

 Eskom	Standard	Technology
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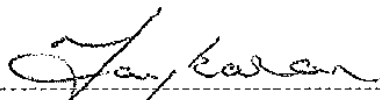
Title: **Contract Specification for Vegetation Management Services on Eskom Networks** **240-52456757**

Alternative Reference Number: **41-927**

Area of Applicability: **Engineering**

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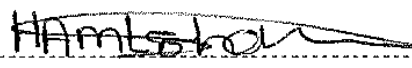
COE Acceptance


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Date: *16 Jan 18*

DBOUS Acceptance


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Date: *20/03/2018*

This document is **STABILISED**. The technical content in this document is not expected to change because the document covers: *(Tick applicable motivation)*

1	A specific plant, project or solution	
2	A mature and stable technical area/technology	x
3	Established and accepted practices.	x

PCM Reference: <XXXXXX>

SCOT Study Committee Number/Name: <Number or name>

 Eskom	Standard	Group Technology
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Title: **CONTRACT SPECIFICATION
FOR VEGETATION
MANAGEMENT SERVICES ON
ESKOM NETWORKS**

Unique Identifier: **240-52456757**

Part **11 - Maintenance**

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Compiled by

Approved by (SCOT SC Chairperson)



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Date: 13/02/2013

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Date: 12/02/2013

Date: 14/02/2013

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Foreword

Normative Reference: EPC 32-247– Environmental Procedure, Procedure for vegetation clearance and maintenance within overhead power line servitudes and on Eskom owned land:

Vegetation management within power line servitude has financial, social and environmental implications. Maintenance of vegetation needs to be done as economically as possible, without causing unnecessary environmental damage and without impacting on the rights and requirements of the landowner and other interested and affected parties.

The objective of power line route vegetation maintenance is to ensure the safe mechanical and electrical operation of the power line and to meet Eskom's legal, business social and environmental obligations.

Revision history

This is a new document.

Date	Rev.	Compiled By	Clause	Remarks
Feb 2013	0	AJ Krafft	All	New Standard developed

Acceptance

This document has been seen and accepted by:	
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This standard shall apply throughout Eskom Holdings Limited, its divisions, subsidiaries and entities wherein Eskom has a controlling interest.

Introduction

The Transmission and Distribution Divisions in the Eskom “Wires Business” extensively make use of contractors to perform vegetation services. Standardisation of Vegetation Contractor services specification has become vital to optimise contractor selection, performance appraisal and to normalise a price list for such services.

Any vegetation contract established for the “Wires Business” referred above will be based on the requirements of this specification.

Keywords

Biome, vegetation cycles, statutory requirements

1 Scope

This specification defines all requirements for the recruitment, selection, appointment and management of contractors that will conduct vegetation management in the Transmission and Distribution Divisions.

2 Normative references

Parties and service providers for the Transmission and Distribution Divisions, using this specification shall apply the most recent edition of the documents listed below notwithstanding the Divisional application limitation prescribed in these references.

International document(s):

None

South African National document(s):

Occupational Health and Safety act 85 of 1993.

NEMA National Environmental Management Act 107 of 1998

NFA National Forest Act 84 of 1998

32-736 Bio Diversity Policy

32-815 Land and Bio diversity standard

Occupational Health and Safety Act 85 of 1993.

NEMA National Environmental Management Act 107 of 1998

NFA National Forest Act 84 of 1998

32-736 And and Bio Diversity Policy

32-815 Land and Bio diversity standard

Eskom National document(s):

32-9: Definition of Eskom documents

32-95 . Reporting, Recording, Investigating, Costing And Following Up Of Incidents/Accidents

32-644: Eskom documentation management standard.

474-65: Operating Manual of the Steering Committee of Wires Technologies (SCOWT)

EPC 32-247: Procedure for vegetation clearance and maintenance within power line servitude's and Eskom owned land

34-1164: Medical Surveillance

DMN 34-98: Working with chainsaws on ground level and from a bucket attached to a vehicle mounted crane/aerial device

DMN 34-99: Work with mechanical high cutters - on ground level and from a bucket attached to a vehicle mounted crane/aerial device

34-1710: Provision and Use of Personal Protective Equipment

SCSPVACL6: Procedure for using fall arrest systems

08TI_018: Felling Dangerous Trees in Eskom

34-333: Health and Safety Requirements to be met by principal contractors employed by Eskom.

34-317: Vehicle and Transportation Management

Maintenance and Management Agreement in Forest Plantation Areas And Servitude Areas

34-323: Personal Protective Equipment Specification

34-1173 – Access to farms (Distribution, Transmission and Generation)

DMN 34-100: Work with petrol driven pruners - on ground level and from a bucket attached to a vehicle mounted crane/aerial device

34-227: Pre-task planning and feedback process

Memorandum: Rudi Kruger (10 May 2010): Procedure To Follow In The Event Of Landowners Refusing To Have Trees In Close Proximity To Power Lines Cut

NOTE: It is the responsibility of the Eskom Operating Unit Contracting Agent or responsible person, to provide the most recent version of the standards, specifications and procedures applicable and/or listed in the text to their contractors to assure compliance and standardised performance assessment.

Eskom Divisional documents(s):

None

3 Definitions and abbreviations

3.1 Definitions

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.

Plantation: Plantation Any trees planted and managed by commercial timber growers for commercial purposes (see commercial timber growers guideline)

Servitude: Servitude: Is real right (that is registered in the deeds office against the title deed of an erf) the content of which is to allow limited access to an erf for a specific purpose. It does not entail ownership and must be exercised in a reasonable way within the boundaries of the specific purpose. In this specification the reference is specifically to servitude that allow Eskom only to build, operate and maintain infrastructure for the generation and conveyance of electricity and ancillary purposes

3.2 Abbreviations

CNC: Customer Network Centre (Distribution)

MVCD: Minimum Vegetation Clearance Distance

CNL: Customer Network Link (Transmission)

4 Requirements

4.1 Vegetation management objective

Normative Reference: EPC 32-247– Environmental Procedure, Procedure for vegetation clearance and maintenance within overhead power line servitudes and on Eskom owned land:

Vegetation management within power line servitude has financial, social and environmental implications. Maintenance of vegetation needs to be done as economically as possible, without causing unnecessary environmental damage and without impacting on the rights and requirements of the landowner and other interested and affected parties.

The objective of power line route vegetation maintenance is to ensure the safe mechanical and electrical operation of the power line and to meet Eskom's legal, business social and environmental obligations.

4.1.1 Vegetation Control Standards outside Plantations

Normative Reference: EPC 32-247 – Environmental Procedure, Procedure for vegetation clearance and maintenance within overhead power line servitudes and on Eskom owned land:

- a) Trees growing to a height in excess of the horizontal distance of that tree from the nearest conductor which are identified as a risk to safe operation of the power line shall be treated and prevented from growing in such a manner as to endanger the line should they fall. (See corridor specification for clarity)
- b) All vegetation posing a risk to the line or preventing access for maintenance purposes shall be managed.
- c) Various species of indigenous vegetation are protected by law in terms of which is necessary to obtain a permit from the relevant authority, in order to cut them. The list of "... protected tree species under the national forest act, 1998 (Act No 84 of 1998)" Gazetted by the department of Agriculture, Forestry and Fisheries from time to time: will be sourced and referenced by the contractor in lieu of the specific requirements in terms of protected species. No protected vegetation as per above act shall be cut without the required permits or licences

- d) Where there is any doubt as to whether a plant species is protected or not, the Department of Agriculture, Forestry and Fisheries (DAFF) or the local Eskom environmental practitioner in that Business Unit shall be consulted.
- e) Alien vegetation in servitude shall be managed in terms of the Regulation GNR.1048 of 25 May 1984 (as amended) issued in terms of the Conservation of Agricultural Resources Act, Act 43 of 1983. In Terms of these regulations, Eskom shall "control" i.e. to combat category 1, 2 and 3 plants to the extent necessary to prevent or to contain the occurrence, establishment, growth, multiplication, propagation, regeneration and spreading such plants within servitude areas or land owned by Eskom.
- f) On sites owned by Eskom, all vegetation proclaimed in terms of the Regulation shall be subject to control in terms of legislation.
- g) Control programs should be included as part on the Environmental Management Plans, and will need to be area and species specific. Due to the nature of alien vegetation, this programmer implementation may need to be more frequent than the three year interval recommended for indigenous vegetation. Alien vegetation can grow at rates significantly faster than 1 (one) meter per year.
- h) Care must be taken to ensure alien vegetation is not spread as a result of vegetation management processes through the transport of seeds or other vegetative material from one site to another.
- i) The responsibility for obtaining the appropriate permit/s from the relevant authority will be that of Eskom.
- j) Indigenous vegetation which does not interfere with the safe operation of the power line should be left undisturbed.
- k) Vegetation should be trimmed where it is likely that it intrudes on the minimum vegetation clearance distance, (MVCD) or will intrude on this distance before the next scheduled clearance.

4.1.2 Vegetation Control Standards In plantations or forests

Normative Reference: 0029E – maintenance and management agreement in forest plantation areas and servitude areas: The following clause in Eskom's Standard Servitude / Wayleave Agreement shall be adhered to:

- a) No tree shall be allowed to grow to a height in excess of the horizontal distance of that tree from the nearest conductor of any power line or to grow in such a manner as to endanger the line should it fall or be cut down."
- b) Where the Servitude/Wayleave Agreement makes reference to a specific width within which no trees may be deliberately grown, then this restriction width will apply.
- c) Acceptable vegetation that does not grow high enough to cause interference with overhead power lines, or cause a fire hazard to any plantation, should not be cut or trimmed, unless it is growing in the road access area and then only at the discretion of Eskom, provided that this shall not preclude the preparation of fire belts as contemplated in this agreement.
- d) Where clearing for access purposes is essential, the width to be cleared shall be to a maximum of 8 meters.
- e) Deep valleys and sensitive areas that do not allow vehicle access, or legally protected areas are not to be cleared of acceptable vegetation provided the acceptable vegetation poses no threat to the operation and reliability of the power line.

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- f) Clearing of acceptable vegetation for tower positions shall be the minimum required for the specific tower, regard being had for the provisions of clause 4.8, and the costs shall be for Eskom's account.
 - g) Where power line servitudes enter plantations from non-timber farmlands or on either side of a road or river, if the natural vegetation is such that a visual barrier cannot be left, the planting of suitable indigenous vegetation may be considered to provide aesthetic screening.
 - h) Trees, shrubs, grass, natural features and topsoil which are not removed shall be protected from damage during operations. Scalping of the earth or any unnecessary disturbance shall not be allowed in any clearing operation.
 - i) Specifications for necessary re-vegetation of an area shall be determined jointly by Eskom and the Grower, and implemented on an area specific basis by Eskom in consultation with the Grower.
 - j) Rivers, water courses and other water bodies shall be kept clear of felled trees, bush cuttings and debris. Where possible, the integrity of riverbanks shall be maintained and shall be dealt with in accordance with the provisions of clause 4.11 if they are disturbed or damaged.
 - k) The Grower shall have the right to retain cut vegetation, in which case it shall attend to its removal. If not, the cut vegetation shall be removed by Eskom in a manner that is mutually acceptable.
 - l) Neither party shall undertake controlled burning or the making of open fires within or near servitudes unless agreed upon in writing by both parties in this instance.

4.1.3 Fire Break and Servitude Maintenance in Plantations

Normative Reference: 0029E – maintenance and management agreement in forest plantation areas and servitude areas

- a) Eskom will inspect the servitudes as necessary and will identify areas requiring servitude maintenance, in order to comply with the requirements of this agreement.
- b) The local Eskom maintenance official will meet with the Grower's local forester to discuss the outcome of the patrols and to agree on the maintenance requirements which shall as far as possible be consistent with the Grower's forest management plans for the plantation over which the servitude passes, and shall comply with the requirements imposed in the Grower's applicable insurance policy. No agreements in this regard shall be binding unless recorded in writing and signed by both parties.
- c) At the meeting referred to above, Eskom and the Grower's local Forester shall endeavour to reach agreement as to who shall undertake the maintenance required on the servitude and the cost to be expended in respect thereof.
- d) If the Grower wishes to use any servitude as part of its firebreaks, then the following shall apply:
- e) the difference between the estimated cost to Eskom of the maintenance of the servitude in accordance with the standards prescribed by this agreement and that required to establish and maintain a firebreak, shall be for the Grower's account;
- f) in the event that the Grower undertakes the agreed maintenance on the servitude then Eskom shall pay to the Grower its share of the maintenance costs within 14 days of the completion of the relevant maintenance work;
- g) If Eskom is to undertake the maintenance work, then the Grower shall pay to Eskom its share (if any) of the maintenance costs within 14 days of the completion of the relevant maintenance work;

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- h) All payments in this regard shall be only be made against delivery of a valid original tax invoice.
- i) Eskom shall be consulted prior to controlled burning for firebreak construction. The Grower shall be liable for all damage to Eskom property caused as a result of negligence during maintenance of the servitude as a fire break to the extent liable therefor in law.
- j) Eskom shall not be liable for the cost of maintenance of the servitudes on which the 11kV and 22kV lines that exclusively supply the Grower.

4.2 Corridor Specification

Vegetation will be cleared and managed to provide for access, safety clearance, and prevention of fires in accordance with paragraph 4.3 and line clearance in accordance with paragraph 4.3.1 below.

4.3 Vegetation Clearance for access purposes (inspection, repair and maintenance), safety clearance, and prevention of fires in Servitudes and Wayleaves

NOTE: Where there is a specific risk to operations as a result of equipment design or environmental condition - the Operating Unit will manage vegetation on merit. The justification for this shall only be in exceptional circumstances and shall be open to scrutiny and review.

Nominal voltage	Servitude building restriction widths (measured from the centre line of the power line) *	Maximum Vegetation Clearance
11 kV	9 m	4m on either side of the centre line will be cleared. Grass and scrubs will be managed in accordance with Annex B which is biome and land use dependant
22 kV	11 m	4m on either side of the centre line will be cleared. Grass and scrubs will be managed in accordance with Annex B which is biome and land use dependant
88 kV	11 m	5 m on either side of the centre line will be cleared. Grass and scrubs will be managed in accordance with Annex B which is biome and land use dependant
132 kV	15,5 m	8 m on either side of the centre line will be cleared. Grass and scrubs will be managed in accordance with Annex B which is biome and land use dependant
220 to 765 kV	22 m to 40 m	Clear from the centre of the power line up to the outer conductor, plus an additional 10 meters on either side. Grass and scrubs will be managed in accordance with Annex B which is biome and land use dependant.
533 kV DC	15 m	8 m either side of the centre line will be cleared. Grass and scrubs will be managed to a width of 15 meter either side of the centre of the line

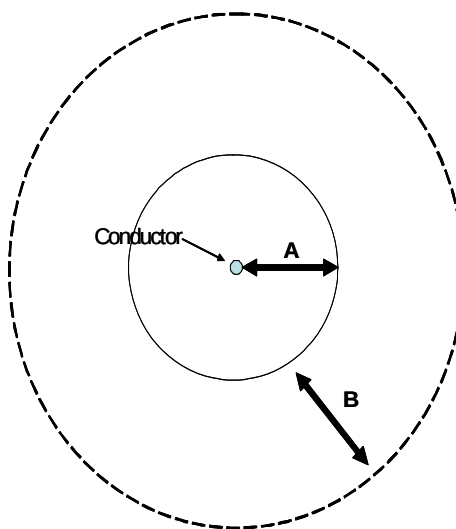
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4.3.1 Vegetation Clearance for Power Lines

- a) Vegetation will be managed to maintain clearance to all conductors on the line. This Minimum Vegetation Clearance Distance (MVCD) shall be the sum of "A – Minimum Vegetation clearance" and "B – the Expected Growth Rate in three (3) years".
- b) High Risk Trees outside the corridor: Trees growing to a height in excess of the horizontal distance of that tree from the nearest conductor which are identified as a risk to safe operation of the power line shall be treated and prevented from growing in such a manner as to endanger the line should they fall.
- c) Minimum Vegetation Clearance
- d) A minimum vegetation clearance in accordance with Columns 6 and 8, Table E1 "Minimum Clearance for Powerlines": SANS10280 will be maintained at all times

Minimum Clearance Table: Vegetation to Power Line

System nominal r.m.s. voltage kV	Minimum vertical clearances (m)	Minimum horizontal Clearances (m)
>1 up to and including 44	3	3
66	3.2	3
88	3.4	3
132	3.8	3
220	4.4	3
275	4.9	3
400	5.6	3.2
765	8.5	5.5

**Figure 1: Minimum Vegetation Clearance Distance $MVCD = A + B$** **ESKOM COPYRIGHT PROTECTED**

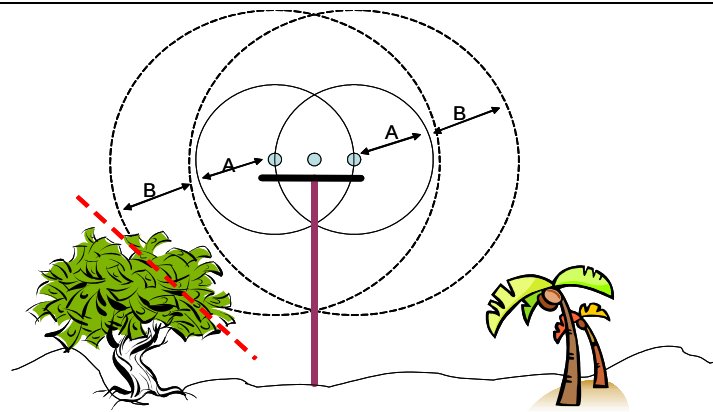


Figure 2: Low Voltage Lines

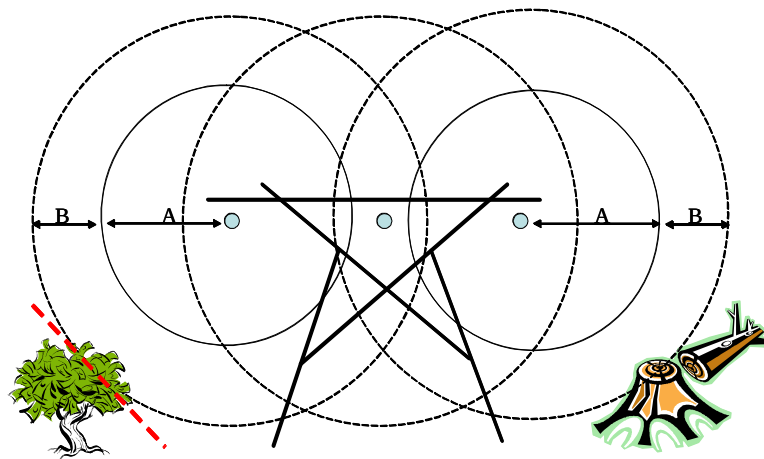


Figure 3: Lines with Nominal Voltage greater than 1 000 Volt

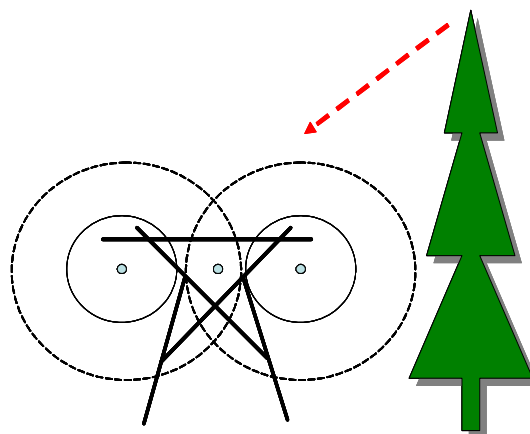


Figure 4: Projected growth before next cutting

NOTE 1: Refer to the power line deed of servitude or other agreement for the exact dimension of the power line servitude width in question. The blow out of the conductor must be taken into consideration

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4.4 Restrictions and Limitations to Vegetation Management Operations

4.4.1 Restriction of activity by the contractor

Where trees have to be felled or trimmed in close proximity to power lines and / or other services and it cannot be done safely, these services must be suspended and removed in order for such dangerous trees to be felled. This entails in extreme cases:

- a) Arranging power outages and in some cases removing line components for the felling to proceed: and/or
- b) Collaborating with other service providers to make their services and assets safe or removing where possible their services temporarily so that felling can proceed.

