

ESKOM DISTRIBUTION [EASTERN REGION]

**PHASE 1 ARCHAEOLOGICAL AND HERITAGE IMPACT ASSESSMENT  
SPECIALIST STUDY REPORT**

**PROPOSED LUDEKE SUBSTATION UPGRADE IN THE O R  
TAMBO MUNICIPALITY IN EARSTERN CAPE PROVINCE.**

**December 2008, Johannesburg**

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## REPORT DETAILS

**PROJECT NAME:** PROPOSED LUDEKE SUBSTATION UPGRADE IN THE O R TAMBO MUNICIPALITY IN THE EASTERN CAPE PROVINCE

**REPORT TITLE:** ARCHAEOLOGICAL AND CULTURAL AND ARCHAEOLOGICAL HERITAGE ASSESSMENT SPECIALIST STUDY FOR PROPOSED LUDEKE SUBSTATION UPGRADE IN THE O R TAMBO MUNICIPALITY IN THE EASTERN CAPE PROVINCE.

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**REFERENCE NO.:** HIA

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## MANAGEMENT SUMMARY

### Background

Eskom Distribution (Eastern Region) commissioned Nzumbululo Heritage Solutions (South Africa) (HeSSA) to conduct an archaeological and cultural heritage impact assessment [HIA] study for proposed Ludeke substation upgrade. The development will include extension of substation yard to allow for two new 132kv feeder bays, two new 22kv feeder bays, establishment of oil holding dam and oil drainage system installation of an additional 20MVA and a transformer bay at Ludeke in the O R Tambo Municipality in the Eastern Cape Province. The HIA focuses on potential impacts on archaeological, cultural, and historical heritage resources associated with the proposed construction's receiving environment.

### Summary Results

The field survey covered the proposed site for the extension and upgrading of the existing Ludeke substation. It was anticipated that the affected area will not yield significant archaeological site given the fact that it is heavily degraded and there are current developments already on site including the substation earmarked for upgrading. Three contemporary graves were recorded in the project area surveyed.

### Summary Recommendations

We concluded that the proposed development which involves extension and expansion of the existing Ludeke substation may proceed subject to the following recommendations:

- Although three graves were recorded in the vicinity of the project's receiving environment, the graves may not be disturbed during the proposed development. Furthermore, the graves are younger than 60 years old and do not meet the criteria set for protection under the National Heritage Resources Act, Act 25 of 1999. They are however protected by the Graves Ordinances and the human tissue act of 1983. Therefore, the recorded graves adjacent to the extension site must be properly marked and fenced off to prevent any accidental damage during the construction phase.
- We recommend that a heritage monitoring plan be put in place as part of the project's Environmental Management Plan (EMP) to ensure that the proposed extension and expansion of the substation and associated infrastructure will not interfere with chance archaeological sites that may be encountered during the development.
- The direct descendants or custodians of the recorded graves must be identified and informed of the proposed development and its potential impacts on the graves. The descendants should be treated as partners in decisions concerning the fate of the graves.
- Furthermore, the construction team should be informed about the value of the cultural heritage resources in general so as to ensure that they do not destroy any chance archaeological sites they may encounter during working on the power-line route.

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## ABBREVIATIONS

|       |  |
|-------|--|
| HIA   | Heritage Impact Assessment                   |
| EIA   | Environmental Impact Assessment              |
| HeSSA | Nzumbululo Heritage Solutions (South Africa) |
| LIA   | Late Iron Age                                |
| SAHRA | South African Heritage Resources Agency      |

## DEFINITIONS

**Archaeological** Material remains resulting from human activities, which are in a state of disuse and are in, or on, land and which are older than 100 years, including artefacts, human and hominid remains, and artificial features and structures.

**Chance Finds** Archaeological artefacts, features, structures or historical cultural remains such as human burials that are found accidentally in context previously not identified during cultural heritage scoping, screening and assessment studies. Such finds are usually found during earth moving activities such as water pipeline trench excavations.

**Cultural Heritage Resources** Same as Heritage Resources as defined and used in the South African Heritage Resources Act (Act No. 25 of 1999). Refer to physical cultural properties such as archaeological and palaeontological sites; historic and prehistoric places, buildings, structures and material remains; cultural sites such as places of ritual or religious importance and their associated materials; burial sites or *graves* and their associated materials; geological or natural features of cultural importance or scientific significance. Cultural Heritage Resources also include intangible resources such as religion practices, ritual ceremonies, oral histories, memories and indigenous knowledge.

