

Proposed development of the Windfield substation
to Villiers substation 88kV power line, Free State

**CHANCE FIND PROCEDURE
PALAEOLOGY**

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1. INTRODUCTION

The purpose of this document is to provide Eskom and their contractors with the appropriate response guidelines (extracted and adapted from the National Heritage Resources Act (Act No. 25 of 1999) Regulations Reg No. 6820, GN: 548, taking into consideration international best practice based on World Bank, Equator Principles and the International Finance Corporation Performance Standards, 1972 UNESCO Convention on the Protection of World Cultural and Natural Heritage (World Heritage Convention), that should be implemented in the event of chance discovery of heritage resources. These guidelines or chance find procedures (CFPs) can be incorporated into Eskom's policies that may have relevance during construction and operational phases. The CFPs aim to avoid and/or reduce project risks that may result due to chance finds, whilst considering international best practice.

2. DEFINITIONS

The term heritage resource includes structures, archaeology, meteors, and public monuments as defined in the South African National Heritage Resources Act (Act No. 25 of 1999) (NHRA) Sections 34, 35, and 37.

Procedures specific to palaeontological fossils (Section 35 of NHRA) and burial grounds and graves (BGG) as defined under NHRA Section 36 will be discussed separately as these require the implementation of separate criteria for CFPs.

3. CHANCE FIND PROCEDURES

The following procedural guidelines must be considered in the event that previously unknown heritage resources or burial sites are exposed or found during the life of the project.

3.1 Initial Identification and/or exposure

Heritage resources or burial sites may be identified during construction or accidentally exposed. The initial procedure when such sites are found aim to avoid any further damage. The following steps and reporting structure must be observed in both instances:

- a. The person or group (identifier) who identified or exposed the burial ground must cease all activity in the immediate vicinity of the site;
- b. The identifier must immediately inform his/her supervisor of the discovery;
- c. The supervisor must ensure that the site is secured and control access; and
- d. The supervisor must then inform the relevant Eskom personnel responsible for at least the following portfolios: Community Liaison (CL), Environmental Control (EC) and Health and Safety (HS).

3.2 Chance Find Procedures: Heritage Resources

In the event that previously unidentified heritage resources are identified and/or exposed during construction or operation of the Villiers-Windfield Line Project, the following steps must be implemented subsequent to those outlined under Section 3.1 above:

- a. The Villiers-Windfield Line Project Manager and/or Heritage Resources Management (HRM) Unit must be notified of the discovery;
- b. Eskom will assign a qualified specialist (palaeontologist and/or archaeologist) to consider the heritage resource, either via communicating with the EC Officer via telephone or email, or based on a site visit;
- c. Appropriate measures will then be presented to Eskom;
- d. Should the specialist conclude that the find is a heritage resource protected in terms of the NHRA (1999) Sections 34, 35, 37 and NHRA (1999) Regulations (Regulation 38, 39, 40), Eskom will notify SAHRA and;
- e. Based on the comments received from SAHRA, Eskom will provide a Terms of References Report and relevant associated costs if necessary.

3.3 Chance Find Procedures: Palaeontology

3.3.1 Isolated bone finds

In the process of digging excavations, isolated bones may be spotted in the hole sides or bottom, or as they appear on the spoil heap. By this is meant bones that occur singly, in different parts of the excavation. If the number of distinct bones exceeds six pieces, the finds must be treated as a bone cluster (below).

3.3.1.1 Response of personnel

The following responses should be undertaken by personnel in the event of isolated bone finds:

Action 1: An isolated bone exposed in an excavation or spoil heap must be retrieved before it is covered by further spoil from the excavation and set aside;

Action 2: The site foreman and EC Officer must be informed;

Action 3: The responsible field person (site foreman or EC Officer) must take custody of the fossil. The following information is to be recorded:

- Position (excavation position);
- Depth of find in hole;
- Digital image of hole showing vertical section (side); and
- Digital image of fossil.

Action 4: The fossil should be placed in a bag (e.g. a Ziploc bag), along with any detached fragments. A label must be included with the date of the find, position information, and depth; and

Action 5: The EC Officer is to inform the developer who then contacts the archaeologist and/or palaeontologist contracted to be on standby. The EC Officer is to describe the occurrence and provide images via email.

3.3.1.2 Response by palaeontologist

The palaeontologist will assess the information and liaise with Eskom and the EC Officer and a suitable response will be established.

