole. Compact the soil around the pole in accordance to SCSASABK8 (DST_34-1209). Ascend up the pole and re-bind the conductors on the insulators. Remove the ropes, descend from the pole and clear the worksite. 	<ul style="list-style-type: none"> Check that the line is OPEN, ISOLATED, SAFETY TESTED and EARTHED. 	•	•	•
		<ul style="list-style-type: none"> Ensure that the apparatus is handed over by Control before any work commences 	•	•	•
		<ul style="list-style-type: none"> Stabilize and anchor the pole with four ropes. 	•	•	•
		<ul style="list-style-type: none"> Ensure that FAS is used through out task execution. 	•	•	•
		<ul style="list-style-type: none"> Follow the compaction method as it is stipulated in SCSASABK8 (DST_34-1209). 	•	•	•
		•	•	•	•
		•	•	•	•
		•	•	•	•
		•	•	•	•
		•	•	•	•
<ul style="list-style-type: none"> Where excavation is necessary to straighten the pole under Dead Conditions:-Pole is leaning sideways. 	<ul style="list-style-type: none"> Ensure that the line is isolated and earthed as per ORHVS. Take the line hand-over from control. Attach two ropes on the pole and the ropes must be attached at the upper third of the pole from ground level to stabilize the pole. Slot the pole hole by excavating the side in the direction of pull (opposite to direction the pole is leaning towards). 	<ul style="list-style-type: none"> Check that the line is OPEN, ISOLATED, SAFETY TESTED and EARTHED. 	•	•	•
		<ul style="list-style-type: none"> Ensure that the apparatus is handed over by Control before any work commences 	•	•	•
		<ul style="list-style-type: none"> Stabilize the pole with two ropes 	•	•	•
		<ul style="list-style-type: none"> Follow the compaction method as it is stipulated in SCSASABK8 (DST_34-1209). 	•	•	•

PULLING / STRAIGHTENING UP LEANING POLES

Unique Identifier: **34-2249**

Type: **DMN**

Revision: **0**

Page: **16 of 21**

	<ul style="list-style-type: none"> • Pull the pole to the up-right position. • Use plumb bob to check the straightness of the pole. • Compact the soil around the pole in accordance to SCSASABK8 (DST_34-1209). • Remove the ropes and clear the worksite. • 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •
<p>Where excavation is necessary to straighten the pole Mechanically under Dead Conditions:-Pole is leaning in line (move the head of the pole).</p>	<ul style="list-style-type: none"> • Ensure that the line is isolated and earthed as per ORHVS. • Take a hand over from control in terms of regulation 5.03.6.3. • Attach the sling at the bottom of the pole. • Hook the sling to the crane. • Guide the sling upwards along the pole with the crane. • Tension the sling to stabilize the pole. • Using FAS ascend up the pole and loosen the conductor binding wires (wrap-lock ties). • Descend from the pole. • Slot the pole hole by excavating the side in the direction of pull (opposite the direction that the pole is leaning towards). • Pull / push the pole to the up-right position. • Use plumb bob to check the straightness of the pole. • Compact the soil around the pole in accordance to SCSASABK8 (DST_34-1209). • Ascend up the pole and re-bind the conductors on the insulators. • Descend from the pole. • Slowly release the tension of the sling and unhook the sling from the crane. • Remove the slings from the pole and clear the worksite 	<ul style="list-style-type: none"> • Check that the line is OPEN, ISOLATED, SAFETY TESTED and EARTHED. 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •
		<ul style="list-style-type: none"> • Ensure that the apparatus is handed over by Control before any work commences 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •
		<ul style="list-style-type: none"> • Tension the sling to stabilize the pole before ascending or starting with work 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •
		<ul style="list-style-type: none"> • Follow the compaction method as it is stipulated in SCSASABK8 (DST_34-1209). 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •
		<ul style="list-style-type: none"> • The sling is under tension when the pole is being straightened up therefore slowly release the tension when removing the sling. 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •
		<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •
		<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •
		<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •
<p>Where excavation is necessary to straighten the pole Mechanically:- Pole is leaning in line (Correcting the pole foot)</p>	<ul style="list-style-type: none"> • Ensure that the line is isolated and earthed as per ORHVS. • Take a hand over from control in terms of regulation 5.03.6.3. • Attach the sling at the bottom of the pole. • Hook the sling to the crane. • Guide the sling upwards along the pole with the crane. • Tension the sling to stabilize the pole. • Attach two guide ropes at the foot of the pole. • Lift the pole with crane and clear or excavate the hole. • Guide foot of the pole to the hole position and lower pole into the hole. • Use plumb bob to check the straightness of the pole. • Remove the guide ropes. • 	<ul style="list-style-type: none"> • Check that the line is OPEN, ISOLATED, SAFETY TESTED and EARTHED 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •
		<ul style="list-style-type: none"> • Ensure that the apparatus is handed over by Control before any work commences 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •
		<ul style="list-style-type: none"> • Follow the compaction method as it is stipulated in SCSASABK8 (DST_34-1209). 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •
		<ul style="list-style-type: none"> • Tension the sling to stabilize the pole before ascending or starting with work 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •

