

	Task Manual	Technology
---	--------------------	-------------------

Title: **PHYSICAL MATERIAL HANDLING**

Unique Identifier: **240-97759677**

Alternative Reference Number: **34-106**

Area of Applicability: **Engineering**

Documentation Type: **Task Manual**

Revision: **1**

Total Pages: **14**

Next Review Date: **November 2020**

Disclosure Classification: **Controlled Disclosure**

Compiled by

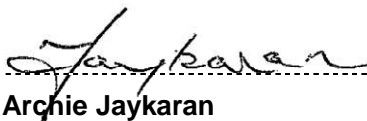


Frans Lötter

Officer Technical Support

Date: **20/07/2015**

Approved by



Archie Jaykaran

Middle Manager Technical

Date: **11 Sep 15**

Authorized by



Prince Moyo

Power Delivery Engineering GM

Date: **29/9/2015**

Supported by SCOT/SC



Archie Jaykaran

SCOT/SC Chairperson

Date: **11 Sep 15**

Content

	Page
1. Introduction.....	3
2. Supporting clauses.....	3
2.1 Scope.....	3
2.1.1 Purpose.....	3
2.1.2 Applicability.....	3
2.2 Normative/informative references.....	3
2.2.1 Normative.....	3
2.2.2 Informative.....	3
2.3 Definitions.....	4
2.3.1 General.....	4
2.3.2 Disclosure classification.....	4
2.4 Abbreviations.....	4
2.5 Roles and responsibilities.....	5
2.5.1 Plant Managers shall be responsible for:.....	5
2.5.2 Zone Manager shall be responsible for:.....	5
2.6 Process for monitoring.....	5
2.7 Related/supporting documents.....	5
3. Requirements.....	6
3.1 Work Instruction.....	6
3.1.1 Pre-job Planning.....	6
3.1.2 Safety and Preparation.....	6
3.1.3 On Site Risk Assessment.....	6
3.1.4 Working Execution.....	7
3.2 Related/Supporting Documents.....	8
3.2.1 Related Documents.....	8
3.2.2 Forms and Records.....	8
3.3 Related/Supporting Documents.....	8
3.3.1 Related Documents.....	8
3.3.2 Forms and Records.....	8
4. Authorization.....	8
5. Revisions.....	9
6. Development team.....	9
7. Acknowledgements.....	10
Annex A – Task Observation.....	11

1. Introduction

The document was compiled to conform or align with OHSAct requirements in ensuring that procedures for “Physical Material Handling” tasks are available. The task manual stipulates a procedure which seeks to ensure that personnel using the ladder are doing it in a safe manner and the associated risks and hazards are minimised.

2. Supporting clauses

2.1 Scope

2.1.1 Purpose

The purpose of this document is to provide persons carrying out “Physical Material Handling” with a step by step description of how to do the task, including the most critical hazards and technical specifications associated with the task

2.1.2 Applicability

This document shall apply throughout Eskom WIRES business and contractors employed by Eskom.

2.2 Normative/informative references

2.2.1 Normative

- [1] Occupational Health and Safety Act and Regulations (OHSAct),
- [2] ISO 9001, Quality Management Systems,
- [3] EPL_32-747: Rev 0, Safety, Health, Environment, And Quality (SHEQ) Policy,
- [4] DST_34-1710: Rev. 4, Provision and use of Personal protective equipment,
- [5] EPC_32-520, Occupational Health & Safety Risk Assessment Procedure,
- [6] DPC_34-227: Rev. 0, Pre-Task Planning and feedback process,
- [7] DPC_34-380: Rev 0, Identifying, Analysing, Documenting and observing dangerous/hazardous tasks,
- [8] 240-86100853: Rev. 0, Standard for Barricading Prohibited Area and Live Chamber,
- [9] DISPVABI7: Rev 1, The Procedure for Manual Handling of Rural Line Poles,
- [10] DPC_34-1475: Procedure for Handling, Auditing and Stacking of new Wooden Transmission Poles
- [11] DMN_34-1377: Ask Manual for Mechanical and Manual Handling of Rural Line Poles and Cross-Arm on a Pole-Trailer and Truck.
- [12] EPC_32-846: Rev 0, Operating Regulations for High Voltage Systems;
- [13] DPC_34-925: Rev 0. Procedure for refusal to work on the grounds of health, safety and environmental concerns, and
- [14] Manufacturers manual.