**Cultural Significance** The complexities of what makes a place, materials or intangible resources of value to society or part of, customarily assessed in terms of aesthetic, historical, scientific/research and social values.

**Grave** A place of interment (variably referred to as burial), including the contents, headstone or other marker of such a place, and any other structure on or associated with such place. A grave may occur in isolation or in association with others where upon it is referred to as being situated in a cemetery.

**Historic** Material remains resulting from human activities, which are younger than 100 years, but no longer in use, including artefacts, human remains and artificial features and structures.

**In Situ material** *Material culture* and surrounding deposits in their original location and context, for example an archaeological site that has not been disturbed by farming.

**Late Iron Age** this period is associated with the development of complex societies and state systems in southern Africa.

**Material culture** Buildings, structure, features, tools and other artefacts that constitute the remains from past societies.

**Site** A distinct spatial cluster of artefacts, structures, organic and environmental remains, as residues of past human activity.

# **PHASE I ARCHAEOLOGICAL AND HERITAGE IMPACT ASSESSMENT SPECIALIT STUDY REPORT**

## **PROPOSED LUDEKE SUBSTATION UPGRADE IN THE O R TAMBO MUNICIPALITY IN EASTERN CAPE PROVINCE.**

### **1 INTRODUCTION**

Eskom Distribution (Eastern Region) commissioned Nzumbululo Heritage Solutions (South Africa) (HeSSA) to conduct an archaeological and cultural heritage impact assessment [HIA] study for proposed Ludeke substation upgrade. The development will include extension of substation yard to allow for two new 132kv feeder bays, two new 22kv feeder bays, establishment of oil holding dam and oil drainage system installation of an additional 20MVA and a transformer bay at Ludeke in the O R Tambo Municipality in the Eastern Cape Province. This Archaeological and Heritage Impact Assessment (HIA) study was conducted to fulfil the requirements of the National Heritage Resources Act, Act 25 of 1999 Section 38. The study focuses on identifying and assessing potential impacts on archaeological, cultural, and historical heritage resources associated with the proposed project's receiving environment.

### **2 AIMS OF THE HIA STUDY**

This HIA study primarily seeks to fulfil the requirements of South African Heritage Resources Act (Act No. 25 of 1999) Section 38 by (also see Table 1).

- ❑ Identifying heritage resources affected by the proposed substation upgrade and the associated infrastructural development.
- ❑ Assess the significance of the resources where applicable.
- ❑ Evaluate the impact thereon with respect to the socio-economic opportunities and benefits that would be derived from the proposed substation upgrading.
- ❑ Consult with the affected and other interested parties in regard to the impact on the heritage resources in the project's receiving environment.
- ❑ Make recommendations on mitigation measures with the view to reduce specific adverse impacts and enhance specific positive impacts on the heritage resources.
- ❑ Identify and discuss with local communities (where applicable) on potential impacts of the proposed substation upgrading on graves and burials sites within the affected area and make the necessary recommendations on how to handle the matter.
- ❑ Take responsibility for communicating with the SAHRA and other authorities in order to obtain the relevant permits and authorization.

**Table 1:** Terms of Reference for the Heritage Study for the proposed Ludeke substation upgrade project.

| PURPOSE  | ACTIVITIES   |
|--|--|
| <ul style="list-style-type: none"> <li>❑ Fulfill the statutory requirements of the National Heritage Resources Act, Act 25 of 1999, Section 38.</li> <li>❑ To identify and describe (in terms of their conservation and / or preservation importance) sites of cultural and/or archaeological importance that may be affected by the proposed substation upgrade project area. This study should include the identification of gravesites.</li> <li>❑ Identify and describe impacts to archaeological and cultural resources.</li> <li>❑ Make recommendations on mitigation measures.</li> <li>❑ Identify and describe management measures.</li> </ul> | <ul style="list-style-type: none"> <li>❑ Identify, describe and map sites of archaeological, historical or cultural interest affected by the proposed substation upgrade project.</li> <li>❑ Identify, where possible, the gravesites affected by the development.</li> <li>❑ Liaise with the local communities (if applicable) with regards to the impact of the development on the heritage resources.</li> <li>❑ Describe the importance or significance of these sites and whether these sites need to be conserved, protected or relocated.</li> <li>❑ Describe the procedures for mitigation or relocation of sites and provide an indication of time required for these management measures to be implemented.</li> <li>❑ Document findings and recommendations.</li> </ul> |

