Prepared for: ESKOM TRANSMISSION

A PHASE I HERITAGE IMPACT ASSESSMENT (HIA) STUDY FOR ESKOM'S PROPOSED NEW 2x400kV POWER LINE ROUTE BETWEEN THE MATIMBA B POWER STATION AND THE DINALEDI SUBSTATION NEAR MADIBENG (BRITS)

Prepared by: DR JULIUS CC PISTORIUS Archaeologist & Heritage Management Consultant

352 Rosemary Street Lynnwood 0081 Pretoria Tel & fax 012 3485668 Cell 0825545449 February 2007 Member ASAPA

EXECUTIVE SUMMARY

Eskom is expanding transmission and generation infrastructure to ensure a sufficient generation capacity to sustain the country's economic growth. Consequently, the proposed Matimba Transmission Integration Project requires the construction of power lines as well as the construction and upgrading of substations. This project involves the construction of 2x400kV power lines from Matimba B Power Station near Lephalale in the Limpopo Province to the Dinaledi Substation near Madibeng (Brits) in the Northwest.

The Matimba B-Dinaledi power lines may impact on any of the types and ranges of heritage resources that are outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) (see Box 1). Consequently, a Phase I Heritage Impact Assessment (HIA) study for the proposed 2X400kV Matimba B-Dinaledi power line corridor as well as for the Dinaledi Substation was conducted.

The Phase I HIA study had the following aims: to establish whether any types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act do occur in or near the Eskom Project Area and, if so, to determine the nature, the extent and the significance of these remains; to determine whether such remains will be affected by the proposed new development; and to evaluate what appropriate actions can be taken to reduce the impact of the development on such remains.

The Matimba B-Dinaledi power line was divided into four stretches, namely a northern, central, southern and a southern most stretch. The central, southern and southern most stretches have various options. The Dinaledi Substation was also subjected to a Phase I HIA study.

The main types and ranges of heritage resources that were identified in the Eskom Project Area were:

• Ruins and graves that were identified from the Surveyor General's 1: 50 000 topographical maps and which occur in association with the power line corridor.

• Stone walled settlements or clusters of these sites which occur close to the Dinaledi Substation.

The majority of these heritage resources and graves were mapped. The levels of significance of these remains have been indicated as well as the magnitude of any impact on these heritage resources and graves (Figure 3 & Table 1).

It is possible that ruins on Geelhoutskloof 359JQ and Geluk 212KP may be impacted by the new power line. The nature, extent and significance of these 'ruins' is unknown. These remains usually date from the more recent past and as such do not have any outstanding significance.

However, if these ruins are older than sixty years they do qualify as heritage resources and are subsequently protected by Section 34 of the National Heritage Resources Act (No 25 of 1999). It these ruins are impacted by the development and are older than sixty years a permit for the demolishing of these ruins have to be acquired from the North-West Provincial Heritage Resources Authority (NW PHRA) which would authorise the destruction of these remains.

It seems as if no graves or graveyards will be impacted by the new power line. However, all graves hold high significance as graves and graveyards are protected by various laws. Legislation with regard to graves includes the National Heritage Resources Act (No 25 of 1999) whenever graves are older than sixty years. The act also distinguishes various categories of graves and burial grounds. Other legislation with regard to graves includes those which apply when graves are exhumed and relocated, namely the Ordinance on Exhumations (No 12 of 1980) and the Human Tissues Act (No 65 of 1983 as amended).

It seems as if no stone walled settlements will be impacted by the new power line or the Dinaledi Substation. These sites are abundant in the Msiletsane and Mothutlung hills on Elandsfontein 440JQ to the south of the Eskom Project Area. A few stone walled sites also occur on Krokodilkraal 246JQ, near the Dinaledi Substation. It is unlikely that these stone walled sites will be affected by the upgrading of the Dinaledi Substation. However, these sites have high significance as has been outlined in the report.

As a result of the near total absence of any impact with a high magnitude on any outstanding significant heritage resources along any of the stretches and options for the Matimba B-Dinaledi power line and for the Dinaledi Substation, no recommendations are put forward with regard to any specific stretch or option which has to be followed when the power line is constructed and the substation upgraded.

CONTENTS

Executive summary			
1	INTRODUCTION	7	
2	AIMS WITH THIS STUDY	8	
3	METHODOLOGY	10	
3.1	Fieldwork	10	
3.2	Databases, literature survey and maps	10	
3.3	Earlier surveys	11	
3.4	Mapping heritage resources	11	
3.5	Assumptions and limitations	12	
4	A BRIEF CONTEXT OF THE ESKOM PROJECT AREA	13	
4.1	Location	13	
4.2	The nature of the Eskom Project Area	13	
4.2.1	2.1 The bushveld in the north		
4.2.2	2.2 The Bankeveld in the south		
4.3	Heritage resources in the Eskom Project Area	17	
4.3.1	3.1 Heritage resources in the bushveld in the north		
4.3.1	Heritage resources in the Bankeveld in the south	19	
5	THE PHASE I HERITAGE IMPACT ASSESSMENT STUDY	23	
5.1	The survey for the Matimba B-Dinaledi power line corridor	23	
5.1.1	The main stretches of the Matimba B-Dinaledi power line	23	
5.1.1.	1 The northern stretch	25	
Known heritage resources			
5.1.1.	2 The central stretch	25	

Known heritage resources		
5.1.1.3	The southern stretch	27
Known heritage resources		
5.1.1.4	The southern most stretch	27
Known heritage resources		27
5.2	The survey for the Dinaledi Substation	30