NOTE: It must be considered that these trees pose a danger to assets, services and the health and safety of the public at large as well as to the persons felling trees. These other risks must be given due attention and priority.

4.4.2 Safety of Eskom/Contractor Personnel

Normative Reference: 34-190 – Access to farms (includes strategy on dealing with game farms):

No person must endanger his/her life or the life of another staff member by entering a property where there is a reasonable suspicion that dangerous animals such as lions, tigers, leopards, rhinoceroses, buffaloes, etc., are present.

Staff should seek to enter such properties accompanied by security staff from the game farm. It is also advised that staff working in and around game farms be trained on how to identify problem animals and how to behave to ensure the safety of his/her life as well as that of another employee.

Whenever any person employed by Eskom or its mandatories gain knowledge of the introduction of dangerous animals in an area where Eskom infrastructure exists, such knowledge shall be conveyed to Land Development for mapping, investigation and/or measuring and to the responsible manager in conjunction with the Customer Services Area Manager to engage the land- owner.

4.4.3 Vegetation Control Standards outside Plantations

Normative Reference: EPC 32-247 – Environmental Procedure, Procedure for vegetation clearance and maintenance within overhead power line servitudes and on Eskom owned land:

- a) Trees growing to a height in excess of the horizontal distance of that tree from the nearest conductor which are identified as a risk to safe operation of the power line shall be treated and prevented from growing in such a manner as to endanger the line should they fall. (See corridor specification for clarity)
- b) All vegetation posing a risk to the line or preventing access for maintenance purposes shall be managed.
- c) Various species of indigenous vegetation are protected by law in terms of which is necessary to obtain a permit from the relevant authority, in order to cut them. The list of "... protected tree species under the national forest act, 1998 (Act No 84 of 1998)" Gazetted by the department of Agriculture, Forestry and Fisheries from time to time: will be sourced and referenced by the contractor in lieu of the specific requirements in terms of protected species. No protected vegetation as per above act shall be cut without the required permits or licences

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- d) Where there is any doubt as to whether a plant species is protected or not, the Department of Agriculture, Forestry and Fisheries (DAFF) or the local Eskom environmental practitioner in that Business Unit shall be consulted.
- e) Alien vegetation in servitude shall be managed in terms of the Regulation GNR.1048 of 25 May 1984 (as amended) issued in terms of the Conservation of Agricultural Resources Act, Act 43 of 1983. In Terms of these regulations, Eskom shall "control" i.e. to combat category 1, 2 and 3 plants to the extent necessary to prevent or to contain the occurrence, establishment, growth, multiplication, propagation, regeneration and spreading such plants within servitude areas or land owned by Eskom.
- f) On sites owned by Eskom, all vegetation proclaimed in terms of the Regulation shall be subject to control in terms of legislation.
- g) Control programs should be included as part on the Environmental Management Plans, and will need to be area and species specific. Due to the nature of alien vegetation, this programmer implementation may need to be more frequent than the three year interval recommended for indigenous vegetation. Alien vegetation can grow at rates significantly faster than 1 (one) meter per year.
- h) Care must be taken to ensure alien vegetation is not spread as a result of vegetation management processes through the transport of seeds or other vegetative material from one site to another.
- i) The responsibility for obtaining the appropriate permit/s from the relevant authority will be that of Eskom.
- j) Indigenous vegetation which does not interfere with the safe operation of the power line should be left undisturbed.
- k) Vegetation should be trimmed where it is likely that it intrudes on the minimum vegetation clearance distance, (MVCD) or will intrude on this distance before the next scheduled clearance.

4.4.4 Vegetation Control Standards In plantations or forests

Normative Reference: 0029E – maintenance and management agreement in forest plantation areas and servitude areas: The following clause in Eskom's Standard Servitude / Wayleave Agreement shall be adhered to:

- a) No tree shall be allowed to grow to a height in excess of the horizontal distance of that tree from the nearest conductor of any power line or to grow in such a manner as to endanger the line should it fall or be cut down."
- b) Where the Servitude/Wayleave Agreement makes reference to a specific width within which no trees may be deliberately grown, then this restriction width will apply.
- c) Acceptable vegetation that does not grow high enough to cause interference with overhead power lines, or cause a fire hazard to any plantation, should not be cut or trimmed, unless it is growing in the road access area and then only at the discretion of Eskom, provided that this shall not preclude the preparation of fire belts as contemplated in this agreement.
- d) Where clearing for access purposes is essential, the width to be cleared shall be to a maximum of 8 meters.
- e) Deep valleys and sensitive areas that do not allow vehicle access, or legally protected areas are not to be cleared of acceptable vegetation provided the acceptable vegetation poses no threat to the operation and reliability of the power line.

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- f) Clearing of acceptable vegetation for tower positions shall be the minimum required for the specific tower, regard being had for the provisions of clause 4.8, and the costs shall be for Eskom's account.
 - g) Where power line servitudes enter plantations from non-timber farmlands or on either side of a road or river, if the natural vegetation is such that a visual barrier cannot be left, the planting of suitable indigenous vegetation may be considered to provide aesthetic screening.
 - h) Trees, shrubs, grass, natural features and topsoil which are not removed shall be protected from damage during operations. Scalping of the earth or any unnecessary disturbance shall not be allowed in any clearing operation.
 - i) Specifications for necessary re-vegetation of an area shall be determined jointly by Eskom and the Grower, and implemented on an area specific basis by Eskom in consultation with the Grower.
 - j) Rivers, water courses and other water bodies shall be kept clear of felled trees, bush cuttings and debris. Where possible, the integrity of riverbanks shall be maintained and shall be dealt with in accordance with the provisions of clause 4.11 if they are disturbed or damaged.
 - k) The Grower shall have the right to retain cut vegetation, in which case it shall attend to its removal. If not, the cut vegetation shall be removed by Eskom in a manner that is mutually acceptable.
 - l) Neither party shall undertake controlled burning or the making of open fires within or near servitudes unless agreed upon in writing by both parties in this instance.

4.4.5 Fire Break and Servitude Maintenance in Plantations

Normative Reference: 0029E – maintenance and management agreement in forest plantation areas and servitude areas

- a) Eskom will inspect the servitudes as necessary and will identify areas requiring servitude maintenance, in order to comply with the requirements of this agreement.
- b) The local Eskom maintenance official will meet with the Grower's local forester to discuss the outcome of the patrols and to agree on the maintenance requirements which shall as far as possible be consistent with the Grower's forest management plans for the plantation over which the servitude passes, and shall comply with the requirements imposed in the Grower's applicable insurance policy. No agreements in this regard shall be binding unless recorded in writing and signed by both parties.
- c) At the meeting referred to above, Eskom and the Grower's local Forester shall endeavour to reach agreement as to who shall undertake the maintenance required on the servitude and the cost to be expended in respect thereof.
- d) If the Grower wishes to use any servitude as part of its firebreaks, then the following shall apply:
- e) the difference between the estimated cost to Eskom of the maintenance of the servitude in accordance with the standards prescribed by this agreement and that required to establish and maintain a firebreak, shall be for the Grower's account;
- f) in the event that the Grower undertakes the agreed maintenance on the servitude then Eskom shall pay to the Grower its share of the maintenance costs within 14 days of the completion of the relevant maintenance work;
- g) If Eskom is to undertake the maintenance work, then the Grower shall pay to Eskom its share (if any) of the maintenance costs within 14 days of the completion of the relevant maintenance work;

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- h) All payments in this regard shall be only be made against delivery of a valid original tax invoice.
- i) Eskom shall be consulted prior to controlled burning for firebreak construction. The Grower shall be liable for all damage to Eskom property caused as a result of negligence during maintenance of the servitude as a fire break to the extent liable therefor in law.
- j) Eskom shall not be liable for the cost of maintenance of the servitudes on which the 11kV and 22kV lines that exclusively supply the Grower.

4.5 Stakeholder Management

Normative Reference: EPC 32-247 – Environmental Procedure, Procedure for vegetation clearance and maintenance within overhead power line servitudes and on Eskom owned land:

4.5.1 Agreement in Forest Plantation Areas and Servitude Areas

Normative reference: 34-190 – access to farms (includes strategy on dealing with game farms):

Note: that all vegetation management within commercial forestry areas shall be done in terms of the Timber Growers Agreement, the "Maintenance And Management Agreement In Forest Plantation Areas And Servitude Areas". This document has however not been accepted by all foresters, but can be used as a guideline for future agreements. Should a deviation from below be required, a specific agreement with the Timber Growers Industry will be negotiated and contracted.

ITEM	STANDARD	FOLLOW UP
Plantation Trees	All trees or re-growth within the overturning distance or the specific tree restriction width as defined in the servitude / way leave agreement to be cut horizontally within 100mm of the ground. Stumps to be treated with herbicide. However and notwithstanding the above paragraph, where the timber growers have elected to allow plantations to encroach within these distances, then all the associated risks and responsibilities shall be borne by the Grower.	Re-growth to be treated with herbicide as necessary.
Acceptable vegetation under a power line within 6m beyond the outer phases	All acceptable vegetation that will attain a height in excess of 4m, cut horizontally within 100mm of the ground. Treat stumps with herbicide	Re-growth to be treated with herbicide as necessary.
Acceptable vegetation within the defined Servitude between the edge of the servitude or the timber whichever is the closer and 6m from the outer phase	Acceptable vegetation that will attain a height in excess of the overturning distance, cut horizontally within 100mm of the ground. Treat stumps with herbicides.	Re-growth to be treated with herbicide as necessary.
Declared weeds and invader plants within the overturning distance or the specific tree restriction width as defined in the servitude / way leave agreement	Treat with herbicide or cut at 100mm above ground level, treat stumps with herbicide.	Re-growth to be treated with herbicide as necessary.

ITEM	STANDARD	FOLLOW UP
Access routes to towers / structures	Where necessary, clear all trees and bush at ground level, treat with herbicide. Grass growth to be encouraged in collaboration with the Grower.	Re-growth to be treated with herbicide as necessary.
10m around power line structures, stays and within tower positions	Clear all trees and bush at ground level, treat with herbicide	Re-growth to be treated with herbicide as necessary.

4.5.2 Accessing private land

The Eskom contractor shall as a minimum:

- a) remain on all existing roads and tracks and within the servitude area and not deviate there from;
- b) Keep Eskom gates locked and leave property owners' gates as found;
- c) not interfere with the property owners' activities;
- d) request permission for the use of water;
- e) provide appropriate toilet facilities;
- f) not make fires;
- g) not litter;
- h) not drop fences;
- i) not collect firewood without consent; and
- j) Not disturb or remove stones/rock from the site (e.g. archaeological and heritage sites).
- k) On completion of the work, land owners shall sign-off that work was completed to their satisfaction.

4.5.3 Access to farms

Normative Reference: 34-1173 – Access to farms (Distribution, Transmission and Generation):

The mushrooming of game farms in all parts of the country brings about new challenges to Eskom such as restriction of access, safety of Eskom staff and the interaction of game and electrical infrastructure. Coupled to this is the escalating crime rate on farms, which have highlighted the need for Eskom to implement initiatives to control the movement of staff requiring access to farms. The above referenced document describes approaches to be implemented to facilitate better access to farms for all Eskom staff and contractors (performing work on behalf of Eskom). This guide will assist Eskom in facilitating access to farms through proactive communication and identification of Eskom staff and contractors as per the Eskom/AGRI-SA protocol on access to farms. The strategy for interacting with game farms depends on the purpose of the visit and is summarized below:

- a) Action: Eskom will notify customers at least 48 hours in advance through the appropriate media – either in writing, electronically or telephonically. Should its attempts to communicate fail, the work will proceed regardless.

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- b) Planning and building of new assets: Extended negotiations and interaction with the customer and adjoining property owners include supply proposals, quotations, guarantees, line route planning, and construction project planning and execution
- Action: All stakeholders must cooperate to enable Eskom to provide the customer with a project schedule reflecting the period during which the construction and commissioning activities will take place. In addition, customers may request a work order number to be verified with the contact centre.
- c) Personal visits: All visits to individual customers, i.e. sales or service- related activities, investigations (technical, non-technical), claims, etc.
- Action: Must take place by appointment
- d) Power interruption caused by external factors: Rapid power restoration without any delay is in the interest of both Eskom and the customer. This is dependent on free movement.
- Action: All Eskom staff as well as representatives of Eskom contractors will carry identity cards containing their photographs to indicate whether they are Eskom employees or Eskom contractors. In addition, customers may request a work order number to be verified with the contact centre. Vehicles must be clearly marked.
- e) Helicopter line patrols over game farming areas must be preceded by reasonable notifications to affected landowners as they are usually a disturbance to tourists and hunters visiting game farms. There is a great need to inform game farm owners timeously of planned maintenance activities. All notifications and arrangements regarding access should preferably be confirmed in writing as per 34-190 section 2.6.
- f) Game-farmers are also not in favour of motorized equipment e.g. chain saws due to noise pollution affecting hunting and game viewing activities. It is thus advisable that prior notification be issued and that their usage be restricted to what is absolutely necessary.

4.5.4 Access to Plantations

Normative Reference: 0029E – maintenance and management agreement in forest plantation areas and servitude areas

- a) It is recorded that in terms of the Servitude / Wayleave Agreements, Eskom has the right to enter and be upon the property at any time whether to perform work on the property itself or to gain access to any adjacent property.
- b) In the exercise of the rights referred to in the previous clause, Eskom/Contractor personnel shall make every effort to inform the Grower's local forester or his delegate of such entry in advance, and shall take reasonable steps to minimize the inconvenience to the Grower.
- c) Under no circumstances shall access be gained by cutting or "dropping" of fences. All gates are to be left closed and Eskom servitude gates are to be locked at all times unless otherwise requested by the Grower.

4.5.5 Restriction of access

Normative Reference: 34-190 – Access to farms (includes strategy on dealing with game farms:

All instances where access has been unduly restricted should be taken up with the Responsible Manager in consultation with the Customer Services Area Manager to ensure a normalization of the situation. The 2 lock system should also be enforced where it has been violated. The Customer Services Area Manager could bring the following to the attention of the landowner in terms of our way leave/servitude agreement:

- a) That access is being restricted.
- b) That the removal of Eskom locks and gates without prior notice and agreement are illegal.
- c) That security is required for accompaniment where the introduction of problem animals restricts access.
- d) That there is a need to use motorised equipment for bush clearing where trees pose a risk to the safe operation of the line

4.6 Safety Specification

4.6.1 Stakeholder management, relations and accountabilities

- a) The relevant Customer Network Centre (Distribution) or Customer Load Network (Transmission) will be notified of the intention to conduct vegetation management operations prior to any work being undertaken. Establish and conduct Health and Safety Committee Meetings. For further details refer to 34-316: Occupational Health and Safety Committee Systems
- b) Incorporation by Reference in Contracts: External Standards, Eskom and/or Divisional Procedural documents may be incorporated by reference into Eskom's Conditions of Contract.

4.6.2 Statutory Relationships

This procedure supplements Eskom's Conditions of Contract but shall not be considered as including all the responsibilities of Principal Contractors regarding the occupational health and safety requirements in terms of the Occupational Health and Safety Act, Act 85 of 1993.

- a) The overall responsibility for occupational health and safety requirements at the Division sites and work to be carried out on public property of Local Authorities shall remain with the Principal Contractor and his sub-contractor/s.
- b) All documents referred to in this procedure will be made available to the Principal Contractor by the Procurement Department who will consult with the necessary role players (i.e. Line Management, Risk Management, Environmental Management, and/ or other specialist as the need may be).
- c) The Client may however from time to time order variations, alternations, modifications, amendments, additions, changes, revisions, cancellations or insertions to health and safety requirements to be met by Principal Contractors, via the organisational documentation control processes, provided that such requirements are communicated in writing to the other party.
- d) Note: No extension of time will be allowed as a result of any action taken by Eskom in terms of, point c mentioned above, and the Principal Contractor shall have no claim against Eskom as a result thereof. Furthermore, no amendments to Legislation or the Regulations or reasonable amendments to Eskom's Safety and Operating procedures shall entitle the Principal Contractor to claim any additional costs incurred in complying therewith from Eskom.