### 3 BACKGROUND SUMMARY

The proposed development consists of the extension of substation yard to accommodate two new 132kv feeder bays, two new 22kv feeder bays, establish an oil holding dam and oil drainage system, installation of an additional 20MVA and a transformer bay at the Ludeke Substation in O R Tambo Municipality in the Eastern Cape Province (see Fig. 1). The proposed project development is located in an open communal agricultural and grazing landscape bound by rural built up areas. The general landscape is currently marked with the existing Ludeke substation, communication tower, main road, power and telecommunication lines, boundary fence lines, communal grazing land, cornfields and homesteads. Generally, this area has a long history of intensive land use which left a distinctively altered landscape. Culture-historically, the Ludeke area has yielded evidence of recently abandoned human settlements. The general Ludeke area may have hosted human settlements extending into prehistory and recent colonial history

From a culture geography and history perspective, Ludeke area, within which the project falls, is characterised by undulating hills mostly covered by disturbed grasslands in the Eastern Cape Province. This area was historically occupied by predominantly Xhosa-speaking Nguni groups. The region has been occupied by the Gcaleka section of the Xhosa to the south, the Tembu and Bomvana tribes in the middle and the Cele and Xesibe people in the northern areas (also see Hammond-Tooke, 1993). The area also saw several colonial and Frontier wars as the white settler advanced from the western cape region. . During the colonial era the area was reserved for African settlement often referred to as Bantu homelands in former Transkei homeland. Today the project area of Ludeke is predominantly communal farming, residential area. The substation site itself is surrounded by rural residential properties and grazing areas, developed landscapes and infrastructures such as



access roads, existing powerlines, farm boundary lines and farm and mining buildings and associated infrastructures. It is within this cultural landscape that the project area is located.

#### **4 STUDY METHODS**

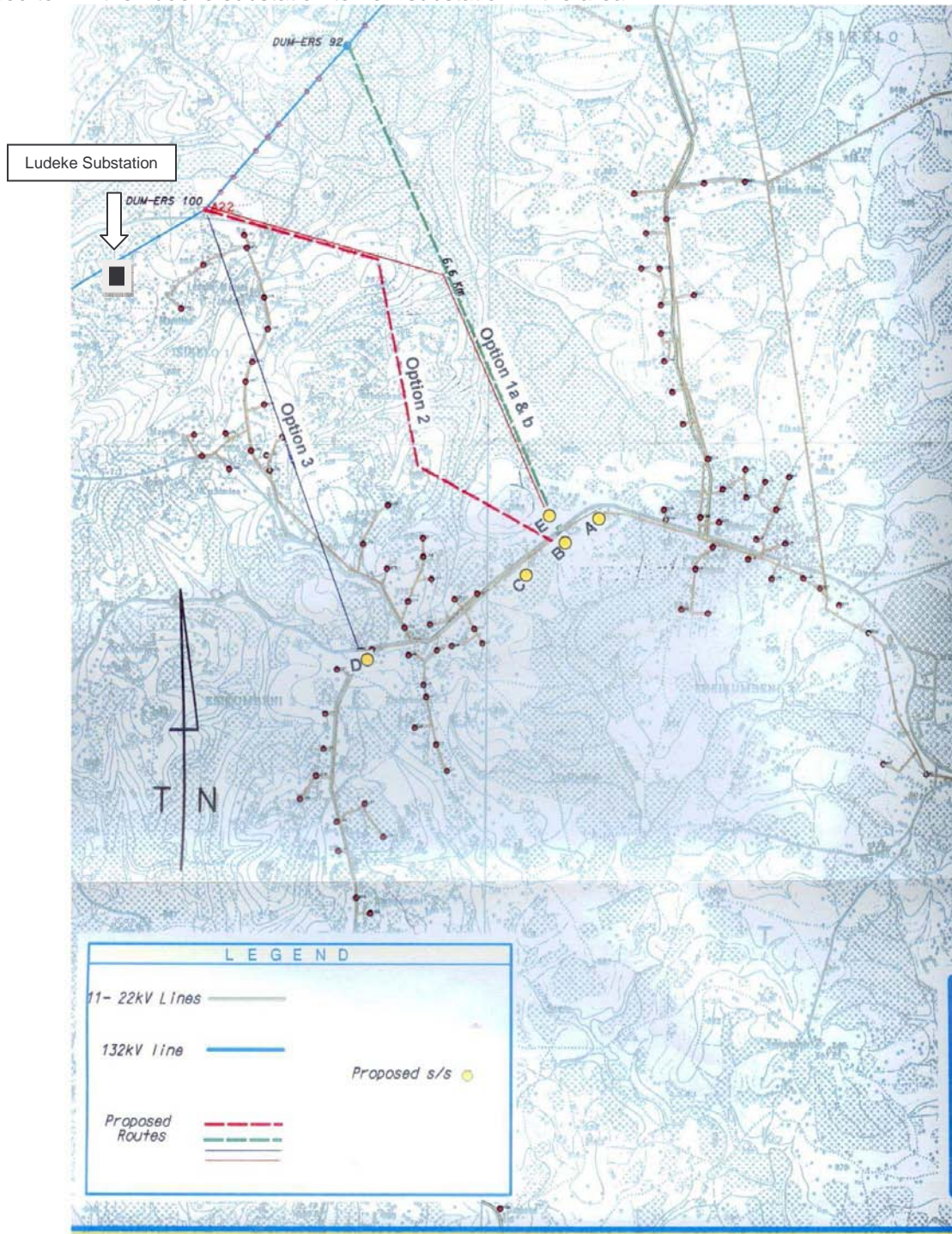
Cebo Environmental Consultancy specialist team conducted Environmental Impact Assessment (EIA) study for the proposed electricity supply development project in Ludeke (Johanne du Pireez, 2003). This study provided detailed background data on the project area. We began the HIA study with a desktop survey of available geo- and bio-data on the project area (Fig 1 & Fig. 2). We then proceeded to a field reconnaissance study of the proposed substation extension and expansion site. In the third segment we conducted an archaeological and cultural heritage field survey of the affected area and finally conducted an assessment and report production for the study.