6 THE SIGNIFICANCE AND IMPACT ON THE HERITAGE RESOURCES

	RESOURCES	31
6.1	Levels of significance of the heritage resources	31
6.1.1	The significance of the ruins	31
6.1.2	The significance of the graves and graveyards	32
6.1.3	The significance of the stone walled sites	32
6.2	Possible impact on the heritage resources	34
6.2.1	Possible impact on ruins	34
6.2.2	Possible impact on graves and graveyards	34
6.2.3	Possible impact on stone walled sites	35
6.3	Mitigating the impact on the heritage resources	35
6.3.1	Mitigating the ruins	35
7	CONCLUSION AND RECOMMENDATIONS	36

39

1 INTRODUCTION

Eskom is expanding transmission and generation infrastructure to ensure a sufficient generation capacity to sustain the country's economic growth. The Matimba and Mmamabula (Botswana) coal beds have been identified as sources for future power generation. Eskom's proposed new Matimba B Power Station will be established 10km from the existing Matimba Power Station near Lephalale (Ellisras) in the Limpopo Province of South Africa. Matimba B must commence with operation in 2010 and it has to be connected to the transmission network.

Consequently, the proposed Matimba Transmission Integration Project requires the construction of power lines as well as the construction and upgrading of substations. This project involves the following activities:

- The establishment of a 400kV power line from the Matimba B Power Station to the Marang Substation near Rustenburg. (This power line needs not to go through the Spitskop Substation near Northam).
- The establishment of 2X400kV power lines from the Matimba B Power Station to the Dinaledi Substation near Madibeng (Brits). (It is required that these power lines go through the Spitskop Substation).
- The upgrading of the Marang, Spitskop and Dinaledi Substations to accommodate the additional capacity they will receive.

This study only focuses on the Phase I Heritage Impact Assessment (HIA) study which has been done for the 2X400kV power line corridor that runs between the Matimba B Power Station near Lephalale in the Limpopo Province and the Dinaledi Substation near Rustenburg in the North-West Province. The proposed new power line will be approximately 270km long.

2 AIMS WITH THIS STUDY

Eskom's proposed new 2X400kV Matimba B-Dinaledi power line corridor will cross parts of both the Limpopo and the North-West Provinces of South Africa. The power line will be confined to a clearly defined power line corridor which was divided into a northern, central, southern and a southern most stretch. The central, southern and southern most stretches have various options. These stretches and options for the proposed new 2X400kV Matimba B-Dinaledi power lines also represent the Eskom Project Area.

Eskom's proposed 2X400kv Matimba B-Dinaledi power line corridor may impact on any of the types and ranges of heritage resources that are outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) (see Box 1) as any of these heritage resources may be located in or near the proposed new 2X400kV Matimba B-Dinaledi power line corridor. Eskom and PBA International therefore commissioned the author to undertake a Phase I Heritage Impact Assessment (HIA) study for the proposed new 2X400kV Matimba B-Dinaledi power line with the following aims.

- to establish whether any of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) (Box 1) do occur in or near the proposed new Eskom Project Area and, if so, to determine the nature, the extent and the significance of these remains;
- to determine whether such remains will be affected by the proposed new power lines; and
- to evaluate what appropriate actions could be taken to reduce the impact of the proposed new power lines on such remains.

Box 1: Types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999).

The National Heritage Resources Act (No 25 of 1999) outlines the following types and ranges of heritage resources that qualify as part of the national estate: (a) places, buildings structures and equipment of cultural significance; places to which oral traditions are attached or which are associated with living heritage; (b) historical settlements and townscapes; (C) landscapes and natural features of cultural significance; (d) geological sites of scientific or cultural importance; (e) (f) archaeological and palaeontological sites; graves and burial grounds including-(g) (i) ancestral graves; (ii) royal graves and graves of traditional leaders; (iii) graves of victims of conflict; (iv) graves of individuals designated by the Minister by notice in the Gazette; (v) historical graves and cemeteries; and (vi) other human remains which are not covered in terms of the Human Tissue Act (Act 65 of 1983); (h) sites of significance relating to the history of slavery in South Africa; moveable objects, including -(i) (i) objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects, material, meteorites and rare geological specimens; (ii) objects to which oral traditions are attached or which are associated with living heritage; (iii) ethnographic art and objects; (iv) military objects; (v) objects of decorative or fine art; (vi) objects of scientific or technological interest; and (vii) books, records, documents, photographs, positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act (Act 43 of 1996). The National Heritage Resources Act (Act 25 of 1999, Sec 3) also distinguishes nine criteria for a place and/or object to qualify as 'part of the national estate if they have cultural significance or other special value ...'. These criteria are the following: its importance in the community, or pattern of South Africa's history; (a) (b) its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage; its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage; (C) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or (d) cultural places or objects; its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group; (e) its importance in demonstrating a high degree of creative or technical achievement at a particular period; (f) its strong or special association with a particular community or cultural group for social, cultural or spiritual (g) reasons: (h) its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and/or

(i) its significance relating to the history of slavery in South Africa.

3 METHODOLOGY

This Phase I HIA study was conducted by means of:

- Travelling the length of the proposed new power line corridors with a helicopter, vehicle and surveying selected spots of the Eskom Project Area on foot.
- Surveying literature relating to the pre-historical and historical context of the Eskom Project Area;
- Consulting maps of the Eskom Project Area;
- Consulting archaeological (heritage) data bases such as the one kept at the North-West Provincial Heritage Resources Agency (NW PHRA);
- Relying on experience gained from twenty years of fieldwork in the Eskom Project Area during which time numerous surveys were conducted for mines, residential areas, power lines and other types of development projects.
- Integrating all information obtained from the literature survey, maps, data bases and previous surveys with the evidence derived from the fieldwork.