- e) If a Principal Contractor considers any of the requirements in the procedure as being too onerous, exemption from specific clauses may be requested in writing through the Procurement Department who will consult with the relevant role players (i.e. Risk Management, Field Services, Major Engineering Works and Capital Programme).
- f) Any difficulty experienced with the interpretation of this procedure may be discussed at any time with the Procurement Department who will consult with the necessary role players.
- g) The OHS Act Requirements "Acknowledgement of Receipt form for Principal Contractors" shall be completed and signed by the Principal Contractor on award of the contract.

4.6.3 Felling of Dangerous Trees

4.6.3.1 Tree Felling Process

- a) A team comprising a minimum of two people will fell a dangerous tree.
- b) Where it is required for the tree to be strained with a tirlor, the team size will be increased so that a sufficient number of staff is available to operate the tensioning equipment in addition to the two persons referred to in the above bullet.
- c) The person supervising the felling of the tree will take such a position that he / she has direct control over the chain saw operator and at the same time control the extended team while having overall control over the felling and landing of the large tree.
- d) Before any tree is cut, the following will be considered and a risk mitigation plan will be devised and agree by all team members:
 - i. The dimensions of the tree i.e. size and reach\
 - ii. The risks to services and facilities i.e. roads and telecommunication lines
 - iii. The electrical risks involved
 - iv. Establishing the probable direction of fall of the tree
 - v. Formulating the tactical steps required to manage the direction and pace of the falling tree.
 - vi. Ensuring compliance to the General Risk Mitigation Requirements referred to in this standard.

4.6.3.2 Dangerous trees defined

- a) **Dead Trees:** Trees like Black Wattle and Blue Gum are alien species and consume water at a rate higher than indigenous trees. They have been targeted by "Working for Water" as undesirable species and are systematically killed by ring barking or poisoning.

NOTE: Tall dead and dry trees are impossible to fell safely and any attempt to bring down under controlled conditions is prohibited because they vibrate when cut with a saw or chopped with an axe. These tremors result in large, high up branches becoming dislodged and presenting harm to any person standing under the tree.

- b) **Trees in the proximity of other services or facilities:** Due to the long life expectancy of trees, various structures and/or services are positioned near trees over time. This may include telecommunication and power lines, buildings and structures, roads, water services, fences and even other trees. This includes underground services prone to shock damage.

- c) Trees present the following hazards:
- i. It is often difficult to establish the exact fall direction and reach of the tree and thus it is difficult to estimate to a sufficient degree of accuracy the risk involved.
 - ii. A tree which falls onto other trees or objects is difficult to bring to ground and can cause serious harm to persons or damage equipment when not controlled. This situation must be avoided at all cost.
- d) Trees with structural damage to the heartwood of major branches or the trunk: Any deterioration of the heartwood (core) in the trunk of a tree results in its structural integrity being compromised. This makes it more dangerous for a person responsible to fell it as well as for people and assets in the vicinity since the fall direction cannot be predicted with sufficient accuracy. Cavities in tree trunks can be caused by:
- i. Pests like termites and beetles.
 - ii. Fire damage to heartwood core
 - iii. Rotting of the heartwood core
 - iv. Damage as a sapling that resulted in abnormal growth of the heartwood
 - v. Cracking or splitting of major branches.
- e) These cavities can be detected by:
- i. Visual inspection of the tree
 - ii. The lack of back pressure on the chain saw during the cutting process
 - iii. The reduction in the rate of shavings ejected by the chain saw during cutting.
- f) Trees with multi-leader trunks or major branches: Some trees develop multiple leader trunks either at ground level (resembling multiple trees growing from the same spot) or some distance up the tree. This type of growth complicates the felling process of large trees in the following ways:
- i. It hinders access to the base of the tree by the saw operator:
 - ii. It limits the fall direction that is selected
 - iii. It restricts movement and escape routes from the base of the tree if required.
- g) Trees with Hanger Branches: Trees with branches that have broken off earlier and where these branches are suspended higher in the trees may cause risk to those who fell the tree. The tree should not be felled unless the loose branches have first been removed.
- h) Dangerous Felling Environments: Over and above the risks listed above, felling dangerous trees can be complicated further by the following environmental conditions that require distinct consideration and mitigation.
- i. Roadside Work
 - ii. Tall trees which may fall in/on roads during the felling process may result in unacceptable risk to motorists or to the road surface. This procedure requires effective traffic control, which may include road closure with the assistance of the relevant traffic department. If it is anticipated that it can damage the road, the team supervisor shall collaborate with the relevant departments during the planning phase.
 - iii. Water Logged environments: When a tree is cut and there is a risk that it will fall into water, the necessary recovery equipment must be used to recover the tree safely. The additional risk of water movement must be contemplated and the risk mitigated. Where trees grow in water the following risks are to be considered and managed:

- Depth of the water
- Safe escape routes
- Safe use of machinery in the water
- Wildlife in the surroundings which may be impacted

i) Electrical Risks: Electrical power lines introduce the following risks to the process of felling trees:

- i. Any contact of the tree with live wires must be avoided as under certain conditions the fibres become electrically conductive and touch potential can be introduced to the work place. This excludes approved live work practices as any touch point between the conductor and the tree will be insulated with covers as per approved live work procedure.
- ii. Rigging equipment must be positioned in such a way that it avoids the possibility of coming into contact or close proximity to electrical networks.

j) Atmospheric Conditions: Due to the large surface area that trees present to wind, the pressure can exert significant forces on the tree. This can either be a hindrance to cutting a large tree down or it can be a resource, depending on the strength and direction of the wind.

- i. If the wind is favourable, in other words it supports the preferred fall direction of the tree, felling the tree can be carried out safely. If the opposite is true, the felling of the tree should be deferred to a date that will support the safe felling of the tree.
- ii. Rain or snow creates conditions which are not suitable to tree felling and must be avoided, except where the risk is greater by not felling the tree.
- iii. Uneven or overgrown terrain: Where the terrain is sloping, uneven, overgrown by other vegetation and / or wet so that the chain saw operator or any person supporting them cannot move freely, or where the escape in case of emergency is compromised, the area will be cleared and / or sufficiently prepared to ensure safe tree felling conditions. The tree felling process will not continue unless an escape route has been determined and is clear from any obstructions.

k) Establishing the most probable direction that a tree will fall

Estimating the Tree Centre of Gravity: The growth of trees is impacted by standing wind, damage in early life and competition with adjacent trees for sunlight. In the latter case the tree will develop more branches (weight) in a direction away from the other tall trees in the immediate vicinity.

- a) Prevailing wind: The direction and force of the prevailing wind along with the area that the tree presents to the wind will also dictate its direction of fall. Trees will tend to fall in the same direction of prevailing winds if all other factors are equal. 5
- b) Structural weakness: A visual inspection considering the position of structural weaknesses in the tree and trunk will reveal in which direction it is most likely to fall if it fails or is being felled.
- c) Growth Patterns: All else being equal, the tree will tend to fall in the opposite direction to where the trunk cross section contains the healthiest fibres.

4.6.4 Managing the Direction of fall entails:

- a) Removing large branches from the tree to alter the tree centre of gravity: Remove big branches positioned on the trunk away from the desired direction of fall. This requires accessing the branches by climbing the tree with approved techniques discussed later in this document, and cutting it with a chain or standard bow wood saw.
- b) Using cutting techniques that influence the direction of fall: A third of the tree diameter is cut with a V tilted towards the top of the tree in the desired fall direction. A felling cut is made slightly higher than the lowest level of the v-cut also for a third of the tree diameter on the opposite side of the tree to the v-cut. This ensures that the remaining third of the tree trunk provides mechanical strength to the tree and the tree will tend to fall towards the v-cut, now the weakest point.
- c) Straining the tree in the desired fall direction: The tree is secured some distance above the estimated centre of gravity with steel ropes and tensioned with a tirfor to some anchorage point a safe distance away (which in itself is not always available) to initiate and control the fall direction and initial fall pace.
- d) Inserting a wedge in the fell cut to initiate and direct the fall: A wood or synthetic wedge of suitable size and wedge angle can be inserted and hammered into the felling cut to force the tree to fall in the desired direction.

4.6.5 General Risk Mitigation

- a) The physical climbing of dead trees is prohibited immaterial of the climbing technique used.
- b) Climbing trees using ladders and/or climbing irons:
 - i. Non-conductive ladders may be positioned against a tree and used to ascend and descend the tree only if the ladder is secured to the tree as it is imperative to effect the functioning of FAS while climbing. A person supporting the ladder at the bottom is not deemed to be securing the ladder to the tree. Instead, the ladder will be lashed to the tree in accordance with Eskom standards.
 - ii. If it is required that the person leave the ladder to climb higher in the tree or cut a specific branch, the person will secure him / herself with an approved anchorage point as defined in SCSPVACL6: "Procedure For Using Fall Arrest System" and DISASABW3: "Standard For A Fall Arrest System".
 - iii. The person climbing or descending the tree, with or without a ladder, shall not hold on to a saw of any kind while doing so. Equipment will be sent up to the person in the tree with the aid of a rope and a pulley system. 6

4.7 General Health and Safety Specifications, Contract Guidelines and OHS Act Requirements

4.7.1 Working above Ground Level

- a) The Principal Contractor shall ensure that employees are issued with a Fall Arrest System as the minimum personal protective equipment in accordance with the following procedure – DPC_34-1402 Procedure for Using Fall Arrest System.
- b) The team must have an appointed Supervisor when work is performed above ground level at all times.

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- c) Ladders shall be in accordance with Eskom specifications and regular inspections shall be conducted. For further details refer to DPC_34-724: Inspection of fiberglass extension ladders.

4.7.2 Supervision:

Each Contractor construction team shall have an Authorised person in accordance with the Operating Regulations for High Voltage Systems or in accordance with the risks that have been identified when the plant is handed over by the Authorised person. The competent person shall have knowledge of the activities being performed and shall supervise the work being undertaken. (See 32-846 Operating Regulations for High Voltage Systems (1.64))

4.7.3 Working in the Vicinity of Power lines:

Where work is conducted inside the boundaries of the way leave or servitude of an existing and energized power line, the work will be conducted by a Responsible person 34-846.

4.7.4 Compliance to the Incident Management procedure (34-350):

- a) A Flash Report to be submitted within 24 hrs. after the incident to the designated Eskom Official e.g. the Project Manager, Risk Management Representative;
- b) Conduct a Preliminary Investigation within 24 hrs. after the incident;
- c) Conduct the Formal Investigation within 7 working days after the incident.

4.7.5 Non-compliance

Eskom views the following at-risk behaviour in a very serious light:

- a) Anyone disregarding any requirements contained in the OHSA, NEMA, Eskom Health, Safety, and Environmental Policies, this document, site specifications, and approved Health and Safety Plans;
- b) Anyone performing an unsafe act or creating an unsafe condition that could pose a danger to such person(s) or to others;
- c) A Principal Contractor allowing any of his/her own employees or employees of their subcontractors (including casual labourers or Labour- broker employees) to work on any site without ensuring that each employee has received proper training.

Any such person described above will be subjected to a disciplinary process, and if found guilty, this may lead to dismissal in the case of an Eskom employee, and in the case of a Principal Contractor, it may result in the cancellation of the contract and blacklisting.

4.7.6 Contractor Occupational Health and Safety Programme

- a) The Principal Contractor shall have his/her own approved Health and Safety Policy, which must be displayed, at his work site, if practical.
- b) The Principal Contractor shall formulate, implement and maintain an Occupational Health and Safety Programme, ensuring that his employees avoid any act, which may endanger their own health and safety or that of other persons who may be affected by their conduct.

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- c) All aspects concerning occupational health and safety shall be a permanent standing item on all relevant site-meeting agendas.
 - d) The Principal Contractor's Occupational Health and Safety Programme shall ensure that his/her employees and sub- contractor employees adhere to Eskom Instructions, Standards, Procedures and Operating Regulations for High Voltage Systems. The programmer shall ensure that his/her employees:
 - i. Only work above ground level under continuous and direct supervision of the contractor's appointed Supervisor,
 - ii. Wear appropriate personal protective equipment and/or clothing,
 - iii. Refrain from proceeding with the work in the absence of the appointed Supervisor; and
 - iv. Adopt Eskom Procedure on the management of substance abuse in its entirety.

4.7.7 OHS Act Legal Appointments:

The Principal Contractor shall draw up an Occupational Health and Safety structure for the contract, which will form part of his/her Occupational Health and Safety Programme. Examples of Statutory Appointments required:

- a) OHS Act Section 16(2) Employer
- b) OHS Act GMR 2 (1) Supervisor of Machinery
- c) OHS Act GMR 2 (7) Supervisor of Machinery Assistant
- d) OHS Act Section 17 Health and Safety Representative
- e) Depending on the nature of the contract the assignments will be expanded.

4.7.8 General Safety Specifications

- a) Safety at Workplaces: All appropriate precautions shall be taken:
 - i. To ensure that all workplaces are safe and without risk of injury to the health and safety of workers.
 - ii. To protect persons present at or in the vicinity of a construction site from all risks, which may arise from such site?
 - iii. All openings and other areas likely to pose danger to workers shall be clearly indicated.
- b) Means of Access and Egress: Adequate and safe means of access to and egress from all workplaces shall be provided, indicated where appropriate and maintained in a safe condition. This is particularly true for every instance where a dangerous tree is felled.
- c) Good Housekeeping on Work Sites: A suitable housekeeping programmer shall be established and continually implemented on each construction site which should make provision for the proper storage of material and equipment; and the removal of scrap, waste and debris at appropriate interval.
 - i. Loose materials, which are not required for use, should not be placed or allowed to accumulate on the site so as to obstruct means of access to and egress from workplaces and passages.

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- ii. All combustible refuse must be removed from the inside of all buildings at the close of each day. All other waste must be removed at least once a week.
 - iii. The construction site should be suitably and sufficiently fenced off and provided with controlled access points to prevent the entry of unauthorised persons.
 - iv. Waste and debris shall not be disposed of from a high place with a chute, unless the chute complies with the requirements as set out in Construction Regulation 12(6).
 - v. Material left lying about after completion of the contract will be removed by Eskom and the cost debited to the contract price.
 - vi. Eskom will not be held responsible for the loss of any material dealt with in this manner.
 - vii. The Principal Contractor must ensure that the work site is kept tidy for the duration of the contract.
 - viii. Construction sites in built- up areas or along traffic routes should be fenced off to prevent the entry of unauthorised persons.
 - ix. Visitors should not be allowed access to construction sites unless accompanied by or authorized by a competent person and provided with the appropriate protective equipment.
 - x. Fire extinguishing equipment shall be properly maintained and inspected at suitable intervals by a competent person.
 - xi. Access to fire extinguishers such as hydrants, portable extinguishers and connections for hoses shall be kept clear at all times.
 - xii. All Supervisors and a sufficient number of workers shall be trained in the use of fire extinguishing equipment, so that adequately trained personnel are readily available during all working periods.
 - xiii. Workers shall be suitably trained in the action to be taken in the event of fire, including the use of means of escape.
 - xiv. Where appropriate, safety symbolic signs shall be provided to indicate clearly the direction of escape in the case of fire.
 - xv. Sufficient and suitable means to give warning in case of fire shall be provided, where this is necessary, to prevent danger. Such warning should be clearly audible in all parts of the site where persons are liable to work. There should be an effective evacuation plan so that all persons are evacuated speedily without panic and accounted for and all plant and processes shut down.
 - xvi. Notices should be posted at conspicuous places indicating: the nearest fire alarm and the telephone number and address of the nearest emergency services.

d) Use and Storage of Flammable Liquids, Solids and Gases

- i. The Principal Contractor shall ensure that none of his/her employees work in an area where the vapour of any flammable liquid, solid or gas generated is of such an extent that a potential fire or explosion hazard is created, endangering the safety of any persons.
- ii. The Principal Contractor shall ensure that all flammable liquids, solids and gases are stored in stores built for that purpose.
- iii. Secure storage areas should be provided for flammable liquids, solids and gases in order to prevent trespassers.
- iv. Flammable liquids on site should be stored in a well- ventilated, reasonably fire resistant container, cage or room and kept locked with proper access control measures in place.
- v. When decanting, the metal containers should be bonded or earthed.
- vi. The appropriate type and adequate amount of fire- fighting equipment shall be installed in suitable locations around the flammable liquid, solid or gas store/handling areas.

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- vii. The appropriate safety symbolic signs shall be affixed at all entrances/handling areas, prohibiting smoking and naked flames.
- viii. Combustible materials such as packing materials, sawdust, greasy/oily waste and scrap wood or plastic should not be allowed to accumulate in workplaces but should be kept in closed metal containers in a safe place.

e) First Aid and Facilities

- i. The Principal Contractor shall ensure that a sufficient number of trained first aiders are appointed for the number of employees on site.
- ii. Taking into account the type of injuries that are likely to occur on site, the nature of the activities performed and the number of employees at such a work site, the Principal Contractor shall ensure that the first aid box contains the minimum requirements in accordance with the General Safety Regulations.
- iii. First aid kits or boxes shall not contain anything besides material for first aid emergencies.

f) Hazardous Chemical Substances (Act 36 of 1947)

- i. If the Principal Contractor's activities in performing the work, involve the handling of any hazardous chemicals or substances the Contractor shall implement such precautionary measures as may be required by the relevant legislation.
- ii. The Principal Contractor must conduct an assessment to determine which employees are exposed to which hazardous chemical substances and shall provide the affected employees with the required training and personal protective equipment.
- iii. Training shall also be provided by the Principal Contractor on the correct use, care and limitations of such personal protective equipment.
- iv. In terms of Act 36 of 1947, only a registered pest control operator may apply herbicides on a commercial basis. All commercial application of herbicides shall be carried out under the supervision of a registered pest control operator. The following was agreed with the Registrar in August 2005.