3.3.2 Bone cluster

A bone cluster is a major find of bones (e.g. several bones in close proximity or bones resembling parts of a skeleton). These bones will likely be seen in broken sections of the sides of the hole and as bones appearing in the bottom of the hole and on the spoil heap.

3.3.2.1 Response of personnel

The following responses should be undertaken by personnel in the event of bone cluster finds:

Action 1: Immediately stop excavation in the vicinity of the potential material. Mark or flag the position as well as the spoil heap that may contain fossils;

Action 2: Inform the site foreman and the EC Officer; and

Action 3: The EC Officer is to inform the developer who will appoint a palaeontologist and/or archaeologist to assess the situation. The EC Officer is then to describe the occurrence and provide images via email.

3.3.2.2 Response by palaeontologist

The palaeontologist will assess the information. It is likely that a Field Assessment by the palaeontologist will be carried out.

It will be probably be feasible to avoid the find and continue to the excavation farther along, or proceed to the next excavation, so that the work schedule is minimally disrupted. The response time/scheduling of the Field Assessment is to be decided in consultation with the developer/owner and the environmental consultant.

The Field Assessment could have the following outcomes:

- If a human burial, the appropriate authority is to be contacted. The find must be evaluated by a human burial specialist to decide if Rescue Excavation is feasible, or if it is a Major Find.
- If the fossils are in an archaeological context, an archaeologist must be contacted to evaluate the site and decide if Rescue Excavation is feasible, or if it is a Major Find.
- If the fossils are in a palaeontological context, the palaeontologist must evaluate the site and decide if Rescue Excavation is feasible, or if it is a Major Find.

3.3.3 Rescue Excavation

Rescue Excavation refers to the removal of the material from the “design” excavation. This would apply if the amount or significance of the exposed material appears to be relatively circumscribed and it is feasible to remove it without compromising contextual data. The time span for Rescue Excavation should be reasonable rapid to avoid any undue delays, e.g. one to three days and definitely less than one week.

In principle, the strategy during the mitigation is to “rescue” the fossil material as quickly as possible. The strategy to be adopted depends on the nature of the occurrence, particularly the density of the fossils. The methods of collection would

depend on the preservation or fragility of the fossil and whether in loose or in lithified sediment. These could include:

- On-site selection and sieving in the case of robust material in sand; and
- Fragile material in loose sediment would be encased in blocks using Plaster-of-Paris or reinforced mortar.

If the fossil occurrence is dense and is assessed to be a “Major Find”, a carefully controlled excavation is required.

3.3.4 Major Finds

A Major Find is the occurrence of material that, by virtue of quantity, importance and time constraints, cannot be feasibly rescued without compromise of detailed material recovery and contextual observations.

3.3.4.1 Management options for major finds

In consultation with the developer/owner and the environmental consultant, the following options should be considered when deciding on how to proceed in the event of a Major Find.

Option 1: Avoidance

Avoidance of the Major Find through project redesign or relocation. This ensures minimal impact to the site and is the preferred option from a heritage resource management perspective. When feasible, it can also be the least expensive option from a construction perspective.

The find site will require site protection measures, such as erecting fencing or barricades. Alternatively, the exposed finds can be stabilised and the site refilled or capped. The latter is preferred if excavation of the find will be delayed substantially or indefinitely. Appropriate protection measures should be identified on a site-specific basis and in wider consultation with the heritage and scientific communities.

This option is preferred as it will allow the later excavation of the finds with due scientific care and diligence.

Option 2: Emergency Excavation

Emergency excavation refers to the “no option” situation where avoidance is not feasible due to design, financial and time constraints. It can delay construction and emergency excavation itself will take place under tight time constraints, with the potential for irrevocable compromise of scientific quality. It could involve the removal of a large, disturbed sample by an excavator and conveying this by truck from the immediate site to a suitable place for “stockpiling”. This material could then be

processed later. Consequently, the emergency excavation is not the preferred option for a Major Find.

3.3.5 Exposure of fossil shell beds

3.3.5.1 Response of personnel

The following responses should be undertaken by personnel in the event of intersection with fossil shell beds:

Action 1: The site foreman and EC Officer must be informed;

Action 2: The responsible field person (site foreman or EC Officer) must record the following information:

- Position (excavation position);
- Depth of find in hole;
- Digital image of the hole showing the vertical section (side); and
- Digital images of the fossiliferous material.