3.1 Fieldwork

The proposed Matimba B-Dinaledi power line options were surveyed by means of flying the lengths of the major corridors with a helicopter; travelling stretches of the proposed new power line corridors with a vehicle where accessible roads existed and surveying selected spots along the power line corridors on foot.

3.2 Databases, literature survey and maps

Databases kept and maintained at institutions such as the North-West Heritage Resources Agency (SAHRA) in Mafekeng and the Archaeological Data Recording Centre at the National Flagship Institute (Museum Africa) in Pretoria were consulted to determine whether any heritage resources had been identified during earlier archaeological surveys in the Eskom Project Area.

Literature relating to the pre-historical and the historical unfolding of the Eskom Project Area was briefly reviewed. Pre-historical and historical events relating to the broad Eskom Project Area were highlighted in order to contextualise the project area and to determine what possible types and ranges of heritage resources may be expected to occur in or near the proposed Matimba B-Dinaledi power line corridors.

In addition, the Eskom Project Area was also studied by means of the 1:50 000 topographical maps and the 1:250 000 map on which the project area appears.

3.3 Earlier surveys

The author has conducted numerous surveys and excavations in the Eskom Project Area during the last two decades. The surveys were conducted for granite, platinum and chrome mines. Excavations of approximately twenty settlements were undertaken while conducting research on the origins and history of the Tswana. Experience gained from these surveys and excavations contributed to knowledge about the presence of heritage resources in or near power line corridors (see Part 8, 'Select Bibliography').

3.4 Mapping heritage resources

Known heritage resources (including cultural landscapes) as well as 'ruins' and 'graves' indicated on the Surveyor General's 1: 50 000 topographical maps on which the Eskom Project Area appears were mapped by GIS Corporation.

3.5 Assumptions and limitations

It must be pointed out that this Phase I HIA study did not succeed in identifying all possible types and ranges of heritage resources along the proposed new Matimba B-Dinaledi power line corridors as the total length of the proposed new power line corridors could not be surveyed in full.

This Phase I HIA study has to be followed by a pedestrian (foot) survey of selected stretches of the final power line corridor in order to identify any possible impacts on heritage resources which may occur along certain stretches of the proposed new power line corridor.

4 A BRIEF CONTEXT OF THE ESKOM PROJECT AREA

4.1 Location

Eskom's proposed new power line corridors will run from Lephalale (Ellisras) in the Limpopo Province in the north to the Dinaledi Substation near Madibeng (Brits) in the south. The proposed new power line will cross two provincial boundaries, namely that of the Limpopo Province and the North-West Province of South Africa. The power lines will also cross two major ecozones, namely savannah bush veldt in the north and the Bankeveld in the south, each zone characterised by particular types and ranges of heritage resources relating to the origins and histories of various human groups who occupied these ecozones from the earliest times.

4.2 The nature of the Eskom Project Area

The Eskom Project Area incorporates a northern bushveld savanna ecozone that stretches from Lephalale in the north to a series of norite kopjes in the south. The Bankeveld is an intermediary zone between the northern bushveld and the grass veld of the Highveld stretching further to the south. The northern bushveld and the Bankeveld ecozones do not only harbour significantly different types and ranges of heritage resources, but also reflect marked differences in the number of heritage resources that occur in each of these ecozones.

4.2.1 The bushveld in the north

The northern bushveld is characterised by shale with traces of sediments near the Limpopo River in the far west. A patch with arenite, which is the dominant material in the Waterberg Mountain mass further to the east, outside the Eskom Project Area, occurs near the northern stretch of the power line. The vegetation is predominantly sweet Bushveld although thickets and clumps of bush and high fynbos occur. Towards the south vegetation described as part of the Western Sandy Bushveld encroaches. Degraded forest and woodland occurs towards the northern stretch of the power lines.

No conspicuous topographical features other than consistent level sandy plains covered with open savannah bush mark this part of the project area which is also home to several scattered pans. Agricultural fields, many abandoned today, dot the project area where the Matimba B Power Station will be established.

The bushveld savanna was sparsely populated by humans in the past. However, occupation started at an early period so that humans may have been present in the area over a long time span, but on a limited scale. This occupation occurred from the Stone Age, hundreds of thousands of years ago, throughout the Early Iron Age which covers the first millennium AD and the historical period which commences with the arrival of the first colonial hunters, traders and farmers.



Figure 1- The northern bushveld part of the Eskom Project Area seen from the air. Outstretched open savannah veldt with little surface water is a dominant feature of the landscape. This inhospitable environment was not conducive for human settlement in the past (above).

4.2.2 The Bankeveld in the south

The Bankeveld is a narrow strip of land between the northern bushveld and the southern grassvelds of South Africa and can be divided into the Western, Central and the Eastern Bankeveld. Only the Central Bankeveld is important to this report. The Central Bankeveld can be roughly demarcated by Krugersdorp in the south, the Pienaars River to the north, Bronkhorstspruit in the east and the Pilanesberg to the west.

The Central Bankeveld is covered by older grabbo penetrated by younger vulcanic magma which formed a series and chains of pyramid-shaped granite hills from the Pilanesberg in the north-west to Onderstepoort near Pretoria in the east. These hills, as part of the Magaliesberg valley, represent a unique ecozone characterised by grassveld savanna and near wooded valleys. The region has abundant surface water supplies. The Pienaar, the Moretele, the Hex and the Apies Rivers all drain their waters into the Crocodile River. Numerous Late Iron Age Tswana chiefdoms emerged during the last four centuries in this part of the North-West.