In cases when Eskom staff apply herbicides on servitudes, then they must undertake this under the "management" of a registered PCO. There is no need for a PCO to be on- site at all times in this particular case.
- v. A daily register shall be kept of all relevant details of herbicide usage as stipulated in Act 36 of 1947.

g) Personal Protective Equipment

- i. The provision and use of personal protective equipment by employees is the Principal Contractor's responsibility. The Contractor shall be responsible to ensure that such equipment is worn at all material times.
- ii. It is also the responsibility of the Principal Contractor to do a risk assessment to establish what type of PPE his employees are required to wear based on the nature of the hazard and the type, range and performance of the protection required.
- iii. The Principal Contractor shall ensure that contractor employees are trained in the correct use, care, maintenance and limitations of PPE.
- iv. Workers working alone on construction sites in confined spaces, enclosed premises or in remote or inaccessible places should be provided with an appropriate alarm and the means to rapidly summons assistance in an emergency.
- v. All personal protective clothing provided by the Principal Contractor to his/her employees should clearly display its' Company logo.
- vi. Construction Welfare Facilities

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- vii. An adequate supply of wholesome drinking water should be provided at or within reasonable access of every construction site
 - viii. The following facilities should, depending on the number of workers and the duration of the work, be provided, kept clean and maintained at or within reasonable access of every construction site:
 - ix. Sanitary and washing facilities or showers.
 - x. Facilities for changing and for the storage and drying of clothing.
 - xi. Men and women workers should be provided with separate sanitary and washing facilities.
 - h) Information and Training
 - i. The training of Principal Contractor employees in occupational health and safety matters relevant to their work is the responsibility of the Principal Contractor, unless other arrangements have been made contractually.
 - ii. The Principal Contractor shall ensure that his officials and employees are acquainted with all relevant provisions of the Occupational Health and Safety Act, the Regulations and the requirements of all relevant Environmental Legislation.
 - iii. The Principal Contractor shall provide his/her employees with information on potential health and safety hazards to which they may be exposed at their workplace.
 - iv. The Principal Contractor shall instruct and train his/her employees in the measures available for the prevention, control and protection against those hazards.
 - v. No person shall be employed in any work at a construction site unless that person has received the necessary information, instruction and training so as to be able to do the work competently and safely.
 - vi. The information, instruction and training should be given in a language understood by the worker and written, oral, visual and participative approaches should be used to ensure that the worker has assimilated the material.
 - vii. The Principal Contractor shall provide his employees with all personal protective equipment and the appropriate tools required for the safe and proper execution of the work.
 - viii. The Principal Contractor shall, if requested to do so by the Procurement Department, demonstrate to the satisfaction of the Risk Management Department, that his employees and any sub- contractors have completed site and job orientation and any other qualifications and safety training that may be required by Eskom.
 - ix. The Project Manager shall ensure that the Principal Contractor and his staff undergo compulsory on site safety induction prior to commencing work on Eskom work sites.
 - i) Symbolic Safety Signs: The Principal Contractor shall display all the necessary health and safety warning signs in accordance with the identified hazards for the applicable work site. (General Administration Regulation 13)
 - j) Communication: The Principal Contractor shall have a system in place to ensure the immediate communication to his/her employees and the on-site application, of any new Legislation, Regulations or relevant Eskom Standard that may come into effect during the course of the contract.
 - k) Reporting of incidents and accidents
 - i. Incidents, accidents and diseases shall be reported to the relevant authorities as stipulated in the Occupational Health and Safety Act, the Compensation for Occupational Injuries and Diseases Act and the various Environmental Legislation.

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- ii. These incidents shall also be reported to the Project Manager, within 24 hours after the incident, who will be responsible for reporting it to the relevant Eskom Divisional Risk Manager.
 - iii. The Principal Contractor shall collect all safety- related statistics and shall report it to the Eskom Project Manager at the end of each month.
 - l) Investigations of incidents and accidents
 - i. All incidents and accidents shall be investigated as stipulated in the Occupational Health and Safety Act.
 - ii. Thereafter corrective actions and recommendations agreed upon shall be followed-up on to assess the effectiveness of the remedial measures taken.
 - iii. Damage Incidents: All damage to Eskom or Contractor buildings, structures, vehicles equipment and the environment shall be reported to the Project Manager and investigated promptly by the Contractor to ensure that action is taken to minimize possible production delays.
 - iv. Monthly Incident/Accident Statistical Information Reports: At the end of each month the Principal Contractor on site shall submit the following information to the Project Manager and forward a copy to the relevant Eskom Risk Co- coordinator/Practitioner.
 - m) Injury types
 - i. The number of fatal incidents.
 - ii. The number of diagnosed and reported occupational diseases.
 - iii. The number of disabling injuries.
 - iv. The number of medical incidents.
 - v. The number of first aid incidents
 - n) Incident types
 - i. The number of electrical contact incidents.
 - ii. The number of public incidents.
 - iii. The number of vehicle incidents.
 - iv. The number of environmental incidents.
 - v. The number of damage incidents.
 - vi. The number of near-miss incidents.
 - vii. The Principal Contractor shall, briefly, provide the relevant details for each incident reported monthly.
 - o) The Identification of Occupational Health and Safety Hazards: The Principal Contractor shall, before proceeding with work, visit and inspect the site and shall establish whether there are any additional hazards to the health and safety of persons involved, in any work, which is to be performed there. The Principal Contractor shall report any additional hazards identified to the Project Management Clerk of Works.
 - p) Each person working on a site or visiting a site, and the surrounding community shall be made aware of the dangers likely to arise from operations at the site and the precautions to be observed to avoid or minimise those dangers. The necessary signage shall be posted at all times.
 - q) On Site Risk Assessments: A risk assessment shall be conducted in accordance with Regulation 7 of the Construction Regulations.

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- r) An Onsite toolbox talk including a risk assessment shall be conducted prior to the commencement of work. The team leader, after conducting pre-task planning and after facilitating the onsite risk assessment shall share all the tasks at hand, the identified risks and control measures with all his team members before commencing a specific task. This shall be done to ensure common understanding of the tasks, risks and control measures required.
- s) Supervision of Contractor Employees
- i. The supervision of contractor employees performing construction work shall be executed in terms of Regulation 6 of the Construction Regulations.
 - ii. The Principal Contractor shall ensure that the work is performed under the close supervision of a contractor's employee.
 - iii. The Principal Contractor shall ensure that the Supervisor has been trained to identify and understand the hazards associated with the work and have the authority to ensure that precautionary measures prescribed by the OHS Act and Eskom are implemented.
 - iv. The Principal Contractor shall strictly enforce discipline against any of his/her employees regarding non-compliance by such employee with any health and safety requirement.
 - v. The Principal Contractor shall not permit the use of any unsafe machinery, plant, equipment, vehicle (including cranes, hoists and forklifts), substances, article, material, tool, protective equipment, ladder or scaffolding on Eskom premises.
 - vi. The Principal Contractor shall not permit any of his/her employees to use any material, machinery or equipment of Eskom unless the prior written consent of the Company has been obtained.
- t) Fall Protection: The Principal Contractor shall designate a competent person to prepare a fall protection plan, which will include a risk assessment of all work carried out from an elevated position. This shall be done in accordance with Regulation 8 of the Construction Regulations and DST_34-1131: Standard for a Fall Arrest System.
- i. Suspended Platforms: The Principal Contractor shall ensure that all suspended platform work operations are carried out under the supervision of a competent person who has been appointed in writing and that all suspended platform erectors, operators and inspectors are competent to carry out their work. The Principal Contractor shall ensure that proof of their training is kept on site. (In accordance with the requirements of the Construction Regulation 15)
 - ii. Boatswain's Chairs: The Principal Contractor shall ensure that the boatswain's chair is securely suspended and constructed in such a manner to prevent any occupant from falling there from. Ensure inspections are carried out prior to use and performance tests are carried out immediately after erection and a visual inspection daily.
 - iii. Material Hoists: A Principal Contractor shall ensure that every material hoist and its tower have been constructed of sound material in accordance with the generally accepted technical standards and are strong enough and free from defects.
- u) Hand Tools and Safeguarding of Machinery. Machinery and equipment, including hand tools, should:
- i. be of a good design and construction, taking into account, as far as possible, health and safety and ergonomic principles;
 - ii. be maintained in good working order;
 - iii. be used only for the work for which they have been designed unless a use outside the initial design purpose has been assessed by a competent person who has concluded that such use is safe;
 - iv. be operated only by workers who have been authorized and given appropriate training;

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- v. Be provided with protective safety devices including guards, shields, earths, tools, barricades, vehicles, chains, ropes, and all relevant safety signs.
 - vi. As far as practicable, safe operating procedures should be established and used for all machinery and equipment.
 - vii. Operators of machinery and equipment should not be distracted while work is in progress.
 - viii. Machinery and equipment should be switched off when not in use and isolated before any major adjustment, cleaning or maintenance is done.
 - ix. Where trailing cables or hose pipes are used they should be kept as short as practicable and not allowed to create a safety hazard.
 - x. A maintenance programmer shall be implemented on all items of equipment and proper records shall to be kept of inspections, testing's and work performed on these items, as required by the Occupational Health and Safety Act.
 - xi. The Principal Contractor shall be responsible for inspecting and maintaining all his own tools, equipment and personal protective equipment.
 - xii. The Principal Contractor shall enforce the correct application, maintenance and use of the equipment and tools.
- v) Explosive Powered Tools: The use of explosive power tools shall be executed in accordance with Regulation 19 of the Construction Regulations. No Principal Contractor shall use or permit any person to use an explosive powered tool, unless:
- i. It is provided with a protective guard around the muzzle end, which effectively confines any flying fragments or particles; and
 - ii. The firing mechanism is so designed that the explosive powered tool will not function unless;
 - iii. it is held against the surface with a force of at least twice its weight; and
 - iv. the angle of inclination of the barrel to the work surface is not more than 15 degrees from a right angle;
 - v. Provided that the provisions of this sub-regulation shall not apply to explosive powered tools in which the energy of the cartridge is transmitted to the bolts, nails or similar relevant objects by means of an intermediate piston which has a limited distance of travel
- w) Stacking and Storage of Articles: The stacking and storage of articles on construction sites shall be undertaken in terms of Regulation 26 of the Construction Regulations.
- i. The Principal Contractor shall ensure that stacks are safe.
 - ii. Stacking is to be executed by a person with specific knowledge and experience of this type of work.
- x) Vessels Under Pressure: The Principal Contractor shall ensure that an Approved Inspection Authority tests all compressors and other pressure vessels the contractor intends to use on the specific site. Gas cylinders must always be stored in an upright position and properly chained. (Vessels Under Pressure Regulations 15, 16 and 17)
- y) Record Keeping: It is recommended as a result OF; the onerous requirements stemming from the Construction Regulations that Line Management (the Client requesting the service) keep copies of all Contractor health and safety plans indefinitely depending on the nature of the risks that were identified in the required risk assessments.
- z) Transportation of Staff (34-317): As the health, safety and wellbeing of all persons working in the Eskom environment is of paramount importance to the organisation, no person shall be transported on the back of open vehicles or in the canopy of a vehicle. This excludes:

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- i. persons being transported in an enclosed approved crew cab;
 - ii. or in a canopy fitted with proper seats and seat belts;
 - iii. or at the back of an open vehicle where it is not reasonably practicable, namely, where vehicles are used during line inspections on sites or private roads, or similar cases, when such vehicles must be driven at less than 30 km per hour.
 - iv. The organisation fully commits itself to achieving and maintaining best practices as it continually strives, as far as it is reasonably practical, to provide a healthy and safe working environment.
 - v. Contractors and Contractor employees are exempt from obtaining Eskom Driver permits.
 - vi. Diligently and consistently managing substance abuse practices within the workplace (Refer to DPC 34- 367);
 - vii. Effectively managing all employees utilising fleet resources by regularly checking the validity and legitimacy of driver's licences and managing changes in the employee's current health condition when brought to his/her attention;
 - viii. Working with Construction Vehicles near Power lines: Where work is conducted with the aid of a construction vehicle with an extendable articulated component or a conductive body extending device that could encroach the safe working clearance tabled in 34-846, the work is deemed close proximity work as defined and specified in 34-846.
 - ix. All construction vehicles will meet the specifications of 34-487 and all work with construction vehicles will meet the requirements of Procedure 34-445.
 - x. Where work is to be performed under a permit on Medium or High Voltage Power lines that has been opened, isolated and earthed in terms of 34-846, equipotential earthing will be applied by the contractor as specified by the Procedure 34-444 employing earths specified by Specification 34-487. Any work on apparatus will be conducted in a touch potential free working environment as required by the referenced documents.
- aa) All vehicles and earth- moving or materials- handling equipment should:
- i. be of good design and construction taking into account as far as possible ergonomic principles particularly with reference to the seat;
 - ii. be maintained in good working order;
 - iii. be properly used with due regard to health and safety;
 - iv. be operated by workers who have received appropriate training, by their employers, in accordance with legislative requirements.
 - v. All drivers have the relevant valid licences.
 - vi. The employer of all drivers and operators of vehicles and earthmoving or materials handling equipment shall ensure that the employees are medically fit, trained and tested in accordance with legislative requirements.
- bb) On all construction sites on which vehicles, earthmoving or material handling equipment are used:
- i. safe and suitable access ways should be provided for them;
 - ii. traffic should be organised and controlled as to secure their safe operation
 - iii. Adequate signalling or other control arrangements or devices should be provided to guard against danger from the movement of vehicles and earth moving or material-handling equipment. Special safety precautions should be taken for vehicles and equipment when manoeuvring backwards.
 - iv. The assistance of a trained and authorized signaller should be available when the view of the driver or operator is restricted. All involved should understand the signalling code.

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- v. The Principal Contractor shall see to it that all his employees obey road traffic signs and speed limits at all times.
 - vi. Any person ignoring or violating traffic rules on site may be prevented from driving on the site or even prevented from entering the premises.
 - vii. When earth-moving or material-handling equipment is required to operate in dangerous proximity to live electrical conductors, adequate precautions should be taken, such as isolating the electrical supply or erecting overhead barriers of a safe height.
 - viii. Preventive measures should be taken to avoid the fall of vehicles and earth- moving or materials- handling equipment into excavations or into water.
 - ix. Contractor owned construction vehicles and mobile equipment shall be in a roadworthy condition at all times in accordance with the National Road Traffic Act. (Refer to Regulation 21 of the Construction Regulations for details of all requirements under the heading of Construction vehicles and mobile plant.)
 - x. Contractor owned vehicles shall display their own company logo on their vehicles used during the duration of the Eskom contract.
- cc) Cranes: Notwithstanding the provisions of the Driven Machinery Regulations promulgated by Government Notice No.R.533 of 16 March 1990, as amended, a Principal Contractor shall ensure that where tower cranes are used:
- i. account is taken of the effects of wind forces on the structure;
 - ii. account is taken of the bearing capacity of the ground on which the tower crane is to stand;
 - iii. the bases for the tower cranes and tracks for rail- mounted tower cranes are firm and level;
 - iv. the tower cranes are erected at a safe distance from excavations;
 - v. there is sufficient clear space available for erection, operation and dismantling;
 - vi. the tower crane operators are competent to carry out the work safely; and

4.7.9 Content of the Contractor Health and Safety File

- a) Contract appointing Contractor.
- b) Approved Health and Safety Plan.
- c) The Clients/agents project organogram.
- d) Company Health and Safety Policy.
- e) Agreements as contemplated in terms of Section 37(2) of the OHS Act.
- f) Organisational organogram (detailing all statutory appointments). List all possible appointments.
- g) OHS Act, Section 17 –Appointment of the Health and Safety Representatives
- h) Specific Construction Regulation Appointments:
 - i. Regulation 4 (1) (c) –Appointment of the Principal Contractor
 - ii. Regulation 4 (5) –Appointment of the Client Agent
 - iii. Regulation 5 (3) (b) –Appointment of the Contractor
 - iv. Regulation 6 (1) –Appointment of the Construction Supervisor
 - v. Regulation 6 (6) –Appointment of the Construction Site Health and Safety Officer

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- vi. Regulation 7 (1) –Appointment of the Construction Site Risk Assessor
 - vii. Regulation 8 (1) (a) –Appointment of the Fall Protection Plan Developer
 - viii. Regulation 10 (a) –Appointment of the Formwork and Support Work Supervisor
 - ix. Regulation 11 (1) –Appointment of the Excavation Work Supervisor
 - x. Regulation 12 (1) –Appointment of the Demolition Work Supervisor
 - xi. Regulation 14 (2) –Appointment of the Scaffolding Supervisor
 - xii. Regulation 15 (1) –Appointment of the Suspended Platform Supervisor
 - xiii. Regulation 17 (8) –Appointment of the Material Hoist Inspector
 - xiv. Regulation 18 (1) –Appointment of the Batch Plant Supervisor
 - xv. Regulation 19 (2) (g) (i) – Appointment of the Explosive Powered Tools Issuer
 - xvi. Regulation 21 (1) (j) –Appointment of the Construction Vehicles and Mobile Plant Inspector
 - xvii. Regulation 22 (e) –Appointment of the Temporary Electrical Installation controller
 - xviii. Regulation 26 (a) –Appointment of the Stacking and Storage Supervisor
 - xix. Regulation 27 (h) –Appointment of the Fire Extinguisher Inspector
- i) Copies of relevant Appointment letters.
 - j) Certificates of Compliance for electrical installations.
 - k) Exemptions and/or notifications.
 - l) COID Registration
 - i. Registration number
 - ii. Letter of good standing
 - m) Risk assessments and analysis
 - i. Task and Job Listing
 - ii. Task analysis
 - iii. Risk assessments
 - iv. Risk Control Strategies
 - v. Safety work procedures
 - vi. Fall protection plan
 - vii. Fall protection risk assessment
 - viii. Scaffold plan and inspection records
 - n) In case of Modifications, the revised Health and Safety Specifications and Approved Health and Safety Plans and relevant Risk Assessments
 - o) Evacuation plans and Emergency contact details
 - p) PPE – Personal Protective Equipment
 - i. List of PPE
 - ii. Issue list
 - iii. Inspection of PPE
 - iv. Material Safety Data Sheets