Action 3: A generous quantity of the excavated material containing the fossils should be stockpiled near the site, for later examination and sampling;

Action 4: The EC Officer is to inform the developer who will appoint a palaeontologist and/or the archaeologist to assess the situation. The EC Officer is to describe the occurrence and provide images via email.

3.3.5.2 Response by palaeontologist

The palaeontologist will assess the information and liaise with the developer and the EC Officer and a suitable response will be established. This will most likely be a site visit to document and sample the exposure in detail, before it is covered up.

3.3.6 Exposure of fossil wood and peats

3.3.6.1 Response of personnel

The following responses should be undertaken by personnel in the event of exposure of fossil wood and peats:

Action 1: The site foreman and EC Officer must be informed;

Action 2: The responsible field person (site foreman or EC Officer) must record the following information:

- Position (excavation position);
- Depth of find in hole;
- Digital image of the hole showing the vertical section (side); and
- Digital images of the fossiliferous material.

Action 3: A generous quantity of the excavated material containing the fossils should be stockpiled near the site, for later examination and sampling;

Action 4: The EC Officer is to inform the developer who must then contact the archaeologist. The EC Officer is to describe the occurrence and provide images via email.

3.3.6.2 Response by palaeontologist

The palaeontologist will assess the information and liaise with the developer and the EC Officer and a suitable response will be established. This will most likely be a site visit to document and sample the exposure in detail, before it is covered up.

3.3.7 Monitoring for fossils

A regular monitoring presence over the period during which excavations are made, by either an archaeologist or palaeontologist, is generally not practical.

The field supervisor or foreman and workers involved in digging excavations must be encouraged and informed of the need to watch for potential fossil and buried archaeological material. Workers seeing potential objects are to report to the field supervisor who, in turn, will report to the EC Officer. The EC Officer will inform the archaeologist and/or palaeontologist contracted to be on standby in the case of fossil finds.

To this end, responsible persons must be designated. This will include hierarchically:

- The field supervisor or foreman who is going to be most often in the field;
- The EC Officer for the project;
- The Project Manager

Should the monitoring of excavations be stipulated in the Archaeological Impact Assessment and/or the Heritage Impact Assessment, the contracted Monitoring Archaeologist (MA) can also monitor for the presence of fossils and make field assessment of any material brought to attention. The MA is usually sufficiently informed to identify fossil material and this avoids additional monitoring by a palaeontologist. In shallow coastal excavations, the fossils encountered are usually in an archaeological context.

The MA then becomes the responsible field person and fulfils the role of liaison with the palaeontologist and coordinates with the developer and the EC Officer. If fossils are exposed in non-archaeological contexts, the palaeontologist should be summoned to document and sample/collect them.

3.4 Chance Find Procedures: Burial Grounds and Graves

In the event that previously unidentified Burial Grounds and Graves are identified and/or exposed during construction or operation of the Villiers-Windfield Line Project, the following steps must be implemented subsequent to those outlined under Section 3.1 above:

1. The Eskom Project Manager must immediately be notified of the discovery in order to take the required further steps:

i. The local South African Police Service (SAPS) will be notified on behalf of Eskom;

ii. Eskom will deploy a suitably qualified specialist to inspect the exposed burial and determine in consultation with the SAPS:

- The temporal context of the remains, i.e.:
 - a. forensic,
 - b. authentic burial grave (informal or older than 60 years, NHRA (1999) Section 36); or
 - c. archaeological (older than 100 years, NHRA (1999) Section 38); and
- If any additional graves may exist in the vicinity.

2. Should the specialist conclude that the find is a heritage resource protected in terms of the NHRA (1999) Section 36 and NHRA (1999) Regulations (Regulation 38, 39, 40), the specialist will notify SAHRA on behalf of Eskom;

3. SAHRA may require that an identification of interested parties, consultation and /or grave relocation take place;

4. Consultation must take place in terms of NHRA (1999) Regulations 39, 40, 42; and

5. Grave relocation must take place in terms of NHRA (1999) Regulations 34.

4 CONCLUSION

The CFP's presented in this document serve as international best practice policy for the accidental discovery of heritage resources and burial sites. Based on the definitions provided within this document and the proposed lines of communication, Eskom will be able to mitigate the accidental discovery of heritage resources and burial sites throughout the various phases of the project.