Figure 2- The Bankeveld characterises the southern part of the Eskom Project Area. This ecozone is home to a series of granite kopjes running from Onderstepoort *via* Madibeng to the Pilanesberg. Along the base lines of these kopjes thousands of stone walled sites occupied by ancestral Tswana clans and chiefdoms such as the Kgatla, Kwena and Fokeng occur (above).

4.3 Heritage resources in the Eskom Project Area

Different types and ranges of heritage resources occur in the bushveld in the north and in the Bankeveld ecozone in the south. Whilst heritage resources are scarce, scattered and limited in types and ranges in the northern bushveld, a wider variety of heritage resources occur in the southern Bankeveld with stone walled sites, particularly, in abundance. These sites are also clustered covering large surface areas which qualify as cultural landscapes.

4.3.1 Heritage resources in the bushveld in the north

Hunter gatherers from the Stone Age, including a few who left rock paintings during the last 20 000 years in the mountainous Waterberg to the east of the Project Area, lived in the bushveld from as early as the Middle Stone Age (MSA), 200 000 years ago. MSA and Late Stone Age (LSA) tools were observed along the banks of the Mokolo (Mogol) River and on farms to the east of the project area. At Nelsonskop, a small protrusion on the north-eastern border of the project area engravings of animal spoor, cupules and other incisions were found on a face of this hill. Most of the Stone Age sites in the bushveld were open (surface) sites which imply that most of the artefacts on these sites occur 'out of context'.

Hunter-gatherers were followed by the first agro-pastoralists who lived in semipermanent villages and who practised metal working during the last two millennia, the so-called Iron Age. Whilst the Early Iron Age (EIA) is marked by small scattered sites with (elaborately) decorated pottery and in many instances with iron smelting, Late Iron Age (LIA) sites may occur in clusters covering large tracks of land constituting cultural landscapes. The area close to the junction between the Limpopo River and the Matlabas River, on both sides of the Limpopo River, west of the Eskom Project Area, have been home to early farmers who lived in small scattered villages near these water sources. Here, they utilized pieces of land close to the banks of the rivers or near confluences between these rivers and small streams. They planted crops while small numbers of cattle and small stock were kept when grazing and shrubbery allowed for stock keeping.

EIA as well as LIA communities did not prefer the flat outstretched sand veldt of the Eskom Project Area for habitation or for farming. The scarcity of surface water for humans and animals; low annual summer rainfalls, high temperatures with accompanying high evaporation rates and soils which lacked nutrients were not conducive to crop planting. The absence of all year round grazing also did not encourage mixed farming in this part of the project area. Late Iron Age occupation on the scale that marked the Ga-Seleka and Shongwane areas to the north-east of Lephalale did not occur in the Eskom Project Area.

No historically known tribal groupings or clans occupied the Eskom Project Area during the LIA or the historical period. Communities known as the 'Vaalpense' (mixed Negroid and San) lived in the area. Their descendants can still be found here. These communities were nomadic hunters and herders before they became employed by the first colonial farmers.

Farm houses with outbuildings, family graveyards, cattle posts, outlying bore holes with drinking troughs and grazing fields lead to the establishment of cultural landscapes of some proportions in the Eskom Project Area from the second half of the 19th century. First generation homesteads, 'hartbeeshuise' constructed with clay or clay bricks and thatched roofs, have all disappeared by now and have been replaced with second and third generation farm residences. Some of these, as well as farm stores along dirt roads in the project area, may be older than sixty years. In general, however, as elsewhere in the larger region, farm homesteads with associated infrastructure and activity areas have been transformed as a result of changing subsistence patterns

4.3.1 Heritage resources in the Bankeveld in the south

The emergence of the earliest ancestors of modern humans, 2-3 million years ago, occurred in the Krugersdrop area, close to the project area. The remains of *Australopithecine* and *Homo habilis* were found in dolerite caves and underground dwellings at Sterkfontein and Swartkrans near Krugersdorp. *Homo habilis*, one of the Early Stone Age hominids, is associated with Oldowan artefacts which include crude implements manufactured from pebble stones.

The Acheulian industrial complex replaced the Oldowan industrial complex during the Early Stone Age (ESA). This phase of human existence was widely distributed across the world and is associated with *Homo Erectus* who manufactured hand axes and cleavers from as early as 500 000 years ago. One of the earliest discoveries of an Acheulian site was made at Wonderboompoort, in a part of the Magaliesberg. Late Auchelian hand axes have been found in the Bankeveld near the Eskom Project Area.

MSA sites dating from as early as 200 000 years ago have been found all over South Africa. MSA hunter-gatherer bands lived and hunted to the north and south of the Magaliesberg. MSA people looked like modern humans. They lived in small bands and occupied camp sites near water but also started to use caves as dwellings. They manufactured a wide range of stone tools, including blades and points that may have been hafted on long wooden sticks that were used as spears.

The Late Stone Age (LSA) commenced 20 000 years ago, or somewhat earlier. Various types of stone (lithic) industries that are scattered across the country are associated with the San and Khoi-Khoi people who are associated with the Late Iron Age and the historical period. The San were renowned as formidable hunter-gatherers, while the Khoi-Khoi also herded with cattle and small stock during the

last two thousand years. LSA people manufactured tools that were small but highly effective, such as arrow points and knives. They are also known for their rock art skills.

Early Iron Age (EIA) farming communities practised a mixed economy consisting of plant cultivation and stock herding near the Magaliesberg during the first half of the first millennium AD. These Bantu-Negroid people, who probably interbred with the local San and Khoi-Khoi, were ironworkers of some repute and established the first permanent villages south of the Limpopo River.