- q) Training records
 - i. The relevant training records of all employees
 - ii. Health and safety induction
 - iii. Risk assessment training
 - iv. Responsible persons (ORHVS)
- r) Medical Records
 - i. Proof of medical surveillance plan
 - ii. Minutes of all site and statutory meetings
 - iii. Agenda
 - iv. Minutes
- s) Incident reporting and investigation reports
 - i. Report of incident to the Department of Labour
 - ii. Report of incident to Eskom (The Project Manager)
 - iii. Report to COID
 - iv. OHS Act Annexure 1
 - v. Proof of follow-up and close out of incident recommendations
 - vi. Non-conformance reports including Disciplinary action records pertaining to safety managements
- t) Monthly Audit reports
- u) Maintenance Plans for Machinery and equipment
- v) Project Close-out/review reports
- w) Health and Safety Plan: Copy of the Health and Safety Plan must be available on site
 - i. It must contain a copy of the organisational organogram specifically depicting the appointment of the Construction Supervisor
 - ii. OHS Act Appointments
 - iii. Copies of the relevant OHS Act appointments for that specific work site
 - iv. List of names of persons working under the supervision of the Construction Supervisor
 - v. Design and work specifications
 - vi. Technical drawings
 - vii. Technical specifications
 - viii. Relevant Eskom Policies, Standards and Procedures
 - ix. Risk analysis, Risk profiling and Job Observations
 - x. Relevant task analysis
 - xi. On-site risk assessments
 - xii. Specific written safe work procedures
 - xiii. Personal protective equipment (PPE)

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- xiv. Proof of job observations conducted
 - xv. Sub-Contractors
 - xvi. List sub-contractors and contract details (where applicable)
 - xvii. Proof of sub- contractor competencies
 - xviii. ORHVS authorisations
 - x) Inspections (site specific)
 - i. Record of relevant / required inspections (site specific)
 - ii. Occupational Health and Hygiene Surveys
 - iii. Proof of survey reports (where applicable)
 - y) Incident investigations
 - i. Copies of the incident report to the Department of Labour
 - ii. Copies of the incident reporting to Eskom (Project Manager)
 - iii. Copies of report to COID (where applicable)
 - z) Copies Of OHS Act Annexure 1's

4.8 Environmental Preservation

- a) Reference Environmental Impact Assessment Regulations (NEMA)– Where in the interest of vegetation management it is required to clear an extended area of vegetation, the EIA regulation should be consulted and where required a new environmental authorisation shall be obtained.
- b) Deep valleys and environmentally sensitive areas that restrict vehicle access, or legally protected areas, shall not be cleared of vegetation provided that the vegetation poses no threat to the safe operation and reliability of the power line. In the case of the construction of new power lines, a one (1) meter “trace-line” may be cut through the vegetation for stringing purposes only and no vehicle access shall be allowed along the cleared “trace-line”. Alternative methods of stringing across inaccessible valleys should however be considered.
- c) Measures to prevent soil erosion shall be implemented at all times. Road construction may only be undertaken following agreement of authorities and obtaining of Environmental Approvals.
- d) Rivers, watercourses and other water bodies shall be kept clear of felled trees, vegetation cuttings and debris. The integrity of riverbanks shall be maintained by only trimming parts of trees directly affecting the safe operation of the power line
- e) Aesthetic consideration shall be taken into account, especially where power lines cross major roads and rivers, or enter dense vegetation, or woodlands.
- f) Trees, shrubs, grass, natural features and topsoil, which are not removed during the vegetation control operations, shall be protected from damage during operation of the power line. Disturbance of the surface of the earth shall only be allowed for access purposes.
- g) It shall be ascertained from the property owners concerned whether they wish to retain the cut vegetation. If not, it shall be removed, or disposed of in an appropriate manner to the satisfaction of the owner. Burning shall not be permitted under any circumstance.

- h) High levels of biomass below a power line may lead to increased risk of flash over during fires. Annual fire management programs will need to be implemented to manage the risk appropriately, and it may be necessary to remove all trees and shrubs below a line.
- i) Branches and other debris resulting from pruning processes should not be left below conductors, or in areas where it will pose a risk to infrastructure.
- j) Debris shall not be burnt under any circumstances.
- k) Fires shall not be made for the purpose of chasing or disturbing indigenous fauna.

4.9 Pest Control and Application Requirements

- a) The use of herbicides shall be in compliance with the terms and conditions of The Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act 36 of 1947).
- b) Only a registered pest control operator may apply herbicides on a commercial basis. All commercial application of herbicides shall be carried out under the supervision of a registered Pest Control Officer who shall be present on site.
- c) Where a worker is likely to be exposed to any chemical, physical, biological hazard/agent and climatic conditions to such an extent that it may be dangerous to his/ her health, appropriate preventive measures shall be taken against such exposure.
 - i. The preventive measures referred to in paragraph (a) should place emphasis on the need to eliminate or reduce the hazard at the source and in particular should require:
 - ii. The replacement of hazardous substances by harmless or less hazardous substances wherever possible;
 - iii. Technical measures applied to the plant, machinery, equipment or process;
 - iv. Control the release of harmful agents or chemicals into the working environment;
 - v. Training in manual lifting;
 - vi. Appropriate protection against climatic conditions likely to jeopardize health;
 - vii. Proper working posture when workers are required to work in fixed working positions or when they are carrying out repetitive work;
 - viii. Where workers are required to enter any area in which toxic or harmful substances may be present, or in which there may be an oxygen deficiency, or a flammable atmosphere, adequate measures shall be taken to guard against danger.
 - ix. Waste shall not be destroyed or otherwise disposed of on a construction site in a manner, which is liable to be injurious to health.
 - x. The employer should make arrangements for the identification and assessment by competent persons of health hazards presented by the use of different operations, plant, machinery, equipment, substances and radiations at the construction site and takes appropriate prevention and control measures against the identified health risks in conformity with legislative requirements.

Note: Where it is not possible to comply with the above mentioned sub-paragraphs, other effective measures, including the use of personal protective equipment and clothing shall be applied.

4.10 Technical Reporting Requirements

The invoice and production reporting requirement will include the following:

- a) The Production Report will include the following detail per line segment (can be ring fenced by referencing the pole numbers on the Biome perimeter) exposed to the specific biome. (Pole x to z))
- b) The Surface area cleared or treated in m2
- c) Biome type treated
- d) Vegetation control activity applied (Mechanical tree/scrubs/reeds/grass harvest and removed and/or or Pest Control applied
- e) Submission of the relevant permit or copy thereof for the area treated
- f) Copies of the Land owner agreements or instructions signed
- g) Advise of the optimal duration to the next maintenance activity cycle based on the vegetation type in the biome
- h) Pest Control application Certificate (Chemical description, volumes and area in which applied.
- i) Reporting and requesting outages for the cutting of trees that is encroaching the minimum safety clearance
- j) Health and Safety Incident report if applicable

Reporting any access restrictions preventing work to be performed or completed.

4.11 Contractor Classification and licencing by Eskom

All prospective contractors will submit their credentials to be licenced for the type and classification as an approved Vegetation Management Service Provider according to the groups listed below. Only then will a Service Provider be considered for a contract.

4.11.1 The following terms shall apply

- a) A company will be licenced by Eskom according to its capacity and technical competencies in one or more classes. The company shall licence every team according to its capacity and technical competences in one or more classes.
- b) A portfolio of evidence for every member in the team shall be maintained in the site safety file and the team leader shall ensure that all members comply with minimum requirements
- c) A punitive system in accordance with commercial processes shall be employed to assure safe operations, work quality and environmental preservation.
- d) Licence Card shall be valid for the duration of the contract.
- e) Auditing and assurance on site shall be the responsibility of the Ops and Maintenance Manager of the OU and shall ensure record keeping and audit trail for the card system

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4.11.2 Conformance Management

- a) Development of RAS questions to measure degree of compliance of CCS shall be investigated.
- b) Develop activity assessment form to be used to measure degree of compliance of the VMP.
- c) A KPI to measure the number and frequency of Activity Assessments to be developed.

4.11.3 License Category A (See Annexure C):

- a) Level 1. Grass cutting
- b) Level 1 A. Tractor user
- c) Level 2. Brush and low risk tree cutting
- d) Level 3. High risk tree cutting

4.11.3.1 Licence Category B:

- a) Level 1. Herbicide applicators
- b) Level 2. Fire Management

Annex A - Impact assessment (Normative)

Impact assessment form to be completed for all documents.

A1. Guidelines

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

A2. Critical points

A6.1 This specification Nationalise the Vegetation Services Specification for Contractors and Eskom recruitment, selection, quality control, safety management and commercial processes to enhance contract management and service delivery.

A6.2 This Specification include and direct the minimum requirement of the Occupational health And Safety Specification issued to contractors and Bio-divercity and Land Use management regulation applicable.

A6.3 Impact on stock holding and depletion of existing stock prior to switch over.

Comment: None

A6.4 When will new stock be available?

Comment: Not applicable

A6.5 Has the interchangeability of the product or item been verified - i.e. when it fails is a straight swop possible with a competitor's product?

Comment: Not applicable

A6.6 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: Not applicable

A6.7 Provide details of any comments made by the Regions regarding the implementation of this document.

Comment: (N/A during commenting phase)

Annex A
(continued)

A3. Implementation timeframe

A3.1 Time period for implementation of requirements.

Comment: Vegetation contracting in the 2013 financial year

A3.2 Deadline for changeover to new item and personnel to be informed of DX wide change-over.

Comment: 2015

A4. Buyers Guide and Power Office

A4.1 Does the Buyers Guide or Buyers List need updating?

Comment: No

A4.2 What Buyer's Guides or items have been created?

Comment: None

A4.3 List all assembly drawing changes that have been revised in conjunction with this document.

Comment: None

A4.4 If the implementation of this document requires assessment by CAP, provide details under 5

A4.5 Which Power Office packages have been created, modified or removed?

Comment: Not applicable

A5. CAP / LAP Pre-Qualification Process related impacts

A5.1 Is an ad-hoc re-evaluation of all currently accepted suppliers required as a result of implementation of this document?

Comment: Not applicable

A5.2 If NO, provide motivation for issuing this specification before Acceptance Cycle Expiry date.

Comment: This process is a Strategic Sourcing by Commercial and Procurement.

A5.3 Are ALL suppliers (currently accepted per LAP), aware of the nature of changes contained in this document?

Comment: Not applicalbe

Annex A
(continued)

A5.4 Is implementation of the provisions of this document required during the current supplier qualification period?

Comment: No

A5.5 If Yes to 5.4, what date has been set for all currently accepted suppliers to comply fully?

Comment: Not applicable

A5.6 If Yes to 5.4, have all currently accepted suppliers been sent a prior formal notification informing them of Eskom's expectations, including the implementation date deadline?

Comment: Not applicable

A5.7 Can the changes made, potentially impact upon the purchase price of the material/equipment?

Comment: Not applicable

A5.8 Material group(s) affected by specification: (Refer to Pre-Qualification invitation schedule for list of material groups)

Comment: Not applicable

A6. Training or communication

A6.1 Is training required?

Comment: No

A6.2 State the level of training required to implement this document. (E.g. awareness training, practical / on job, module, etc.)

Comment: Not applicable

A6.3 State designations of personnel that will require training.

Comment: Not applicable

A6.4 Is the training material available? Identify person responsible for the development of training material.

Comment: Not applicable

A6.5 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: Not applicable

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Annex A
(continued)

A6.6 Was Technical Training Section consulted w.r.t module development process?

Comment: Not applicable

A6.7 State communications channels to be used to inform target audience.

Comment: Not applicable

A7. Special tools, equipment, software

A7.1 What special tools, equipment, software, etc will need to be purchased by the Region to effectively implement?

Comment: None

A7.2 Are there stock numbers available for the new equipment?

Comment: Not applicable

A7.3 What will be the costs of these special tools, equipment, software?

A8. Finances

A8.1 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:

Budgets provided for in the Strategic Sourcing for vegetation management at national level Allocation to Operating Units will arise from the National Contract establishment

Impact assessment completed by:

Name: Koos Kraftt

Designation: Senior Consultant

Annex B - Vegetation Type and Activity Table

BIOME	Vegetation Type	Plant Types	Biomass	Fire Management	Vegetation activity
FOREST	Afromontane	Tree, Grass, Scrubs	Woody, Dense		Cycle 1: Harvest trees to standard, clear scrubs for access. Apply herbicide to stumps and inhibit germination. The access width in accordance with the Corridor Specification in this contract. the contractor will be paid square meter (m²) Cycle 2: Harvest new growth and apply herbicide to stumps and herbicide for germination control only (Cycle 2 must follow cycle 1 determined by the biome type and advised by the PCO of the contractor) Cycle 3: Harvest young tree growth, clear scrubs for access and apply herbicides as required.
	Sand Forest	Tree, Grass, Scrubs	High Density, Woody		Cycle 1: Harvest trees to standard, clear scrubs for access. Apply herbicide to stumps and inhibit germination. The access width in accordance with the Corridor Specification in this contract. the contractor will be paid square meter (m²) Cycle 2: Harvest new growth and apply herbicide to stumps and herbicide for germination control only (Cycle 2 must follow cycle 1 determined by the biome type and advised by the PCO of the contractor) Cycle 3: Harvest young tree growth, clear scrubs for access and apply herbicides as required.
	Coastal Forest and Plantations	Tree, Grass, Scrubs	High Density, Woody		Cycle 1: Harvest trees to standard, clear scrubs for access. Apply herbicide to stumps and inhibit germination. The access width in accordance with the Corridor Specification in this contract. the contractor will be paid square meter (m²) Cycle 2: Harvest new growth and apply herbicide to stumps and herbicide for germination control only (Cycle 2 must follow cycle 1 determined by the biome type and advised by the PCO of the contractor) Cycle 3: Harvest young tree growth, clear scrubs for access and apply herbicides as required
GRASSLAND	Moist Upland Grassveld	Grass, tree, shrubs	Medium Density		Cycle 1: Harvest trees to standard, clear scrubs for access. Apply herbicide to stumps and inhibit germination. The access width in accordance with the Corridor Specification in this contract. the contractor will be paid square meter (m²) Cycle 2: Harvest new growth and apply herbicide to stumps and herbicide for germination control only (Cycle 2 must follow cycle 1 determined by the biome type and advised by the PCO of the contractor) Cycle 3: Harvest young tree growth, clear scrubs for access and apply herbicides as required
	Montane Grassland and Scrubland	Grass, shrubs	Low density, Light woody		Cycle 1: Clear scrubs for access as a routine activity. Cycle 2 Clear new scrub growth and do germination control

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	Alti Mountain Grass Land	Grass, shrubs	Low density, Light woody		Cycle 1: Clear scrubs for access as a routine activity. Cycle 2 Clear new scrub growth and do germination control
	Moist Clay Highveld Grassland	Grass,	Low density, No-woody		Cycle 1: Clear scrubs for access as a routine activity. Cycle 2 Clear new scrub growth and do germination control
	Moist Cold Highveld Grassland	Grass, shrubs	Low density, Non- Woody		Cycle 1: Clear scrubs for access as a routine activity. Cycle 2 Clear new scrub growth and do germination control
NAMA KAROO	Great Nama Karoo	Grass, Scrubs	Non- woody, Light density		Cycle 1: Clear scrubs for access as a routine activity. Cycle 2 Clear new scrub growth and do germination control
	Bushmanland Nama Karoo	Scrubs,	Non- woody, Light density		Clear scrubs for access as a routine activity. Cycle 2 Clear new scrub growth and do germination control
	Orange River Nama Karoo	Tree, Grass, Scrubs	Medium woody, Light Density		Cycle 1: Harvest trees to standard, clear scrubs for access. Apply herbicide to stumps and inhibit germination. The access width in accordance with the Corridor Specification in this contract. the contractor will be paid square meter (m ²) Cycle 2: Harvest new growth and apply herbicide to stumps and herbicide for germination control only (Cycle 2 must follow cycle 1 determined by the biome type and advised by the PCO of the contractor) Cycle 3: Harvest young tree growth, clear scrubs for access and apply herbicides as required.
	Central Lower Nama Karoo	Scrubs, Grass, Tree	Medium Density		Cycle 1: Harvest trees to standard, clear scrubs for access. Apply herbicide to stumps and inhibit germination. The access width in accordance with the Corridor Specification in this contract. the contractor will be paid square meter (m ²) Cycle 2: Harvest new growth and apply herbicide to stumps and herbicide for germination control only (Cycle 2 must follow cycle 1 determined by the biome type and advised by the PCO of the contractor) Cycle 3: Harvest young tree growth, clear scrubs for access and apply herbicides as required.
SAVANNA	Coastal Bushveld	Tree, Grass,	Medium Density,		Cycle 1: Harvest trees to standard, clear scrubs for access. Apply herbicide to stumps and inhibit germination. The access width in accordance with the Corridor Specification in this contract. the contractor will be paid square meter (m ²)

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	Grassland	Scrubs	Medium woody		Cycle 2: Harvest new growth and apply herbicide to stumps and herbicide for germination control only (Cycle 2 must follow cycle 1 determined by the biome type and advised by the PCO of the contractor) Cycle 3: Harvest young tree growth, clear scrubs for access and apply herbicides as required.
	Coast Hinterland Bushveld	Tree, Grass, Scrubs	High Density, Woody		Cycle 1: Harvest trees to standard, clear scrubs for access. Apply herbicide to stumps and inhibit germination. The access width in accordance with the Corridor Specification in this contract. the contractor will be paid square meter (m²) Cycle 2: Harvest new growth and apply herbicide to stumps and herbicide for germination control only (Cycle 2 must follow cycle 1 determined by the biome type and advised by the PCO of the contractor) Cycle 3: Harvest young tree growth, clear scrubs for access and apply herbicides as required.
	Clay Thorn Bushveld	Tree, Grass, Scrubs	High Density, Woody		Cycle 1: Harvest trees to standard, clear scrubs for access. Apply herbicide to stumps and inhibit germination. The access width in accordance with the Corridor Specification in this contract. the contractor will be paid square meter (m²) Cycle 2: Harvest new growth and apply herbicide to stumps and herbicide for germination control only (Cycle 2 must follow cycle 1 determined by the biome type and advised by the PCO of the contractor) Cycle 3: Harvest young tree growth, clear scrubs for access and apply herbicides as required
	Kalahari Mountain Bushveld	Tree, Grass, Scrubs	Low Density, Woody		Cycle 1: Harvest trees to standard, clear scrubs for access. Apply herbicide to stumps and inhibit germination. The access width in accordance with the Corridor Specification in this contract. the contractor will be paid square meter (m²) Cycle 2: Harvest new growth and apply herbicide to stumps and herbicide for germination control only (Cycle 2 must follow cycle 1 determined by the biome type and advised by the PCO of the contractor) Cycle 3: Harvest young tree growth, clear scrubs for access and apply herbicides as required
	Kalahari Plains Thorn Bushveld	Tree, Grass, Scrubs	Woody, Medium Density		Cycle 1: Harvest trees to standard, clear scrubs for access. Apply herbicide to stumps and inhibit germination. The access width in accordance with the Corridor Specification in this contract. the contractor will be paid square meter (m²) Cycle 2: Harvest new growth and apply herbicide to stumps and herbicide for germination control only (Cycle 2 must follow cycle 1 determined by the biome type) Cycle 3: Harvest young tree growth, clear scrubs for access and apply herbicides as required.
	Kimberly Thorn Bushveld	Tree, Grass, Scrubs	Woody, Low density		Cycle 1: Harvest trees to standard, clear scrubs for access. Apply herbicide to stumps and inhibit germination. The access width in accordance with the Corridor Specification in this contract. the contractor will be paid square meter (m²) Cycle 2: Harvest new growth and apply herbicide to stumps and herbicide for germination control only (Cycle 2 must follow cycle 1 determined by the biome type and advised by the PCO of the contractor) Cycle 3: Harvest young tree growth, clear scrubs for access and apply herbicides as required.
SUCCULENT	Lowland (veld?)	Scrubs	Non-woody,		Clear scrubs for access as a routine activity.