2.2.2 Informative

- [15] DPC_34-04: Rev 3, Procedure For The Preparation And Administration Of Distribution Standards,
- [16] EPC_32-247: Rev 0, Procedure for Vegetation Clearance and Maintenance within Overhead Power Line Servitudes and on Eskom Owned Land, and
- [17] DGL_34-190: Rev 0, Access to Farms (includes Strategy on dealing with game farms).

ESKOM COPYRIGHT PROTECTED

2.3 Definitions

All definitions in NRS040 and OHSAct 85 of 1993 including the following are applicable.

2.3.1 General

All definitions appropriate to the document should be included here. Refer to definitions listed in recognised industry glossaries such as NRS 000 and the IEV, and use these wherever appropriate.

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

Definition	Description
Authorised person	means a person, whether an employee or another person, who has been authorised in terms of these regulations
Responsible person	means a person, who has been authorised to be responsible for ensuring that the work on the apparatus covered by work permit can be, carried out with safety and within the terms of these regulations
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.
Authorized	A person who is trained and has been proven competent to carry out rotten pole replacement in terms of this standard. This authorization shall be in writing.

NOTE: Only persons who have satisfied the designated person on 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.

2.3.2 Disclosure classification

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

2.4 Abbreviations

Abbreviation	Description
CDP	Career Development Programme
CNC	Customer Network Centre
CO	Construction Official
GMR	General Machinery Regulation

ESKOM COPYRIGHT PROTECTED

Abbreviation	Description
ORHVS	Operating regulations for high voltage systems
OTS	Officer Technical Support
PCO	Principal Construction Official
PPE	Personal Protective Equipment
PTO	Principal Technical Officer
SCO	Senior Construction Official
STO	Senior Technical Officer
TCIF	Technology Change Information Forum
TO	Technical Officer
TSU	Technical Services Unit
WCO	Works-Coordinator

2.5 Roles and responsibilities

2.5.1 Plant Managers shall be responsible for:

- a) Ensuring that equipment job plans are available and issued for specific maintenance.
- b) Ensuring that the maintenance feedback information that is available in the maintenance management system is analysed.

2.5.2 Zone Manager shall be responsible for:

- a) Ensuring that staff carrying out maintenance tasks is trained, competent and authorized to perform maintenance on the specific equipment.
- b) Ensuring that instructions are implemented and adhered to and equipment is maintained in accordance to relevant work instructions.
- c) Ensuring that the maintenance feedback information / data is captured and recorded into the system for future maintenance planning.

2.6 Process for monitoring

Document number	Document title
240-45920887	Process Control Manual (PCM) for Manage Maintenance Base.
DPC_34-04	Procedure For Management Of Technical Documents For SCOT.

2.7 Related/supporting documents

N/A

3. Requirements

3.1 Work Instruction

3.1.1 Pre-job Planning

NOTE 1: Ensure that the personnel are trained and competent to perform the task allocated to them and they are familiar to the area or environment: Lack of knowledge (area, environment, equipment) will lead to damage to equipment and injuries to staff.

NOTE 2: Job pressure – During planning it must be ensured that all parts of work are allocated time enough to avoid unnecessary job pressures.

NOTE 3: Ensure that appropriate PPE and safety equipment are identified and inspected.

NOTE 4: Conduct a pre-use inspection on all equipment and tools before they are used and ensure that they are serviceable and of good standards.