During the Late Iron Age (LIA) farming was practised in the northern, central and eastern parts of the country. Extensive stone walled sites occur in the Thaba-ea-Nape range of mountains that runs from the east to the west across the Eskom Project Area. These stone walled sites are associated with ancestor rulers of the Tswana such as the Kwena, Kgatla and Fokeng who today live in the Madibeng-Marikana and Rustenburg areas.

Numerous pre-*difaqane* and *difaqane* wars were fought during the last quarter of the 18th century and the first quarter of the 19th century in the Bankeveld. These wars led to the displacement of large numbers of Tswana clans in the Bankeveld.

Internal strife between the various Tswana chiefdoms also seems to have been on the increase from the latter half of the 18th century onwards. Paternal relatives fought against each other to attain the chieftaincy of the various Tswana chiefdoms. Succession disputes led to the splintering of chiefdoms into a growing number of independent spheres of influence in the Bankeveld.

The *difaqane* wars were caused by the Ndebele (Matabele) of Mzilikazi who arrived from the Vaal River region to occupy the Bankeveld in August 1827. The Matabele destroyed the Kwena Môgôpa, the Kgatla and what had remained of the Pô after an earlier defeat by the Pedi.

The Ndebele established several settlement complexes in this region from whence they maintained their grip on the indigenous population. Four of these Zulu/Nguni residences (*imisi*) and military kraals (*amakhanda*) have been discovered during the course of archaeological surveys in the Central Bankeveld. Two of these village complexes are located near modern Rustenburg and Madibeng respectively. Both these villages were visited and painted by the first white men who entered the Bankeveld, namely Charles Bell, who escorted Andrew Smith's expedition in June 1835, and Cornwallis Harris, who travelled and hunted extensively in the Bankeveld during December 1836.

During the early 19th century, travellers, traders and missionaries visited what is today the Bankeveld where they encountered the devastated Tswana chiefdoms. Amongst the travellers who moved through the Bankeveld were the traders Robert Schoon and William McLuckie, who visited the Ndebele village near Rustenburg in August 1829. They were followed two months later by the missionary Robert Moffat, who also passed this village and visited Mzilikazi in an *umuzi* near what is today Pretoria. In June 1835, Charles Bell and other members of Andrew Smith's expedition visited the Matabele village near Rustenburg. One year later, in December 1836, Cornwallis Harris visited and painted emHlalandlela near Madibeng.

These early travellers were followed from the 1840's by the first colonists who settled in various places in the Magaliesberg such as Rustenburg, Marikana, Schaapkraal, Hekpoort and Madibeng (Brits).

The Transvaal Anglo Boer War followed in 1880 to 1881. The Second Anglo Boer War raged from 1899 to 1902. Battlefields, graveyards and fortifications from this time still exist. The British built masonry forts, redoubts, trenches and barbed wire fences to curtail the movements of Boer commandos. In open terrain, blockhouses were spaced roughly one kilometre apart and linked with barbed wire fences. Cliffs prevented troops from crossing mountains, so

21

blockhouses were built at points were it was possible to cross such mountain ranges.

The 20th century saw the introduction of large-scale dry land farming on the Highveldt, the Bankeveld and further to the north in the bushveld. Farm homesteads with outbuildings and family graveyards became common place across vast expanses of the country side. Simultaneously, black townships developed, many later became part of homelands such as Bophuthatswana and Lebowa. The 20th century is therefore associated with numerous formal and informal homesteads which are older than sixty years, many associated with small family graveyards that are scattered across the South African landscape.

After the discovery of the Merensky Reef in 1929, economy activities in the Bankeveld near the Eskom Project Area gradually changed from farming into platinum and chrome mining. What started as small scale mining activities north of the Magaliesberg during the 20th century was soon eclipsed by the rise of the platinum mining complex near Rustenburg. The discovery of the Merensky Reef and the accompanying platinum boom was soon followed by the establishment of numerous chrome and norite mines in the North-West Province.

5 THE PHASE I HERITAGE IMPACT ASSESSMENT STUDY

The proposed Matimba Transmission Integration Project requires the construction of 2X400kV power lines from Matimba B Power Station to the Dinaledi Substation near Madibeng (Brits) and the upgrading of the Dinaledi Substation.

The Phase I HIA study for the 2X400kV power lines running between Matimba B and Dinaledi is first discussed and thereafter the Phase I survey for the Dinaledi Substation.

5.1 The survey for the Matimba B-Dinaledi power line corridor

5.1.1 The main stretches of the Matimba B-Dinaledi power line

The Matimba B-Dinaledi power line can be divided into four main stretches, namely a northern stretch that runs from the Matimba B Power Station to the Crocodile River; a central stretch that runs from the Crocodile River to the Spitskop Substation which can be divided into three options; a southern stretch with two options that runs from the Spitskop Substation to the east of Mogwase and a southern most stretch that runs from east of Mogase south-eastwards to the Dinaledi Substation near Madibeng. A last short part of this stretch has two options, namely a western and an eastern option that runs to the Dinaledi Substation.

These stretches and known heritage resources close to these stretches of the proposed new power line is now discussed.

Figure 3 – The Matimba Integration Project: The Eskom Study Area for the 2X400kV Matimba B-Dinaledi power line corridor and for the Dinaledi Substation.

Note the presence of ruins, graves and stone walled settlements in and near the Eskom Project Area.