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KAROO	Succulent Karoo		Light density		Cycle 2 Clear new scrub growth and do germination control
	Little Succulent Karoo	Grass, Scrubs, trees	Non-woody, Light density		Cycle 1: Harvest trees to standard, clear scrubs for access. Apply herbicide to stumps and inhibit germination. The access width in accordance with the Corridor Specification in this contract. the contractor will be paid square meter (m²) Cycle 2: Harvest new growth and apply herbicide to stumps and herbicide for germination control only (Cycle 2 must follow cycle 1 determined by the biome type and advised by the PCO of the contractor) Cycle 3: Harvest young tree growth, clear scrubs for access and apply herbicides as required.

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Annex C - Minimum Requirements for Vegetation Management Contractors**Category 1 – Level 1: Grass Management**

Safety Specification (as per the Occupational Health and Safety Act, Act 85 of 1993)	Training	Technical competencies	Environmental legal requirements	Relevant Eskom policies, procedures and standards
Company Health And Safety Policy	i) Training records i. the relevant training records of all employees ii. Health and safety induction iii. Risk assessment training iv. Responsible persons (orhvs)	Knowledge of the OHS Act requirements for safety and health	Contractor representative to have attended the Eskom environmental law course.	34-190: Access to farms (includes strategy on dealing with game farms)
Approved Health And Safety Plan	ORHVS AUTHORISATIONS & training as required	Knowledge and identification of national protected tree species		34-350 : Compliance to the incident management procedure
Agreements as contemplated in terms of section 37(2) of the OSH Act.	Risk assessment training (including on-site)	Fire management skills (preventative measures as well as control measures in the case of fire occurrence)		34-146: Compliance to the operating regulations for high voltage systems/ authorizations standard
OSH Act, Section 17 –Appointment Of The Health And Safety Representatives	Fire management training - prevention and mitigation of fire / use of related equipment	Knowledge of Soil erosion management		34-227: Pre-task planning and feedback process
If applicable, Specific Construction Regulation Appointments				DMN 34-100: Work with petrol driven pruners - on ground level and from a bucket attached to a vehicle mounted crane/aerial device

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Safety Specification (as per the Occupational Health and Safety Act, Act 85 of 1993)	Training	Technical competencies	Environmental legal requirements	Relevant Eskom policies, procedures and standards
COID Registration	Understanding basic concepts and dangers of high voltage systems			
Risk assessments and analysis i. Task analysis ii. Risk assessments iii. Safety work procedures iv. Fall protection plan v. Fall protection risk assessment vi. Scaffold plan and inspection records ix. On-site risk assessments	Incident management training	Supervisory and management skills		34-323: Personal Protective Equipment Specification
In Case Of Modifications, The Revised Health And Safety Specifications And Approved Health And Safety Plans And Relevant Risk Assessments	First aid training	Able to report and investigate incidents, accidents and occupational health diseases		
Evacuation plans and emergency contact details	PPE (correct use of PPE, care, limitations) including Fall Arrest System	Able to undertake on-site risk assessments		34-333: Health and Safety Requirements to be met by principal contractors employed by Eskom.
Sub-contractors list sub-contractors and contract details (where applicable) proof of sub- contractor competencies		Able to perform regular required audits		
Provide risk-based primary emergency care/first aid in the workplace		Knowledge to undertake regular inspections on the maintenance of tools and machinery		34-1164: Medical Surveillance

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Safety Specification (as per the Occupational Health and Safety Act, Act 85 of 1993)	Training	Technical competencies	Environmental legal requirements	Relevant Eskom policies, procedures and standards
PPE – personal protective equipment requirements i. List of PPE ii. Issue list iii. Inspection of PPE iv. Material safety data sheets	Site health and safety induction	Administrative and document management skills (for all records required ito OHSA)	Eskom's SHEQ Policy (32-727)	
Good housekeeping: proper storage of all equipment and material; removal of waste, scrap and debris	Training on all potential hazards of the work place and how these can be prevented and controlled		Fertilisers, Farm Feeds, Agricultural Remedies & Stock Remedies Act, 1947 (Act No. 36 of 1947)	32-247: Procedure for vegetation clearance and maintenance within power line servitude's and Eskom owned land
Fire extinguishing equipment access and maintenance		Fire Fighting		
Availability and visibility of symbolic safety signs and safety routes				
First aid kit	Training in manual lifting and working posture	First Aid Certificate: Level 2		
Combustible materials and hazardous chemical substances should be stored adequately		Hazardous Chemical Substances and Combustible material storage and handling		Commercial Timber Growers Guideline for: Maintenance and management agreement in forest plantation areas and servitude areas
Regular inspection and maintenance of tools and machinery	Contractor representative to have attended Eskom Environmental Legislation Training.	Use Care and Maintenance of Power tools		

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Safety Specification (as per the Occupational Health and Safety Act, Act 85 of 1993)	Training	Technical competencies	Environmental legal requirements	Relevant Eskom policies, procedures and standards
Medical records j) medical records i. Proof of medical surveillance plan ii. Minutes of all site and statutory meetings iii. Agenda iv. Minutes				
Incident Reporting And Investigation Reports				
Maintenance Plans For Machinery And Equipment				

aa) Specific Construction Regulation Appointments:

- i. Regulation 4 (1) (c) –Appointment of the Principal Contractor
- ii. Regulation 4 (5) –Appointment of the Client Agent
- iii. Regulation 5 (3) (b) –Appointment of the Contractor
- iv. Regulation 6 (1) –Appointment of the Construction Supervisor
- v. Regulation 6 (6) –Appointment of the Construction Site Health and Safety Officer
- vi. Regulation 7 (1) –Appointment of the Construction Site Risk Assessor
- vii. Regulation 17 (8) –Appointment of the Material Hoist Inspector
- viii. Regulation 21 (1) (j) –Appointment of the Construction Vehicles and Mobile Plant Inspector
- ix. Regulation 26 (a) –Appointment of the Stacking and Storage Supervisor
- x. Regulation 27 (h) –Appointment of the Fire Extinguisher Inspector

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Category 1 – Level 1A: Tractor Use

Safety Specification (as per the Occupational Health and Safety Act, Act 85 of 1993)	Training	Technical competencies	Environmental legal requirements	Relevant Eskom policies, procedures and standards
Company Health And Safety Policy	i) Training records i. the relevant training records of all employees ii. Health and safety induction iii. Risk assessment training iv. Responsible persons (orhvs)	Knowledge of the OHS Act requirements for safety and health	Contractor representative to have attended the Eskom environmental law course.	34-190: Access to farms (includes strategy on dealing with game farms)
Approved health and safety plan	ORHVS AUTHORISATIONS & training as required	Knowledge and identification of national protected tree species		34-350 : Compliance to the incident management procedure
Agreements as contemplated in terms of section 37(2) of the OSH Act.	Risk assessment training (including on-site)			34-146: Compliance to the operating regulations for high voltage systems/ authorizations standard
OSH Act, section 17 –appointment of the health and safety representatives	Fire management training - prevention and mitigation of fire / use of related equipment	Fire management skills (preventative measures as well as control measures in the case of fire occurrence)		34-227: Pre-task planning and feedback process
If applicable, Specific Construction Regulation Appointments				DMN 34-100: Work with petrol driven pruners - on ground level and from a bucket attached to a vehicle mounted crane/aerial device
COID REGISTRATION				

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Safety Specification (as per the Occupational Health and Safety Act, Act 85 of 1993)	Training	Technical competencies	Environmental legal requirements	Relevant Eskom policies, procedures and standards
Risk assessments and analysis i. Task analysis ii. Risk assessments iii. Safety work procedures iv. Fall protection plan v. Fall protection risk assessment vi. Scaffold plan and inspection records ix. On-site risk assessments		Supervisory and management skills		34-323: Personal Protective Equipment Specification
In case of modifications, the revised health and safety specifications and approved health and safety plans and relevant risk assessments	Understanding basic concepts and dangers of high voltage systems	Able to report and investigate incidents, accidents and occupational health diseases		34-333: Health and Safety Requirements to be met by principal contractors employed by Eskom.
Evacuation plans and emergency contact details	Incident management training	Able to undertake on-site risk assessments		
Sub-contractors list sub-contractors and contract details (where applicable) proof of sub- contractor competencies	First aid training	Able to perform regular required audits		34-1164: Medical Surveillance
Provide risk-based primary emergency care/first aid in the workplace	PPE (correct use of PPE, care, limitations) including Fall Arrest System	Knowledge to undertake regular inspections on the maintenance of tools and machinery		
PPE – personal protective equipment requirements i. List of PPE ii. Issue list iii. Inspection of PPE iv. Material safety data sheets	Site health and safety induction	Administrative and document management skills (for all records required ito OHSA)		32-247: Procedure for vegetation clearance and maintenance within power line servitude's and Eskom owned land

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Safety Specification (as per the Occupational Health and Safety Act, Act 85 of 1993)	Training	Technical competencies	Environmental legal requirements	Relevant Eskom policies, procedures and standards
Good housekeeping: proper storage of all equipment and material; removal of waste, scrap and debris	Training on all potential hazards of the work place and how these can be prevented and controlled			
Fire extinguishing equipment access and maintenance	South African National driver's license according to applicable vehicle category			
Availability and visibility of symbolic safety signs and safety routes				
First aid kit	Training in manual lifting and working posture			Commercial Timber Growers Guideline for: Maintenance and management agreement in forest plantation areas and servitude areas
Combustible materials and hazardous chemical substances should be stored adequately				
Regular inspection and maintenance of tools and machinery	Environmental Legislation Training			
Medical records j) Medical records i. Proof of medical surveillance plan ii. Minutes of all site and statutory meetings iii. Agenda iv. Minutes				
Incident Reporting And Investigation R				
Maintenance Plans For Machinery And Equipment				

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bb) Specific Construction Regulation Appointments:

- i. Regulation 4 (1) (c) –Appointment of the Principal Contractor
- ii. Regulation 4 (5) –Appointment of the Client Agent
- iii. Regulation 5 (3) (b) –Appointment of the Contractor
- iv. Regulation 6 (1) –Appointment of the Construction Supervisor
- v. Regulation 6 (6) –Appointment of the Construction Site Health and Safety Officer
- vi. Regulation 7 (1) –Appointment of the Construction Site Risk Assessor
- vii. Regulation 17 (8) –Appointment of the Material Hoist Inspector
- viii. Regulation 21 (1) (j) –Appointment of the Construction Vehicles and Mobile Plant Inspector
- ix. Regulation 26 (a) –Appointment of the Stacking and Storage Supervisor
- x. Regulation 27 (h) –Appointment of the Fire Extinguisher Inspector

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CONTRACT SPECIFICATION FOR VEGETATION MANAGEMENT SERVICES ON ESKOM NETWORKSUnique Identifier: **240-52456757**Revision: **0**Page: **55 of 80****Category 1 – Level 2: Brush and Low Risk tree cutting**

Safety Specification (as per the Occupational Health and Safety Act, Act 85 of 1993)	Training	Technical competencies	Environmental legal requirements	Relevant Eskom policies, procedures and standards
Company health and safety policy	Basic chainsaw operator training (consists of 6 modules) : 117058 Maintain a chainsaw and cut felled timber using a chainsaw 117061 De-branch felled trees using a chainsaw in a production situation 117062 Fell trees with a chainsaw using the standard technique and felling levers 117066 Fell trees with a chainsaw using specialised techniques 117069 Cross-cut felled trees using a chainsaw in a production situation 117064 Fell trees using a chainsaw in a production situation	Basic chainsaw operating skills	Contractor representative to have attended the Eskom environmental law course.	34-190: Access to farms (includes strategy on dealing with game farms)
Approved health and safety plan	Ground Level Tree Removal training (includes the following training) 262185 Identify types and basic characteristics of tree families (with recognition and reduction of tree Hazards) 23243 Operate brush-cutters in commercial forestry	Ground level tree removal skills		34-350 : Compliance to the incident management procedure

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Safety Specification (as per the Occupational Health and Safety Act, Act 85 of 1993)	Training	Technical competencies	Environmental legal requirements	Relevant Eskom policies, procedures and standards
Agreements as contemplated in terms of section 37(2) of the OSH Act.	I) training records i. The relevant training records of all employees ii. Health and safety induction iii. Risk assessment training iv. Responsible persons (orhvs)	Aerial removal sectional tree felling specialised technique skills		34-146: compliance to the operating regulations for high voltage systems/ authorizations standard
OSH Act, section 17 –appointment of the health and safety representatives	Orhvs authorisations & training as required	Knowledge of the ohs act requirements for safety and health		34-227: pre-task planning and feedback process
If applicable, specific construction regulation appointments	Risk assessment training (including on-site)	Knowledge and identification of national protected tree species		Dmn 34-100: work with petrol driven pruners - on ground level and from a bucket attached to a vehicle mounted crane/aerial device
COID registration	Fire management training - prevention and mitigation of fire / use of related equipment			
Risk assessments and analysis i. Task analysis ii. Risk assessments iii. Safety work procedures iv. Fall protection plan v. Fall protection risk assessment vi. Scaffold plan and inspection records ix. On-site risk assessments	Minimum vegetation clearance distance (mvcd) including general servitude widths, corridor size	Fire management skills (preventative measures as well as control measures in the case of fire occurrence)		34-323: personal protective equipment specification

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Safety Specification (as per the Occupational Health and Safety Act, Act 85 of 1993)	Training	Technical competencies	Environmental legal requirements	Relevant Eskom policies, procedures and standards
In case of modifications, the revised health and safety specifications and approved health and safety plans and relevant risk assessments		Soil erosion management		34-333: Health and Safety Requirements to be met by principal contractors employed by Eskom.
Evacuation plans and emergency contact details		Understanding of wildlife and domestic animal behaviour and response thereof		
Sub-contractors list sub-contractors and contract details (where applicable) proof of sub- contractor competencies	Understanding basic concepts and dangers of high voltage systems	Supervisory and management skills		34-1164: Medical Surveillance
Provide risk-based primary emergency care/first aid in the workplace	Incident management training	Able to report and investigate incidents, accidents and occupational health diseases		
PPE – PERSONAL PROTECTIVE EQUIPMENT Requirements i. LIST OF PPE ii. ISSUE LIST iii. INSPECTION OF PPE iv. MATERIAL SAFETY DATA SHEETS	First aid training	Able to undertake on-site risk assessments	Eskom's SHEQ Policy (32-727)	32-247: Procedure for vegetation clearance and maintenance within power line servitude's and Eskom owned land
Good housekeeping: proper storage of all equipment and material; removal of waste, scrap and debris	PPE (correct use of PPE, care, limitations) including Fall Arrest System	Able to perform regular required audits		
Fire extinguishing equipment access and maintenance	Site health and safety induction	Knowledge to undertake regular inspections on the maintenance of tools and machinery		

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Safety Specification (as per the Occupational Health and Safety Act, Act 85 of 1993)	Training	Technical competencies	Environmental legal requirements	Relevant Eskom policies, procedures and standards
Availability and visibility of symbolic safety signs and safety routes	Training on all potential hazards of the work place and how these can be prevented and controlled	Administrative and document management skills (for all records required ito OHSA)		
First aid kit	South African National driver's license according to applicable vehicle category			Commercial Timber Growers Guideline for: Maintenance and management agreement in forest plantation areas and servitude areas
Combustible materials and hazardous chemical substances should be stored adequately	Training in manual lifting and working posture			EPC 32-247: Procedure for vegetation clearance and maintenance within power line servitude's and Eskom owned land
Regular inspection and maintenance of tools and machinery				
Medical records j) medical records i. Proof of medical surveillance plan ii. Minutes of all site and statutory meetings iii. Agenda iv. Minutes	Environmental Legislation Training			
Incident reporting and investigation reports				
Maintenance plans for machinery and equipment				

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Specific Construction Regulation Appointments:

- i. Regulation 4 (1) (c) –Appointment of the Principal Contractor
- ii. Regulation 4 (5) –Appointment of the Client Agent
- iii. Regulation 5 (3) (b) –Appointment of the Contractor
- iv. Regulation 6 (1) –Appointment of the Construction Supervisor
- v. Regulation 6 (6) –Appointment of the Construction Site Health and Safety Officer
- vi. Regulation 7 (1) –Appointment of the Construction Site Risk Assessor
- vii. Regulation 8 (1) (a) –Appointment of the Fall Protection Plan Developer
- viii. Regulation 17 (8) –Appointment of the Material Hoist Inspector
- ix. Regulation 21 (1) (j) –Appointment of the Construction Vehicles and Mobile Plant Inspector
- x. Regulation 26 (a) –Appointment of the Stacking and Storage Supervisor
- xi. Regulation 27 (h) –Appointment of the Fire Extinguisher Inspector