PULLING / STRAIGHTENING UP LEANING POLES

Unique Identifier: **34-2249**

Type: **DMN**

Revision: **0**

Page: **17 of 21**

	<ul style="list-style-type: none"> • Compact the soil around the pole in accordance to SCSASABK8 (DST_34-1209). • Slowly release the tension of the sling and unhook the sling from the crane. • Remove the slings from the pole and clear the worksite 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •
<p>Where excavation is not necessary to straighten the pole Mechanically under Dead Conditions:-Pole is leaning sideways.</p>	<ul style="list-style-type: none"> • Ensure that the line is isolated and earthed as per ORHVS. • Take a hand over from control in terms of regulation 5.03.6.3. • Attach the sling at the bottom of the pole. • Hook the sling to the crane. • Guide the sling upwards along the pole with the crane. • Pull the pole to the up-right position. • Use plumb bob to check the straightness of the pole. • Compact the soil around the pole in accordance to SCSASABK8 (DST_34-1209). • Slowly release the tension of the sling and unhook the sling from the crane. • Remove the slings from the pole and clear the worksite. 	<ul style="list-style-type: none"> • Check that the line is OPEN, ISOLATED, SAFETY TESTED and EARTHED 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •
		<ul style="list-style-type: none"> • Ensure that the apparatus is handed over by Control before any work commences 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •
		<ul style="list-style-type: none"> • Follow the compaction method as it is stipulated in SCSASABK8 (DST_34-1209). 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •
		<ul style="list-style-type: none"> • Tension the sling to stabilize the pole before ascending or starting with work 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •
<p>Task wrap up</p>	<ul style="list-style-type: none"> • Remove all personnel, equipment and redundant material from site. • Complete and submit required documentation • Restore site 	<ul style="list-style-type: none"> • Clean the work site after the completion of work. • Ensure that all personnel on site are aware that the task is completed and the apparatus is going to be energised 		

Remarks:

OBSERVER SIGNATURE:

PERSON OBSERVED SIGNATURE:

OBSERVER NAME PRINT:

PERSON OBSERVED NAME PRINT:

DATE OBSERVED:

DATE FOLLOW-UP:

OTHER PERSONS INVOLVED

NAME PRINT (AND UNIQUE NUMBER):

SIGNATURE:

*

*

*

*

*

*

Annex B-Impact assessment

(Normative)

1 Guidelines

- All comments must be completed.
- Motivate why items are N/A (not applicable)
- Indicate actions to be taken, persons or organisations responsible for actions and deadline for action.
- Change control committees to discuss the impact assessment, and if necessary give feedback to the compiler of any omissions or errors.

2 Critical points

2.1 Importance of this document. E.g. is implementation required due to safety deficiencies, statutory requirements, technology changes, document revisions, improved service quality, improved service performance, optimized costs.

Comment: Statutory requirements and or document revisions

2.2 If the document to be released impacts on statutory or legal compliance - this need to be very clearly stated and so highlighted.

Comment: No impact on statutory or legal compliance and mainly document revisions

2.3 Impact on stock holding and depletion of existing stock prior to switch over.

Comment: N/A - No new equipment or item need to be acquired for implementation of this document.

2.4 When will new stock be available?

Comment: N/A –see 0 above.