5.1.1.1 The northern stretch

This stretch (as well as a part further to the south) is identical with the corridor that will be followed by the Matimba B-Dinaledi power line. The northern stretch runs from the Matimba B Power station to the Crocodile River further to the south and can be divided into the following parts, namely:

- From Matimba B Power Station bending westwards two times before running parallel for a short distance with the Sandloop River then bending south-westwards skirting the western edge of the Waterberg mountain mass (on Geelhoutskloof 359LQ) before bending south-westwards again and running to the Matlabas River.
- From the Matlabas River south-westwards across a level land mass to the Crocodile River. This stretch covers open savannah with no outstanding topographical features.

Known heritage resources

The following known heritage resources occur along the northern stretch for the Matimba B-Dinaledi power line corridor:

 A ruin ('murasie') occurs in the power line corridor (on Geelhoutkloof 359LQ).

5.1.1.2 The central stretch

The central stretch runs from the Crocodile River southwards to the Spitskop Substation and has three options, namely:

- A western (central) Matimba B-Dinaledi option (which is also the Matimba B-Marang power line corridor).
- A central (central) Matimba B-Dinaledi option.
- An eastern (central) Matimba B-Dinaledi option.

The three options run parallel with each other from the farms Faure 72KQ, Vlakplaas 113KQ and Wildebeesvley 115KQ in the north to Vogelstruiskraal 397KQ, Kraalhoek 399KQ and Pony 395KQ in the south.

All three options run across open savannah bushveld in the north and in the south cross smaller hills belonging to the Witfonteinrand and the Vlieëpoortberge. These hills run from the west towards the east across the farms Holfontein 361KQ, Witfontein 396KQ, Middelkop 362KQ, Pony 295KQ and Bulskop 363KQ. Communities living in scattered villages occur towards the west along this stretch of the power lines.

Known heritage resources

The following known heritage resources occur along the central stretch for the Matimba B-Dinaledi power line corridor:

- At least five ruins ('murasies') occur close to the Crocodile River's banks, close to the eastern option for the Matimba B-Dinaledi power lines. One of these ruins may be impacted by the western (central) Matimba B-Dinaledi option (which is also the Matimba B-Marang power line corridor).
- Graves which are located some distance from the eastern option.
- A single ruin on Geluk 212LQ which may be impacted by the western (central) Matimba B-Dinaledi option.
- Stone walled sites along the base of Sefikele kopje. These sites have been damaged as a result of the village with the same name which has been established around the foot of the kopje.
- Graves, a considerable distance to the south-west of Spitskop Substation

5.1.1.3 The southern stretch

The southern stretch runs from the Spitskop Substation southwards to the east of Mogwase. This stretch has two options, namely a Western Matimba B-Dinaledi option and an Eastern Matimba B-Dinaledi option.

- The western Matimba B-Dinaledi option follows the Matimba B-Marang option (from Spitskop Substation) southwards. It runs from Spitskop Substation southwards to a bend to the south-east (on Varkenfontein 73JQ) and then southwards to Roodebank 64JQ where it bends towards the east turning into the southern most stretch for the Matimba B-Dinaledi option.
- The eastern Matimba B-Dinaledi option follows the start of the Matimba B-Marang option (from Spitskop Substation) and runs southwards. It turns towards the east on Nooitgedacht 11JQ and then bends to the south-east (on Tusschenkomst 15JQ) to join the southern most stretch on Elandsfontein 69JQ

Known heritage resources

The following known heritage resources occur along the southern stretch for the Matimba B-Dinaledi power line corridor:

 Graves occur close to the junction between the Eastern Matimba B-Dinaledi option and the southernmost stretch for the Matimba B-Dinaledi option.

5.1.1.4 The southern most stretch

The southern stretch of the Matimba B-Dinaledi power line runs from the east of Mogwase south-eastwards to the Dinaledi Substation near Madibeng. A last

short part of this stretch has two options, namely a western and an eastern southern most option that runs to the Dinaledi Substation.

The southern most stretch can be divided into the following shorter stretches:

- From Elansdsfontein 69JQ eastwards and south-eastwards crossing the Crocodile River (on Vaalboschlaagte 194JQ) to a turning point further to the east (on Kareesloot 206JQ).
- Running through a series of not less that eight jinks to the south-east passing some low-rising hills on Veekraal 221JQ to the split into a western and an eastern option on Hartbeespoort 419JQ. These two options, respectively, approach the Dinaledi Substation from the west and from the east.

Known heritage resources

The following known heritage resources occur along the southern most stretch for the Matimba B-Dinaledi power line corridor:

- Three locations for ruins ('murasies') occur along the southernmost stretch
 one of these ruins is in close proximity of the power line corridor.
- A ruin on Waterval 220JQ.
- Graves at the split between the western and eastern options. However, the graves are a considerable distance from the power line corridor.

Northern Stretch	Heritage Resources	Level of	Magnitude of
		<u>significance</u>	<u>impact</u>
•Matimba B-Matlabas R	Ruin, Geelhoutkloof 359	LOW	MEDIUM-
			HIGH
Matlabas R- Crocodile R			
Central Stretch	Heritage Resources	Level of	Magnitude of
(western, central, eastern options)		significance	<u>impact</u>
Crocodile R-Spitskop	At least 5 ruins close to	LOW	LOW
	Crocodile River (one may be		(one medium-
	impacted)		high)
	Graves, some distance from	HIGH	LOW
	eastern option		
	A ruin on Geluk 212	LOW	LOW
	Stone walled sites, base of	LOW	LOW
	Sefikele kopje		
	Graves, south-west of Spitskop	HIGH	LOW
Southern Stretch	Heritage Resources	Level of	Magnitude of
(Western/Eastern Matimba B-		significance	<u>impact</u>
Dinaledi options			
 Spitskop-east of Mogwase 	Graves at junction between	HIGH	LOW
	Eastern Matimba B-Dinaledi and		
	southernmost stretch		
Southern most stretch	Heritage Resources	Level of	Magnitude of
(Western and Eastern options)		significance	<u>impact</u>
•Elandsfontein 69 - Kareesloot 206	At least three ruins	LOW	LOW
•Kareesloot 206-Hartbeespoort 419	A ruin on Waterval 220	LOW	LOW
Western option	Graves, split western/eastern	HIGH	LOW
•Eastern option	Graves, split western/eastern	HIGH	LOW
Dinaledi Substation	Heritage resources	Level of	Magnitude of
		significance	<u>impact</u>
•Krokodilkraal 426JQ (Matebeleng)	Stone walled sites, Krokodilkraal	HIGH	LOW-MEDIUM
	426 (Matebeleng) near Dinaledi		
	Substation		