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Category 1 – Level 3: High Risk Tree Cutting

Safety Specification (as per the Occupational Health and Safety Act, Act 85 of 1993)	Training	Technical competencies	Environmental legal requirements	Relevant Eskom policies, procedures and standards
Company health and safety policy	Basic chainsaw operator training (consists of 6 modules) : 117058 Maintain a chainsaw and cut felled timber using a chainsaw 117061 De-branch felled trees using a chainsaw in a production situation 117062 Fell trees with a chainsaw using the standard technique and felling levers 117066 Fell trees with a chainsaw using specialised techniques 117069 Cross-cut felled trees using a chainsaw in a production situation 117064 Fell trees using a chainsaw in a production situation	Basic chainsaw operating skills	Contractor representative to have attended the Eskom environmental law course.	34-190: Access to farms (includes strategy on dealing with game farms)
Approved health and safety plan	Aerial Removal Sectional Tree Felling training- 262187 Operate a chain saw from a rope and harness 262280 Climb a tree according to safe working practices 262157 Conduct pruning activities according to industry standards 262258 Perform aerial rescue from a tree 262301 Dismantle trees according to acceptable industry standards and safe practices	High level tree removal skills		34-350 : Compliance to the incident management procedure
Agreements as contemplated in terms of section 37(2) of the ohs act.	I) Training records i. The relevant training records of all employees ii. Health and safety induction iii. Risk assessment training iv. Responsible persons (orhvs)	Aerial removal sectional tree felling specialised technique skills		34-146: Compliance to the operating regulations for high voltage systems/ authorizations standard

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Safety Specification (as per the Occupational Health and Safety Act, Act 85 of 1993)	Training	Technical competencies	Environmental legal requirements	Relevant Eskom policies, procedures and standards
OSH Act, Section 17 – Appointment Of The Health And Safety Representatives	ORHVS AUTHORISATIONS & training as required	Knowledge of the OHS Act requirements for safety and health		34-227: Pre-task planning and feedback process
If applicable, Specific Construction Regulation Appointments	Risk assessment training (including on-site)	Knowledge and identification of national protected tree species		DMN 34-100: Work with petrol driven pruners - on ground level and from a bucket attached to a vehicle mounted crane/aerial device
COID Registration	Fire management training - prevention and mitigation of fire / use of related equipment			
Risk assessments and analysis i. Task analysis ii. Risk assessments iii. Safety work procedures iv. Fall protection plan v. Fall protection risk assessment vi. Scaffold plan and inspection records ix. On-site risk assessments	Minimum Vegetation Clearance Distance (MVCD) including general servitude widths, corridor size	Fire management skills (preventative measures as well as control measures in the case of fire occurrence)		34-323: Personal Protective Equipment Specification
In Case Of Modifications, The Revised Health And Safety Specifications And Approved Health And Safety Plans And Relevant Risk Assessments		Soil erosion management		34-333: Health and Safety Requirements to be met by principal contractors employed by Eskom.
Evacuation Plans And Emergency Contact DETAILS				
Safety Specification (as per the Occupational Health and Safety Act, Act 85	Training	Technical competencies	Environmental legal requirements	Relevant Eskom policies, procedures and standards

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Sub-Contractors List Sub-Contractors And Contract Details (Where Applicable) Proof Of Sub- Contractor Competencies	Understanding basic concepts and dangers of high voltage systems	Supervisory and management skills		34-1164: Medical Surveillance
Provide risk-based primary emergency care/first aid in the workplace	Incident management training	Able to report and investigate incidents, accidents and occupational health diseases		
PPE – personal protective equipment requirements i. List of PPE ii. Issue list iii. Inspection of PPE iv. Material safety data sheets	First aid training	Able to undertake on-site risk assessments	Eskom's SHEQ Policy (32-727)	32-247: Procedure for vegetation clearance and maintenance within power line servitude's and Eskom owned land
Good housekeeping: proper storage of all equipment and material; removal of waste, scrap and debris	PPE (correct use of PPE, care, limitations) including Fall Arrest System	Able to perform regular required audits		
Fire extinguishing equipment access and maintenance	Site health and safety induction	Knowledge to undertake regular inspections on the maintenance of tools and machinery		32-736: Eskom Land and Biodiversity Policy
Availability and visibility of symbolic safety signs and safety routes	Training on all potential hazards of the work place and how these can be prevented and controlled	Administrative and document management skills (for all records required ito OHSA)		32-815: Eskom Land and Biodiversity Standard

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Safety Specification (as per the Occupational Health and Safety Act, Act 85 of 1993)	Training	Technical competencies	Environmental legal requirements	Relevant Eskom policies, procedures and standards
First aid kit	South African National driver's license according to applicable vehicle category			Commercial Timber Growers Guideline for: Maintenance and management agreement in forest plantation areas and servitude areas
Combustible materials and hazardous chemical substances should be stored adequately	Training in manual lifting and working posture			EPC 32-247: Procedure for vegetation clearance and maintenance within power line servitude's and Eskom owned land
Regular inspection and maintenance of tools and machinery				
Medical records j) Medical records i. Proof of medical surveillance plan ii. Minutes of all site and statutory meetings iii. Agenda iv. Minutes	Environmental Legislation Training			SCSPVACL6: Procedure for using fall arrest systems

Specific Construction Regulation Appointments:

- i. Regulation 4 (1) (c) –Appointment of the Principal Contractor
- ii. Regulation 4 (5) –Appointment of the Client Agent
- iii. Regulation 5 (3) (b) –Appointment of the Contractor
- iv. Regulation 6 (1) –Appointment of the Construction Supervisor
- v. Regulation 6 (6) –Appointment of the Construction Site Health and Safety Officer

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- vi. Regulation 7 (1) –Appointment of the Construction Site Risk Assessor
- vii. Regulation 8 (1) (a) –Appointment of the Fall Protection Plan Developer
- viii. Regulation 17 (8) –Appointment of the Material Hoist Inspector
- ix. Regulation 21 (1) (j) –Appointment of the Construction Vehicles and Mobile Plant Inspector
- x. Regulation 26 (a) –Appointment of the Stacking and Storage Supervisor
- xi. Regulation 27 (h) –Appointment of the Fire Extinguisher Inspector

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Category 2 – Level 1: Herbicide Application

Safety Specification (as per the Occupational Health and Safety Act, Act 85 of 1993)	Training	Technical competencies	Environmental legal requirements	Relevant Eskom policies, procedures and standards
Company health and safety policy	I) training records i. The relevant training records of all employees ii. Health and safety induction iii. Risk assessment training iv. Responsible persons (orhvs)	Knowledge of the OHS Act requirements for safety and health	Contractor representative to have attended the Eskom environmental law course.	34-190: Access to farms (includes strategy on dealing with game farms)
Approved health and safety plan	Orhvs authorisations & training as required	Knowledge and identification of national protected tree species		34-350 : Compliance to the incident management procedure
Agreements as contemplated in terms of section 37(2) of the OSH Act.	Risk assessment training (including on-site)			34-146: Compliance to the operating regulations for high voltage systems/ authorizations standard
OHS Act, section 17 – appointment of the health and safety representatives	Fire management training - prevention and mitigation of fire / use of related equipment	Fire management skills (preventative measures as well as control measures in the case of fire occurrence)		34-227: Pre-task planning and feedback process
If applicable, Specific Construction Regulation Appointments	Minimum Vegetation Clearance Distance (MVCD) including general servitude widths, corridor size			DMN 34-100: Work with petrol driven pruners - on ground level and from a bucket attached to a vehicle mounted crane/aerial device

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Safety Specification (as per the Occupational Health and Safety Act, Act 85 of 1993)	Training	Technical competencies	Environmental legal requirements	Relevant Eskom policies, procedures and standards
COID Registration				
Risk assessments and analysis i. Task analysis ii. Risk assessments iii. Safety work procedures iv. Fall protection plan v. Fall protection risk assessment vi. Scaffold plan and inspection records ix. On-site risk assessments		Supervisory and management skills		34-323: Personal Protective Equipment Specification
In Case Of Modifications, The Revised Health And Safety Specifications And Approved Health And Safety Plans And Relevant Risk Assessments	Understanding basic concepts and dangers of high voltage systems	Able to report and investigate incidents, accidents and occupational health diseases		34-333: Health and Safety Requirements to be met by principal contractors employed by Eskom.
Evacuation Plans And Emergency Contact Details	Incident management training	Able to undertake on-site risk assessments		
Provide risk-based primary emergency care/first aid in the workplace	PPE (correct use of PPE, care, limitations)	Knowledge to undertake regular inspections on the maintenance of tools and machinery		

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Safety Specification (as per the Occupational Health and Safety Act, Act 85 of 1993)	Training	Technical competencies	Environmental legal requirements	Relevant Eskom policies, procedures and standards
PPE – personal protective equipment requirements i. List of PPE ii. Issue list iii. Inspection of PPE iv. Material safety data sheets	Site health and safety induction	Administrative and document management skills (for all records required i.to OHSA)	Fertilisers, Farm Feeds, Agricultural Remedies & Stock Remedies Act, 1947 (Act No. 36 of 1947). Contractor to show proof of registration as Pest Control Offices i.t.o above Act.	32-247: Procedure for vegetation clearance and maintenance within power line servitude's and Eskom owned land
Good housekeeping: proper storage of all equipment and material; removal of waste, scrap and debris	Training on all potential hazards of the work place and how these can be prevented and controlled	Knowledge of the correct usage/application of herbicides to control and prevent re-growth of cut plant species		
Fire extinguishing equipment access and maintenance	Training in manual lifting and working posture			
Availability and visibility of symbolic safety signs and safety routes				
First aid kit	Environmental Legislation Training			Commercial Timber Growers Guideline for: Maintenance and management agreement in forest plantation areas and servitude areas
Combustible materials and hazardous chemical substances should be stored adequately	Commercial application of herbicide training			Eskom's SHEQ Policy (32-727)

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Safety Specification (as per the Occupational Health and Safety Act, Act 85 of 1993)	Training	Technical competencies	Environmental legal requirements	Relevant Eskom policies, procedures and standards
Regular inspection and maintenance of tools and machinery	Registered pest control officer			
Medical records j) Medical records i. Proof of medical surveillance plan ii. Minutes of all site and statutory meetings iii. Agenda iv. Minutes				
Incident Reporting And Investigation Reports				
Maintenance Plans For Machinery And Equipment				
Only a registered pest control operator may apply herbicides on a commercial basis. All commercial application of herbicides shall be carried out under the supervision of a registered pest control officer.				

cc) Specific Construction Regulation Appointments:

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- i. Regulation 4 (1) (c) –Appointment of the Principal Contractor
- ii. Regulation 4 (5) –Appointment of the Client Agent
- iii. Regulation 5 (3) (b) –Appointment of the Contractor
- iv. Regulation 6 (1) –Appointment of the Construction Supervisor
- v. Regulation 6 (6) –Appointment of the Construction Site Health and Safety Officer
- vi. Regulation 7 (1) –Appointment of the Construction Site Risk Assessor
- vii. Regulation 8 (1) (a) –Appointment of the Fall Protection Plan Developer
- viii. Regulation 17 (8) –Appointment of the Material Hoist Inspector
- ix. Regulation 21 (1) (j) –Appointment of the Construction Vehicles and Mobile Plant Inspector
- x. Regulation 26 (a) –Appointment of the Stacking and Storage Supervisor
- xi. Regulation 27 (h) –Appointment of the Fire Extinguisher Inspector

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Category 2– Level 2: Fire Management

Safety Specification (as per the Occupational Health and Safety Act, Act 85 of 1993)	Training	Technical competencies	Environmental legal requirements	Relevant Eskom policies, procedures and standards
Company health and safety policy	I) training records i. The relevant training records of all employees ii. Health and safety induction iii. Risk assessment training iv. Responsible persons (orhvs)	Knowledge of the OHS Act requirements for safety and health	Contractor representative to have attended the Eskom environmental law course.	34-190: Access to farms (includes strategy on dealing with game farms)
Approved health and safety plan	Orhvs authorisations & training as required	Knowledge and identification of national protected tree species		34-350 : Compliance to the incident management procedure
Agreements as contemplated in terms of section 37(2) of the OSH Act.	Risk assessment training (including on-site)			34-146: Compliance to the operating regulations for high voltage systems/ authorizations standard
OSDH Act, section 17 – appointment of the health and safety representatives	Fire management training - prevention and mitigation of fire / use of related equipment	Fire management skills (preventative measures as well as control measures in the case of fire occurrence)		34-227: Pre-task planning and feedback process
If applicable, Specific Construction Regulation Appointments	Minimum Vegetation Clearance Distance (MVCD) including general servitude widths, corridor size	Soil erosion management		DMN 34-100: Work with petrol driven pruners - on ground level and from a bucket attached to a vehicle mounted crane/aerial device
COID Registration				

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Safety Specification (as per the Occupational Health and Safety Act, Act 85 of 1993)	Training	Technical competencies	Environmental legal requirements	Relevant Eskom policies, procedures and standards
Risk assessments and analysis i. Task analysis ii. Risk assessments iii. Safety work procedures iv. Fall protection plan v. Fall protection risk assessment vi. Scaffold plan and inspection records ix. On-site risk assessments		Supervisory and management skills		34-323: Personal Protective Equipment Specification
In case of modifications, the revised health and safety specifications and approved health and safety plans and relevant risk assessments	Understanding basic concepts and dangers of high voltage systems	Able to report and investigate incidents, accidents and occupational health diseases		34-333: Health and Safety Requirements to be met by principal contractors employed by Eskom.
Evacuation plans and emergency contact details	Incident management training	Able to undertake on-site risk assessments		
Sub-contractors list sub-contractors and contract details (where applicable) proof of sub- contractor competencies	First aid training	Able to perform regular required audits		34-1164: Medical Surveillance
Provide risk-based primary emergency care/first aid in the workplace	PPE (correct use of PPE, care, limitations)	Knowledge to undertake regular inspections on the maintenance of tools and machinery		

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Safety Specification (as per the Occupational Health and Safety Act, Act 85 of 1993)	Training	Technical competencies	Environmental legal requirements	Relevant Eskom policies, procedures and standards
PPE – PERSONAL PROTECTIVE EQUIPMENT Requirements i. LIST OF PPE ii. ISSUE LIST iii. INSPECTION OF PPE iv. MATERIAL SAFETY DATA SHEETS	Site health and safety induction	Administrative and document management skills (for all records required ito OHSA)		32-247: Procedure for vegetation clearance and maintenance within power line servitude's and Eskom owned land
Good housekeeping: proper storage of all equipment and material; removal of waste, scrap and debris	Training on all potential hazards of the work place and how these can be prevented and controlled			
Fire extinguishing equipment access and maintenance	Training in manual lifting and working posture			
Availability and visibility of symbolic safety signs and safety routes				
First aid kit	Environmental Legislation Training			Commercial Timber Growers Guideline for: Maintenance and management agreement in forest plantation areas and servitude areas
Combustible materials and hazardous chemical substances should be stored adequately				Eskom's SHEQ Policy (32-727)

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Safety Specification (as per the Occupational Health and Safety Act, Act 85 of 1993)	Training	Technical competencies	Environmental legal requirements	Relevant Eskom policies, procedures and standards
Regular inspection and maintenance of tools and machinery				
Medical records i. Proof of medical surveillance plan ii. Minutes of all site and statutory meetings iii. Agenda iv. Minutes				
Incident reporting and investigation reports				
Maintenance plans for machinery and equipment				

dd) Specific Construction Regulation Appointments:

- i. Regulation 4 (1) (c) –Appointment of the Principal Contractor
- ii. Regulation 4 (5) –Appointment of the Client Agent
- iii. Regulation 5 (3) (b) –Appointment of the Contractor
- iv. Regulation 6 (1) –Appointment of the Construction Supervisor
- v. Regulation 6 (6) –Appointment of the Construction Site Health and Safety Officer

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- vi. Regulation 7 (1) –Appointment of the Construction Site Risk Assessor
- vii. Regulation 8 (1) (a) –Appointment of the Fall Protection Plan Developer
- viii. Regulation 17 (8) –Appointment of the Material Hoist Inspector
- ix. Regulation 21 (1) (j) –Appointment of the Construction Vehicles and Mobile Plant Inspector
- x. Regulation 26 (a) –Appointment of the Stacking and Storage Supervisor
- xi. Regulation 27 (h) –Appointment of the Fire Extinguisher Inspector

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Annex D – Competence Specification

Contractor Competence Management

The competency profiles defined below will designate the minimum competence and roles managing Vegetation management teams and contained within a vegetation management team.

It is up to the contractor to develop a training plan reflecting the unit standard that will contain the various aspects of the competency profiles.

It is also the duty of the Contractor to assure that every team member is trained and declared competent by an SETA accredited learning service provider prior to the contract being formalized

It is also the obligation of the Contractor to assure the team sizes is suitable for the activity performed and that the minimum competence is available and charged with the anticipated duties on the work site.