2.5 Has the interchange ability of the product or item been verified - i.e. when it fails is a straight swap possible with a competitor's product?

Comment: N/A – It is a maintenance document and also see 0 above.

2.6 Identify and provide details of other critical (items required for the successful implementation of this document) points to be considered in the implementation of this document.

Comment: Consult / Refer to equipment maintenance documents when implementing the document.

2.7 Provide details of any comments made by the Regions regarding the implementation of this document.

Comment: None.

ESKOM COPYRIGHT PROTECTED

Annex B

(continued)

3 Implementation timeframe

3.1 Time period for implementation of requirements.

Comment: N/A – No technical changes were made to this document.

3.2 Deadline for changeover to new item and personnel to be informed of DX wide change-over.

Comment: None.

4 Buyers Guide and Power Office

4.1 Does the Buyers Guide or Buyers List need updating?

Comment: NO.

4.2 What Buyer's Guides or items have been created?

Comment: NONE.

4.3 List all assembly drawing changes that have been revised in conjunction with this document.

Comment: NONE – The configuration hasn't changed.

4.4 If the implementation of this document requires assessment by CAP, provide details under Error! Reference source not found.

Comment: N/A – The revision requires no new equipment / assessment.

4.5 Which Power Office packages have been created, modified or removed?

Comment: NONE:

5 CAP / LAP Pre-Qualification Process related impacts

5.1 Is an ad-hoc re-evaluation of all currently accepted suppliers required as a result of implementation of this document?

Comment: NO

5.2 If NO, provide motivation for issuing this specification before Acceptance Cycle Expiry date.

Comment: N/A – The document doesn't specify but stipulated the maintenance procedures on the existing equipment.

ESKOM COPYRIGHT PROTECTED

Annex B

(continued)

5.3 Are ALL suppliers (currently accepted per LAP), aware of the nature of changes contained in this document?

Comment: N/A – The specification is supplied to the suppliers not this document.

5.4 Is implementation of the provisions of this document required during the current supplier qualification period?

Comment: Yes – This is the revision of document that is presently being implemented and requires no change to the supplier's qualification period.

5.5 If Yes to 0, what date has been set for all currently accepted suppliers to comply fully?

Comment: N/A – see **Error! Reference source not found.** above.

5.6 If Yes to 0, have all currently accepted suppliers been sent a prior formal notification informing them of Eskom's expectations, including the implementation date deadline?

Comment: N/A – see **Error! Reference source not found.** above.

5.7 Can the changes made, potentially impact upon the purchase price of the material/equipment?

Comment: N/A – No new material is required.

5.8 Material group(s) affected by specification: (Refer to Pre-Qualification invitation schedule for list of material groups)

Comment: N/A – No new material is required.

6 Training or communication

6.1 State the level of training or communication required to implement this document. (E.g. none, communiqués, awareness training, practical / on job, module, etc.)

Comment: Practical / On job and training module.

6.2 State designations of personnel that will require training.

Comment: TSO, PTO & STO.

6.3 Is the training material available? Identify person responsible for the development of training material.

Comment: Yes – DT- Training is revising earthing related training manual which will address the changes in this document.

Annex B

(continued)

6.4 If applicable, provide details of training that will take place. (E.G. sponsor, costs, trainer, schedule of training, course material availability, training in erection / use of new equipment, maintenance training, etc).

Comment: Safety and Maintenance training.

6.5 Was Training & Development Section consulted w.r.t training requirements?

Comment: Yes.

7 Special tools, equipment, software

7.1 What special tools, equipment, software, etc will need to be purchased by the Region to effectively implement?

Comment: NONE.

7.2 Are there stock numbers available for the new equipment?

Comment: N/A – No new equipment is required.

7.3 What will be the costs of these special tools, equipment, software?

Comment: N/A – No new equipment is required.

8 Finances

8.1 What total costs would the Regions be required to incur in implementing this document? Identify all cost activities associated with implementation, e.g. labour, training, tooling, stock, obsolescence

Comment:

No costs other than the training will be incurred by the regions and this will depend on the arrangements made for training ie Training is held regionally or nationally.

Impact assessment completed by:

Name: David M. Ntombela_____

Designation: Consultant_____

ESKOM COPYRIGHT PROTECTED