Identification of archaeological sites during surveying depends on visibility and accessibility. The proposed project area is generally accessible. The proposed site for the project was cleared during the construction and routine maintenance of the existing substation and furthermore the substation is adjacent to R61 Bizana-Flagstaff road (Fig 2). Under these disturbed conditions, it was anticipated that the chances for archaeological material preserved *in situ* in most portions of the substation extension site were limited.

Figure 1: Proposed Ludeke substation upgrade project area.



**Fig 2:** 1:50 000 Scale topographic map showing project area. There are further powerline developments that are proposed to link the Ludeke substation to new substation in the area.



## 5 RESULTS OF THE HIA.

### 5.1. RESULTS OF ARCHAEOLOGICAL EXAMINATIONS FOR THE LUDEKE SUBSTATION UPGRADING

#### Location Details

**Province:** Eastern Cape [Fig 1 & Fig. 2]

**Local Municipalities:** Greater O RTambo

**Name Properties affected:** Ludeke communal lands

**Proposed development:** Extension and expansion of existing 132kv/22kv Ludeke substation.

**1:50 000 map name:** 3029 DC [Fig. 2]

#### GPS Co-ordinates and description of proposed extension and expansion site:

- S30° 50' 459" E029° 45' 550" (Ludeke substation main gate)
- S30° 50' 426" E029° 45' 573" (Existing 132kv power line)
- S30° 50' 417" E29° 45.530" (Gravesite with three graves)
- S30° 50' 462" E29° 45.' 482" (section of the project area)



**Plates 1 and 2:** Ludeke sub station site earmarked for upgrade to accommodate new powerline capacity and R61 road passing to the east of the substation.

#### Archaeological and Cultural Sites

No archaeological sites were identified in course of field investigations for the substation servitude area. The affected landscaped is heavily degraded from previous and current land use patterns and development already on affected sites (Plates 1-4). As such the chances of recovering archaeological materials *in situ*, particularly open sites were seriously compromised and limited (see Plates 3 & 4). If such sites existed along the surveyed substation site, they may have been destroyed previously during historic land uses that were prevalent in the area including deep ploughing, earth moving during the construction of the existing substation and adjacent R61 road and other destructive land use patterns that have affected the project area prior to this proposed project.



**Plates 3 and 4:** Eroded and disturbed surfaces at the development site were inspected to check for exposed archaeological materials. There are existing developments such as powerlines within the project area. The local community uses the open land for cattle grazing.