Additional training is at the discretion of the contractor

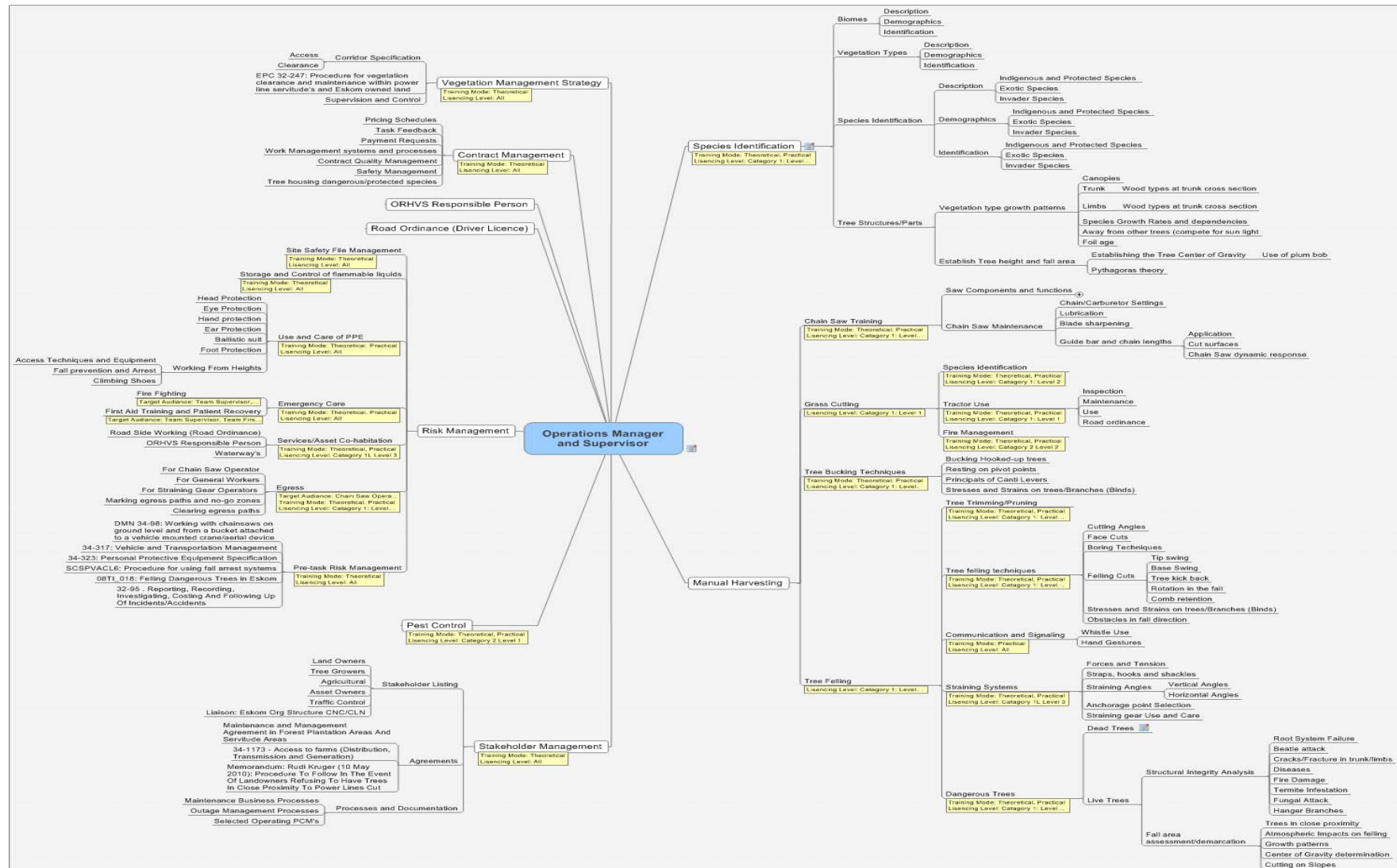
NOTE: Due to the complex and detail information that need to be rendered, spider diagrams are used for the various vegetation management team competency profiles. It is important to print these pages on A3 format for clear reading. Viewing the diagrams on a personal computer requires enlargement of the page.

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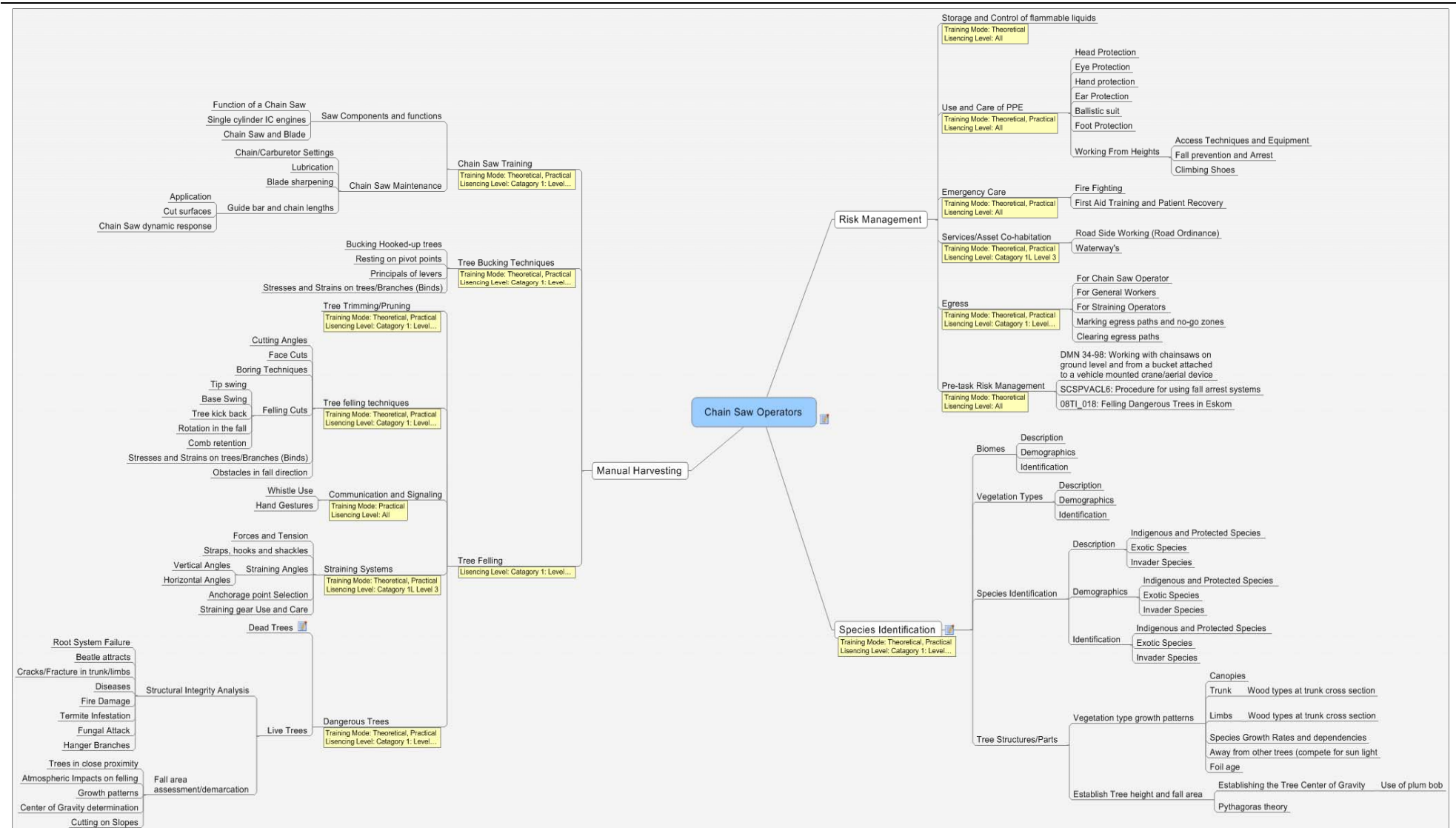
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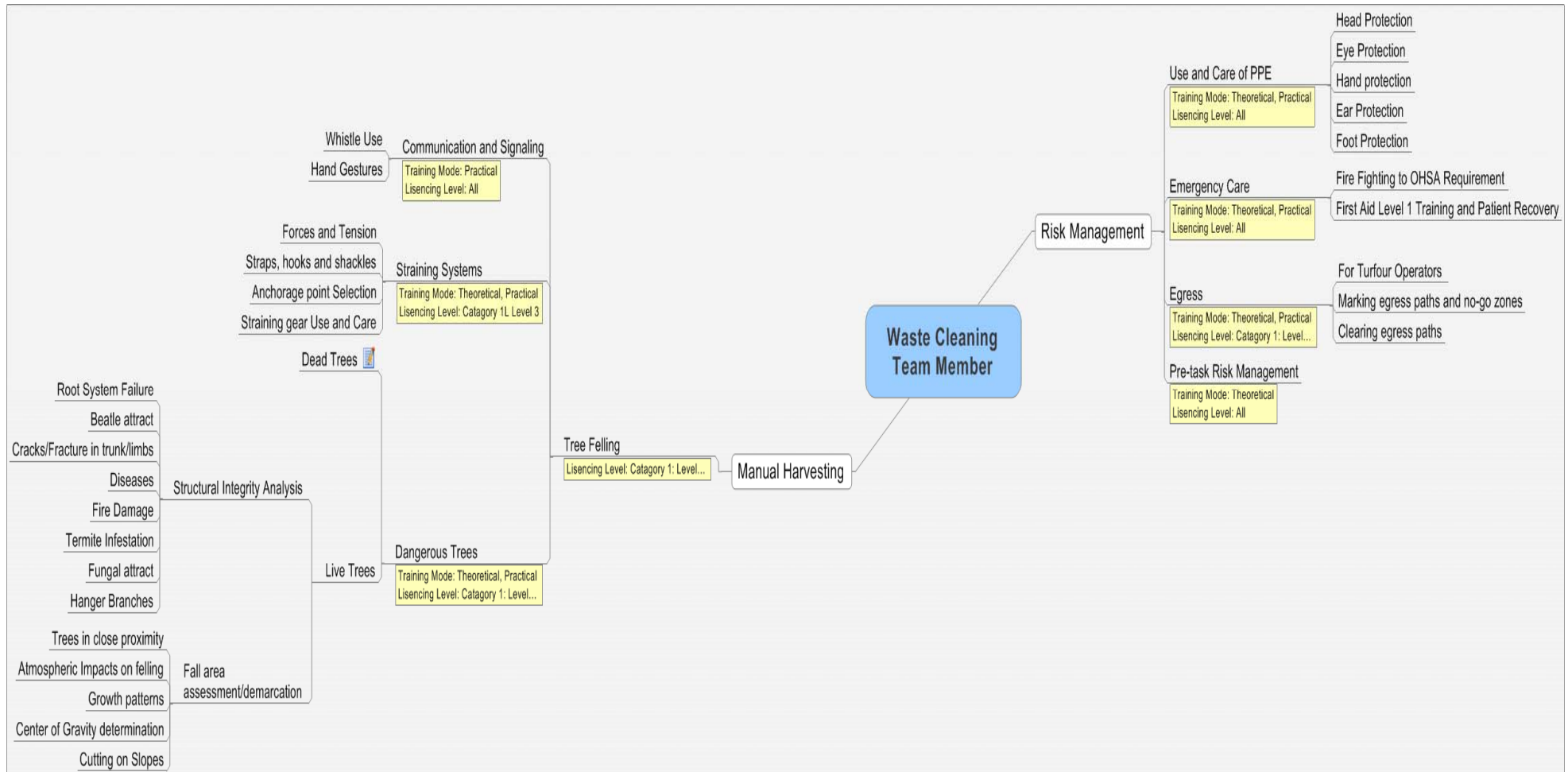
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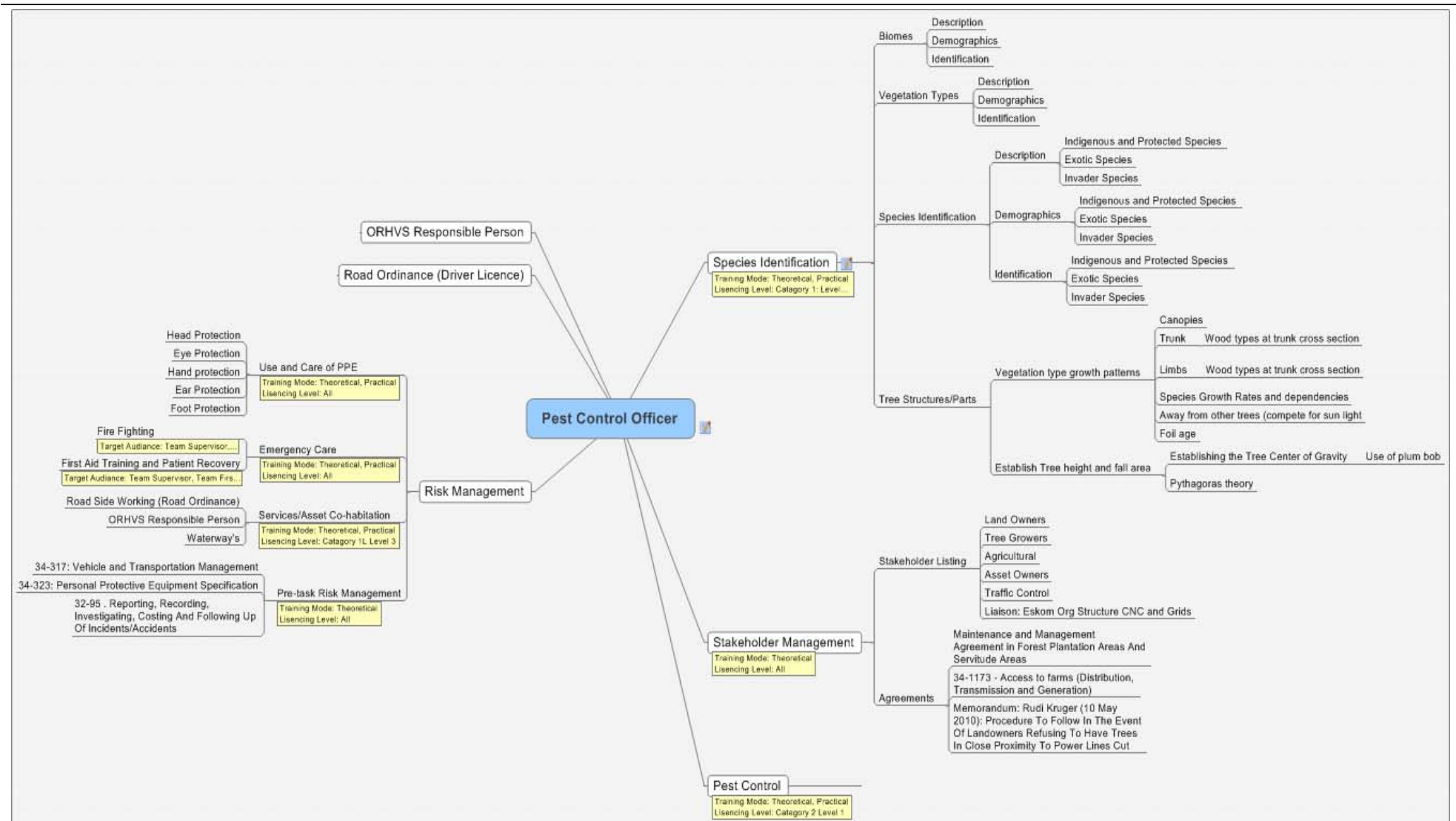


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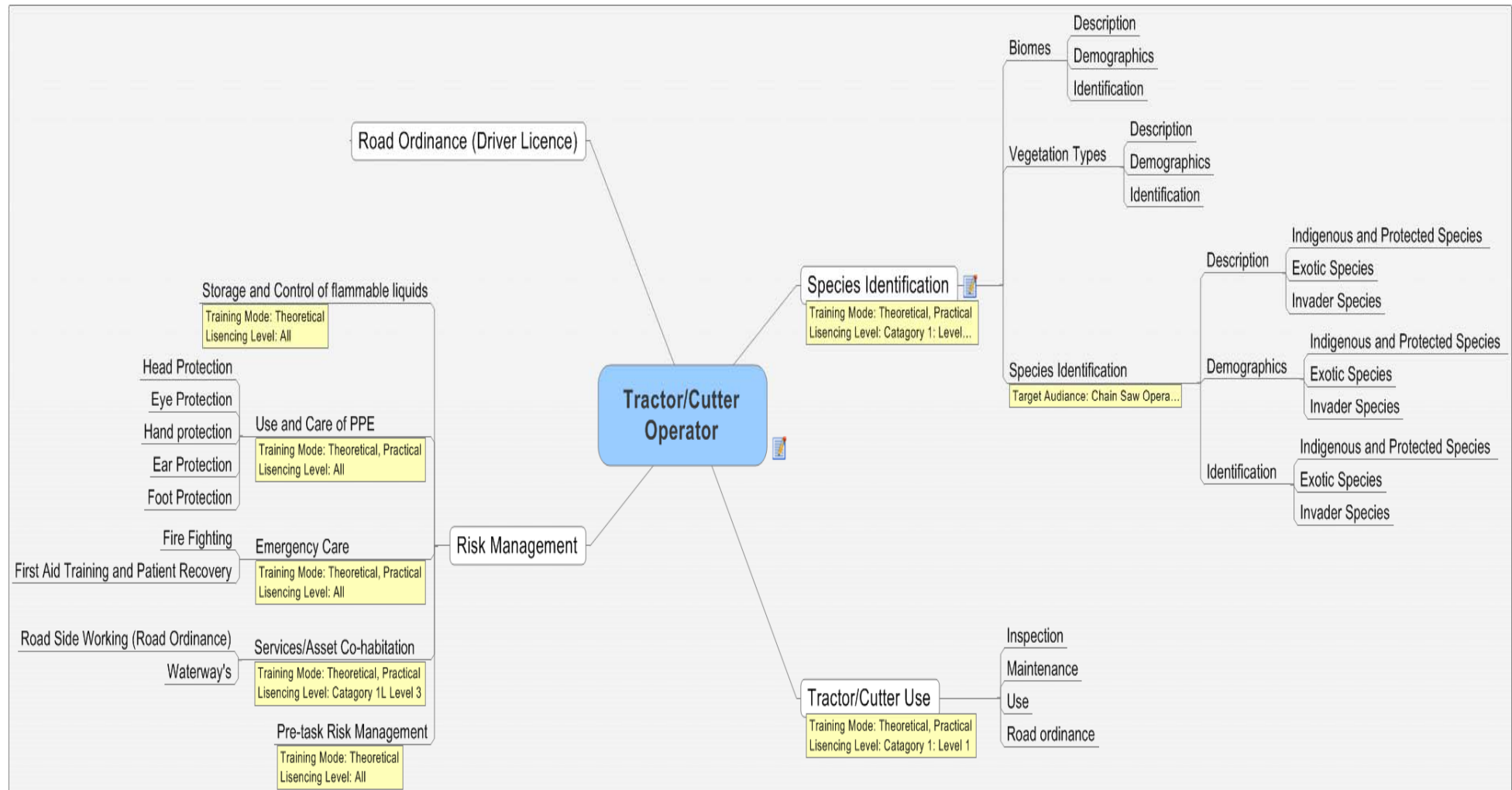
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