Table 1- Known heritage resources along the proposed 400kV Matimba B-Dinaledi power line corridor and the Dinaledi Substation, their levels of significance and the magnitude of the impact on these heritage resources (above).

5.2 The survey for the Dinaledi Substation

The Dinaledi Substation is located on level turf veld on Krokodilkraal 426JQ, slightly to the north of a low series of granite knolls. These knolls are associated with a number of stone walled sites.

This area is also known as 'Matebeleng' which means the place of the Matabele. It is highly likely that many of the stone walled sites near the Dinaledi Substation may have been part of a Ndebele settlement complex which was controlled by Mzilikazi of the Ndebele during 1827 to 1832 when he ruled the subjugated Tswana of the Bankeveld.

6 THE SIGNIFICANCE AND IMPACT ON THE HERITAGE RESOURCES

The main types and ranges of heritage resources that were identified in the Eskom Project Area consist of:

- Ruins and graves that were identified from the Surveyor General's 1: 50 000 topographical maps and which occur in association with the power line corridor.
- Stone walled settlements or clusters of these sites which occur close to the Dinaledi Substation.

6.1 Levels of significance of the heritage resources

The majority of these heritage resources and graves were mapped. The levels of significance of these remains have been indicated as well as the magnitude of any impact on these heritage resources and graves (Figure 3 & Table 1).

6.1.1 The significance of the ruins

It is possible that ruins on Geelhoutskloof 359JQ and Geluk 212KP may be impacted by the new power line. The nature, extent and significance of these 'ruins' which have been identified from the 1: 500 000 topographical maps is unknown. These remains were mostly constructed with durable material such as brick and cement walls and usually do not have any outstanding significance as they date from the more recent past.

However, if these ruins are older than sixty years they do qualify as heritage resources and are protected by Section 34 of the National Heritage Resources Act (No 25 of 1999).

6.1.2 The significance of the graves and graveyards

All graves hold high significance as all graves and graveyards are protected by various laws. Legislation with regard to graves includes the National Heritage Resources Act (No 25 of 1999) whenever graves are older than sixty years. The act also distinguishes various categories of graves and burial grounds. Other legislation with regard to graves includes those which apply when graves are exhumed and relocated, namely the Ordinance on Exhumations (No 12 of 1980) and the Human Tissues Act (No 65 of 1983 as amended).

6.1.3 The significance of the stone walled sites

Stone walled sites are abundant in the Msiletsane and Mothutlung hills on the farm Elandsfontein 440JQ to the south of the Eskom Project Area. A few stone walled sites also occur on Krokodilkraal 246JQ near the Dinaledi Substation. It is unlikely that these stone walled sites will be negatively affected by the construction of the power line or the upgrading of the Dinaledi Substation. However, these sites have high significance which warrants a brief description.

Stone walled sites are usually clustered together in varying numbers of individual sites (*dikgôrô*) that were grouped together to form villages which covered large areas. The following settlement types can be distinguished near the Dinaledi Substation:

Tswana villages (singular motse, plural metse) which were composed of a single village (kgôrô) or a conglomeration of villages (dikgôrô). A typical kgôrô is characterized by an outer scalloped wall that encircles central kraal complexes that were usually linked together. The outer scalloped walls still contain the remains of dwellings (huts) within their surrounding yards (malapa) that were occupied by the various family groups (masika), central

kraal complexes composed of courts (*makgotla*) and enclosures for domestic stock. Tswana sites are common throughout the Project Area.

 There are some sites that are composed of long terrace walls that are 'stepped' down the slopes of mountains. The terrace walls are associated with a few small and large enclosures. These sites are not demarcated with clear outer boundary walls. It is possible that these sites may have been built by Ndebele people.

The stone walled sites near the Eskom Project Area can be rated as significant in terms of the following criteria:

- The Mabyanamatshwana range of mountains with individual mountains such as Msiletsane, Mothutlung and Malaphiri are historical beacons, as they are associated with human occupation during the last three hundred and fifty to four hundred years.
- These sites and clusters of sites represent different villages which were occupied simultaneously by several thousands of people who lived in these villages from pre-historical times (AD1650) well into the historical period. (Some of the sites may still have been occupied during the Transvaal Anglo War [1899-1902]).
- Many of the sites and clusters of sites with their surrounding landscape represent 'cultural landscapes or townscapes' which are unique, as these sites and complexes of sites reflects a regional history, in particular that of Kgatla clans.
- These townscapes incorporate intangible heritage attributes such as a sense of place, the majesty of mountains associated with the social (political) importance of rulers, activity areas which served as pastures for stock, wood and water collecting spots, possible places of sacrifice and worship, etc.
- These site complexes are unique in the context of the Late Iron Age, as they contain settlements that are characteristic of Tswana and mixed Tswana/Zulu (Ndebele) populations.