NOTE 5: Ensure that all material and spares used on the installation complies with specifications

- a) Do an assessment at the site to determine the scope of work and the resources that would be required (people, equipment, PPE, etc.) - also to determine the cause of loss, upgrade/down grade, cable fault etc
- b) Plan work and resources required for the task

3.1.2 Safety and Preparation

NOTE 1: Maintain and ensure that light / lighting is sufficient during task execution

- a) Where required ensure the apparatus is opened, isolated and earthed, handed over (work permit) in accordance with EPC_32-846.
- b) Barricading shall be erected in accordance with 240-86100853 where necessary / required.
- c) At no time is the rotten / damaged wooden pole structure to be used as part of a lifting device.
- d) At all times the correct Personal Protective Equipment shall be used.
- e) Ensure that all tools and equipment to be used have been inspected by a competent person before they are used.
- f) The responsible person on site will continually supervise, direct and observe all activities.
- g) Work men to be reminded that they have “the right to refuse” if they consider the work is too dangerous or do not have the correct equipment or skills to safely complete the activity as per DST_34-925.
- h) Responsible and authorized person must ensure that the work site is prepared and made safe.
- i) Responsible person to sign the permit to work and complete workers register.
- j) Where required on-site apply equipotential earthing in accordance with organisational standards and procedure (EPC_32-846 / ORHVS).

3.1.3 On Site Risk Assessment

NOTE 1: Perform a proper risk assessment before task commencement and continuously during task execution in accordance with the prescribed procedure.

- a) Conduct an on-site risk assessment prior to commencement of work and continuous during the task execution as per DPC -34-227.

NOTE 2: Ensure good visibility with additional lights/lighting where necessary.

NOTE 3: Identify and analyse risks and hazards associated with the task, eliminate, minimise, develop measures against – i.e. compile procedures or provide PPE to safeguard maintenance staff.

- b) Ensure that when material handling is carried out in the electrically hazardous locations the correct level of supervision is applied.

ESKOM COPYRIGHT PROTECTED

3.1.4 Working Execution

3.1.4.1 Loading material onto vehicle

NOTE 1: Use correct tools, PPE and equipment for task allocated.

NOTE 2: When physically attempting to lift, lower, handle or move materials, ensure that correct position / stance (ergonomically) is taken.

NOTE 3: When handling flammable liquids / hazardous substances beware of open flames and do not smoke.

- a) Inspect all tools and equipment before use.
- b) Wear correct safety equipment before attempting to load materials onto vehicle.
- c) Inspect routes over which object will have to be moved, eliminate obstructions and spills.
- d) Get mechanical help or help from another person if necessary.
- e) Place material conveniently within reach and have handling aids available.
- f) Get a good grip on the load / material and assess the weight before trying to handle it.
- g) Get the load / material close to the body, place feet close to the load and ensure that the body stands in a stable position (bend knees where material is below waist level) with feet pointing in the direction of movement.
- h) Keep the back straight and lift mostly by straightening the legs.
- i) When changing direction, lift the object to carrying position and turn the entire body.
- j) When two or more people carry one object they must adjust the load so that it rides level and that each person carries equal part of the load.
- k) When carrying long sections of material workers must walk one behind the other, carrying material on the same shoulder and their walk / movement must be synchronised / in step.
- l) When carrying hazardous substances ensure that lids are properly tightened before lifting / moving it.
- m) When placing an object into a tight / restricted space, the worker shall slide / push it into place with the hands in the clear (ensure not to pinch hands in tight spaces).
- n) Load the material on the vehicle and ensure that it is safely placed and secured.

3.1.4.2 Arrival at scene / site

- a) Follow in reverse order the procedure in “3.1.4.1 Loading material onto vehicle” above to off load material and to carry it to point of operation / storage.

NOTE: Ensure that material being off-loaded is placed safely at work area or storage place.

3.1.4.3 Task Wrap Up

- a) Remove all personnel, equipment and redundant material from site.
- b) Complete and submit required documentation.
- c) Check condition of all objects handled (chemicals, equipment and material) - lids of the containers are tightly sealed.
- d) Stack and secure loads where necessary.
- e) Redundant material to be disposed of in accordance with organisational requirements.

NOTE: Clean work area at the completion of the job – because leaving off-cuts and material may result in injuries to the public/livestock and damage to the image of Eskom.

3.2 Related/Supporting Documents

3.2.1 Related Documents

- a) Specifications;
- b) Critical task analysis; and
- c) Training module.

3.2.2 Forms and Records

The completed report shall be returned to the Work Management Centre together with the work order via Work co-ordinator.

The completed reports / forms must be returned to respective departments for record keeping.