### Historical and Recent sites

Generically speaking, historic sites are associated with white settlers, colonial wars, industrialization; African population settlements, contemporary ritual sites and settler farming communities are the most common and visible. The more common functions of places of cultural historical significance include:

- Domestic
- Recreation & culture
- Commerce & trade
- Agriculture & subsistence
- Social
- Health care
- Religion
- Designed landscape
- Funeral (cemeteries, graves and burial grounds)
- Civil and Structural Engineering
- Education
- Defence /Military

Although the general Ludeke landscape is associated with historical events such as the recent peopling of the region (migration of Nguni-speaking farming communities from the east along the India coastal land during the Late Iron Age [Huffman 2007]) as well as the colonial homeland history., no specific historical sites are associated with the specific area earmarked for the substation expansion.

### Burial grounds and graves

Three contemporary graves dating to the 1980s were identified within the vicinity of the proposed development site (Plate 5). The graves are arranged in one row and marked by brick and cement rectangular platforms. Two have inscribed headstones (Plate 6). Grave number (1) belongs to Simon Pindana; grave number (2) is marked "Marther Pindana" and grave (3) is smaller in size and not inscribed. The affected graves are closely associated and basing on the similarities in the second names suggests that they may belong to one family.

In terms of the Section 36 (3) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) no person may, without a permit issued by the relevant heritage resources authority:

(a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;

(b) destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or

(c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment, which assists in the detection or recovery of metals.

Regarding graves and burial grounds, the NHRA distinguishes between the following:

- Ancestral graves
- Royal graves and graves of traditional leaders
- Graves of victims of conflict
- Graves of individuals designated by the Minister by notice in the Gazette
- Historical graves and cemeteries
- Other human remains, which are not covered in terms of the Human Tissue Act, 1983 (Act No.65 of 1983).

According to the Eskom plan for the upgrading of the existing substation, the graves will remain about 2.5 metres outside the new proposed substation servitude fence. Although these graves do not fall under the jurisdiction of the NHRA, Act 25 of 1999, from cultural and living heritage perspectives, burial grounds and gravesites are accorded the highest social significance threshold. They have both historical and social significance and are considered sacred. They may not be tampered with or interfered with during the proposed substation extension construction.

***Previously unidentified burial sites/graves*** – Although the possibility of encountering previously unidentified burial sites is limited along the affected substation servitude, should such sites be identified, they are still protected by applicable legislations and they should be protected.



**Plate 5 and 6** view of the 3 graves recorded at the development site; note that the proposed servitude fence will be 2, 5 metres from these graves.

## 6 STATEMENT OF OVERALL IMPACTS

The affected project area is heavily degraded by existing and previous land use activities. Three recent graves were recorded within the vicinity of the proposed project area. No archaeological properties were recorded within the proposed project area. In spite of this observation, it is important to note that in any given milieu, archaeological resources are fixed in space. Any activity that threatens to alter the status quo is an immediate and direct threat to any archaeological resources in its direct path. The impact will be permanent in nature, extent and duration (Bickford and Sullivan, 1977). In principal, given the presence of graves recorded in the vicinity of the proposed project area the project managers must ensure that the recorded graves are not impacted upon during the construction phase.

## 7 OVERALL RECOMMENDATIONS

- We recommend that a heritage monitoring plan be put in place as part of the project's Environmental Management Plan (EMP) to ensure that the proposed extension and expansion of substation and associated infrastructure will not interfere with the recorded graves and chance archaeological sites that may be encountered subsurface during the development, especially during construction phase.
- The recorded graves must be clearly marked and fenced off to avoid accidental damage during the construction phase.
- The foot print impact of the proposed substation extension should be kept to minimal to limit the possibility of encountering chance finds.
- The direct descendants or custodians of the recorded graves must be identified and informed of the proposed development and its potential impacts to the graves. The descendants should be treated as partners in decisions concerning the fate of the graves.
- Furthermore, the construction team should be informed about the value of the cultural heritage resources in general so as to ensure that they do not destroy the chance archaeological sites they may encounter during working on the power-line route.

## 8 CONCLUDING REMARKS

From a heritage perspective the project's receiving cultural landscape under potential threat from the proposed development, save for the three recent graves, the site does not have high significance threshold to call for total protection. Detailed monitoring procedures should be scheduled within the project EMP in order to adequately respond to chance finds. Subject to the recommendations herein made, there are no significant cultural heritage resources barriers to the proposed development. With the constraints herein discussed and appropriate monitoring measures adopted, there are no objections to the proposed substation extension development.

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