- Some of the settlements and clusters of settlements are in an excellent (pristine) condition and have not been affected by any development in the past. (However, its is also true that many sites and clusters of sites have been affected in one way or another by mining or other development activities in the past).
- These sites offer outstanding research opportunities, as they represent archaeological 'laboratories' which can be utilised for decades to come. Tangible heritage remains in the form of artefacts, structures and features are in abundance in the archaeological deposits that are associated with the sites.
- The village complexes offer exceptional educational and tourism potential, if they are developed according to correct scientific and museological principles.

6.2 Possible impact on the heritage resources

The magnitude of the impact of the various stretches of the Matimba B-Dinaledi power line and the Dinaledi Substation on various heritage resources and graves has been indicated and is discussed below (Table 1).

6.2.1 Possible impact on ruins

It is possible that ruins on Geelhoutskloof 359JQ and Geluk 212KP may be impacted by the new power line.

6.2.2 Possible impact on graves and graveyards

It seems as if no graves or graveyards will be impacted by the new power line.

6.2.3 Possible impact on stone walled sites

It seems as if no stone walled settlements will be impacted by the new power line corridor or by the upgrading of the Dinaledi Substation.

6.3 Mitigating the impact on the heritage resources

It seems as if only ruins may be impacted by the construction of the Matimba B-Dinaledi power line.

6.3.1 Mitigating the ruins

The nature, extent and significance of the 'ruins' which may be impacted on Geelhoutskloof 359JQ and Geluk 212KP is unknown. These remains usually do not have any outstanding significance as they date from the more recent past.

However, if these ruins are older than sixty years they do qualify as heritage resources and are subsequently protected by Section 34 of the National Heritage Resources Act (No 25 of 1999).

It these ruins are impacted by the development and are older than sixty years a permit for the demolishing of these ruins have to be acquired from the North-West Provincial Heritage Resources Authority (NW PHRA) which would authorise the destruction of these remains.

7 CONCLUSION AND RECOMMENDATIONS

Eskom is expanding transmission and generation infrastructure to ensure a sufficient generation capacity to sustain the country's economic growth. Consequently, the proposed Matimba Transmission Integration Project requires the construction of power lines as well as the construction and upgrading of substations. This project involves the construction of 2x400kV power lines from Matimba B Power Station near Lephalale in the Limpopo Province to the Dinaledi Substation near Madibeng (Brits) in the North-west.

The Matimba B-Dinaledi power lines may impact on any of the types and ranges of heritage resources that are outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) (see Box 1). Consequently, a Phase I Heritage Impact Assessment (HIA) study for the proposed 2X400kV Matimba B-Dinaledi power line corridor as well as for the Dinaledi Substation was conducted.

The Phase I HIA study had the following aims: to establish whether any types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act do occur in or near the Eskom Project Area and, if so, to determine the nature, the extent and the significance of these remains; to determine whether such remains will be affected by the proposed new development; and to evaluate what appropriate actions can be taken to reduce the impact of the development on such remains.

The Matimba B-Dinaledi power line was divided into four stretches, namely a northern, central, southern and a southern most stretch. The central, southern and southern most stretches have various options. The Dinaledi Substation was also subjected to a Phase I HIA study.

The main types and ranges of heritage resources that were identified in the Eskom Project Area were:

- Ruins and graves that were identified from the Surveyor General's 1: 50 000 topographical maps and which occur in association with the power line corridor.
- Stone walled settlements or clusters of these sites which occur close to the Dinaledi Substation.

The majority of these heritage resources and graves were mapped. The levels of significance of these remains have been indicated as well as the magnitude of any impact on these heritage resources and graves (Figure 3 & Table 1).

It is possible that ruins on Geelhoutskloof 359JQ and Geluk 212KP may be impacted by the new power line. The nature, extent and significance of these 'ruins' is unknown. These remains usually date from the more recent past and as such do not have any outstanding significance.

However, if these ruins are older than sixty years they do qualify as heritage resources and are subsequently protected by Section 34 of the National Heritage Resources Act (No 25 of 1999). It these ruins are impacted by the development and are older than sixty years a permit for the demolishing of these ruins have to be acquired from the North-West Provincial Heritage Resources Authority (NW PHRA) which would authorise the destruction of these remains.

It seems as if no graves or graveyards will be impacted by the new power line. However, all graves hold high significance as graves and graveyards are protected by various laws. Legislation with regard to graves includes the National Heritage Resources Act (No 25 of 1999) whenever graves are older than sixty years. The act also distinguishes various categories of graves and burial grounds. Other legislation with regard to graves includes those which apply when graves are exhumed and relocated, namely the Ordinance on Exhumations (No 12 of 1980) and the Human Tissues Act (No 65 of 1983 as amended).

It seems as if no stone walled settlements will be impacted by the new power line or the Dinaledi Substation. These sites are abundant in the Msiletsane and Mothutlung hills on Elandsfontein 440JQ to the south of the Eskom Project Area. A few stone walled sites also occur on Krokodilkraal 246JQ, near the Dinaledi Substation. It is unlikely that these stone walled sites will be affected by the upgrading of the Dinaledi Substation. However, these sites have high significance as has been outlined in the report

As a result of the near total absence of any impact with a high magnitude on any outstanding significant heritage resources along any of the stretches and options for the Matimba B-Dinaledi power line and for the Dinaledi Substation, no recommendations are put forward with regard to any specific stretch or option which has to be followed when the power line is constructed and the substation upgraded.

Juliin Orston

Dr Julius CC Pistorius Archaeologist & Heritage Management Consultant

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