- a) Works order
- b) Operating Instruction form / Workers register / Permit
- c) Risk Assessment

3.3 Related/Supporting Documents

3.3.1 Related Documents

- a) Standards, Procedures and Specifications;
- b) Critical task analysis; and
- c) Training module.

3.3.2 Forms and Records

The completed reports / forms must be returned to respective departments for record keeping:

- a) Works order
- b) Operating Instruction form / Workers register / Permit
- c) Risk Assessment
- d) In / Out commission sheet / Stores return

4. Authorization

This document has been seen and accepted by:

Name and surname	Designation
Prince Moyo	Power Delivery Engineering GM
Colin Smith	Design Base Maintenance Manager
Archie Jaykaran	SCOT/SC Chairperson
Solly Matebula	Specialized and Maintenance Manager (GOU)
Reggie Moleko	Specialized and Maintenance Manager (FS OU)
Bheki Ntshangase	Snr Manager Engineering
Lumka Godlwana	Technical Support Manager (LOU)
Ian Mcfadden	Technical Support Manager (KZN OU)

ESKOM COPYRIGHT PROTECTED

Name and surname	Designation
Rodney Pretorius	Technical Support Manager (NW OU)
Nolan Ockhuis	Technical Support Manager (WC OU)
Ellie Mabaso	Technical Support Manager (NC OU)
Nomkhosi Zondo	Technical Support Manager (MOU)
Lindani Mbhele	Technical Support Manager (EC OU)
Name and surname	Designation

5. Revisions

This revision "240-97759677" supersedes and replaces all revisions of DMN_34-92 and DISPVAEH0.

Date	Rev	Compiler	Remarks
Nov 2015	1	C Nuttall	Register a 240 number for the document, reviewed and formatted into the new format. No content changed. The document is published as 240-97759677
March 2010	1	HCJ Nuttall	Document approved as DMN_34-92
			Included Foreword and revised the Introduction section
			2, Revised Normative and informative references
			3.5, Removed Implementation Date
			3.6, Removed Process for monitoring
			Reformatted the document
			Combined 34-92 rev 0 and dispvae0
Nov 2006	0	DM Ntombela	One document was original issues as DMN_34-92
Nov 2003	0	DM Ntombela	One document was original issues as DISPVAEH0

6. Development team

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

Name	Designation	Region
H J Martens	Officer Technical Support	WC OU
P A Pretorius	Officer Technical Support Major Engineering Works	G OU
H C J Nuttall	Senior Supervisor	MP OU
P van der Westhuizen	Senior Supervisor	EC OU
P Diedericks	SHE Manager	FS OU
S Delpont	SHE Officer	MP OU
P Ramosili	Field Services Engineer	NW OU


ESKOM COPYRIGHT PROTECTED

M Lakhan	Officer Technical Support	KZN OU
D LeRoux	Officer Technical Support	WC OU
M Mavuso	Officer Technical Training	TX CG HV Plant
A Haynes	Senior Advisor	TX WP&CS
A Toulson	Officer Technical Support	TS GOU
D Sadler	Middle Manager HV Plant	TX WP&CS
K Kraftt	Senior Consultant	PDE-DBO
L Van Der Westhuizen	Officer Technical Training	TX North
Pg De Jager	Officer Technical Training	HV Plant NE Grid
R Tee	Senior Engineering Assistant	TX South
SP De Bruin	Senior Supervisor	G OU
F Van Jaarsveld	Officer Technical Support	KZN OU
DFB Lötter	Officer Technical Support	WC OU

7. Acknowledgements

Not applicable.

Annex A – Task Observation
(Normative)

	FORM TITLE	OBSERVATION FORM		
	FORM NUMBER	240-97759677	REV DATE	November 2020
	DOCUMENT TITLE	PHYSICAL MATERIAL HANDLING		

1.	<p>OBSERVER'S PARTICULARS</p> <p>Task _____ observer's name: Task observed: PHYSICAL MATERIAL HANDLING</p> <p>Section _____ / _____ department: Location: _____</p> <p>Occupation: _____ Is there a procedure / task manual for this task? YES <input type="checkbox"/> NO <input type="checkbox"/></p> <p>Date: _____ Task Manual ref. __ 240-97759677 _____</p> <p>Time _____ with _____ task: Work _____ order _____ no.:</p>																								
2.	<p>REASON FOR OBSERVATION</p> <p>Planned: <input type="checkbox"/> Follow-up: <input type="checkbox"/></p> <p>Name of employee being observed: _____</p>																								
3.	<p>TASK OBSERVATION</p> <p>Did employee adhere to the procedure/practice requirements?</p> <table border="1" style="width:100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> <th>N/A</th> <th></th> <th>Yes</th> <th>No</th> <th>N/A</th> </tr> </thead> <tbody> <tr> <td style="width:35%;">Preplanning carried out correctly</td> <td></td> <td></td> <td></td> <td style="width:35%;">5. Use of correct PPE</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Emergency contacts numbers Obtained</td> <td></td> <td></td> <td></td> <td>6. Ensure that the panel / equipment to be commissioned is isolated and earthed in accordance with EPC_32-846</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Yes	No	N/A		Yes	No	N/A	Preplanning carried out correctly				5. Use of correct PPE				Emergency contacts numbers Obtained				6. Ensure that the panel / equipment to be commissioned is isolated and earthed in accordance with EPC_32-846			
	Yes	No	N/A		Yes	No	N/A																		
Preplanning carried out correctly				5. Use of correct PPE																					
Emergency contacts numbers Obtained				6. Ensure that the panel / equipment to be commissioned is isolated and earthed in accordance with EPC_32-846																					

ESKOM COPYRIGHT PROTECTED

Tools equipment:				7. Carry out the task as per task manual (240-97759677)				
Used correctly								
In good and safe condition								
Test instrument calibrated								
Toolbox Talk:								
Task manuals used								
Complete Worker's register								
Risk Assessment been done								
Valid work permits available								
Could observed practices / conditions lead to:								
Injury:				Illness (fumes, gas, etc.)				
Risk of getting caught by				Costs (delays)				
Risk of striking against/get struck by				Poor quality (non-conformance)				
Risk of fall from same level								
Risk of fall from different level								
Risk of slip, trips and falls								
Risk of electrocution								
4.	NON COMPLIANCE PRACTICE OBSERVATION							
		Yes	No	N/A		Yes	No	N/A
	1. Working at unsafe speed				7.Failure to warn			
	2. Using unsafe equipment				8. Taking chances			
	3. Using equipment unsafely				9. Failure to identify hazards			
	4. Unsafe loading, placing & lifting				10.Failure to secure lock-out			

	5. Taking unsafe position				11. Safety signs ignored			
	6. Safety rules ignored							
NOTE: ALL OBSERVED CLASS HAZARDS SHALL REQUIRE IMMEDIATE INTERVENTION								
5.	OBSERVED DEVIATIONS / NON-CONFORMANCES							
6.	RISK BEHAVIOURS							
7.	PROPOSED CONTROLS							
	Compile a procedure for this task				Issue a standing instruction			
	Revise present procedure				Change work methods			
	Retraining of employees				Professional referral			
	Engineering revision				Coaching			
8.	ANALYSIS							
	IAC – inadequate capability		ABU – abuse or misuse / equip / drugs or alcohol		MAIN – inadequate maintenance			
	KNO – lack of knowledge		NAT – natural factors		EQU – inadequate equipment			
	SKI – lack of skill		LEA – inadequate leadership		STA – inadequate work / train Standards			
	STR – stress		ENG – inadequate engineering		WEA – wear & tear			
	MOT – improper motivation		PUR – inadequate purchasing		CON – inadequate control			

9.	DISCUSSION BETWEEN SUPERVISOR/OBSERVER AND EMPLOYEE	
	1. EMPLOYEE EXPLANATION FOR RISK BEHAVIOUR:	
	2. AGREEMENT TO CHANGE AT RISK BEHAVIOUR:	
10.	FOLLOW-UP ACTIONS	WHEN / WHO

Person being Observed signature: _____ Date: _____

Signature (Task Observer): _____ Date: _____

Signature Chairperson Safety Committee: _____ Date: _____
(if deviations were found)