

 Eskom	Specification	Kusile Power Station
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1. Introduction

Electrical cables are running in the cable tunnels. This area must be accessible for maintenance to carry out their activities. The build-up of slurry negatively impacts the maintenance of the plant.

2. Supporting Clauses

2.1 Scope

This document gives a detailed scope of work for cleaning the cable tunnel to enable the Contractor to compile and submit a quotation of required for the service at Kusile Power Station.

2.1.1 Purpose

To define requirements for cleaning of the cable tunnel at Kusile Power Station. This document gives guidance on how the cable tunnel can be cleaned without compromising the environment and safety of people.

2.1.2 Applicability

This document is applicable to Kusile Power Station

2.1.3 Effective date

[This document is effective after all signature has been received.](#)

2.2 Normative/Informative References

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

2.2.1 Normative

- [1] 240-48929482: Tender Technical Evaluation Procedure
- [2] [474-59 Internal Audit Procedure](#)

2.2.2 Informative

Not applicable

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2.3 Definitions

2.3.1 Document

None.

2.4 Abbreviations

Abbreviation	Description
BO	Black Owned
BOP	Balance Of Plant
BPLwD	Black People Living with Disabilities
BWO	Black Women Owned
BYO	Black Youth Owned
ORHVS	Operating Regulations For High Voltage Systems
PSR	Plant Safety Regulations
RP	Responsible Person
SHEQ	Safety, Health, Environment and Quality
SOW	Scope of Work
BEE	Black Economic Empowerment

2.5 Roles and Responsibilities

Table 1 outlines the line of responsibility, accountability and relevant stakeholders to be consulted and informed.

Responsible	Accountable	Consult	Inform
Contract Supervisor	Contract Manager	- Shift Manager - Civil System Engineer - Aux Engineering - Manager	Risk, Procurement, Operating and Engineering
Assurance that all action listed in this procedure are undertaken (follow up, advice, consultation)	Implementation of this procedure, random reviews and audits for adherence, provide	Provide support, advice and communication with outside stakeholders where needed.	Planning and advice

2.6 Process for Monitoring

This process will be monitored through internal audits and assessments.

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2.7 Related/Supporting Documents

Not applicable

3. Kusile Power Station Cleaning Scope Of Work

3.1 Scope Of Work Requirements

- The service is for cleaning all the cable tunnels at Kusile Power Station including the sumps in the tunnels. Refer to the appendix A and B for the dimensions of the cable tunnel and basement. The electrical cables should also be washed off the slurry.
- On the turbine (aux bay), work included cleaning of trenches, unblocking of drain lines and removal of slurry on the -5meter level.
- The tunnels are currently full of slurry and or solids, the height of the slurry is estimated to be 1,7 m high.
- Draining of the tunnel maybe required at the beginning before work can start.
- The plant will be operational; it will not be switched off to allow cleaning as a result there is a risk of having inflow into the tunnel whilst cleaning. Necessary measures to be put in place not to endanger any life.
- Sandbags are to be used to manage the inflow in certain areas where there would be continuous inflow.
- Accumulated settled solids in the tunnels shall be dislodged by high pressure water jetting and vacuumed using a truck. High pressure water using fire hydrants and nozzles, will also be required.
- The vacuum material will be disposed onsite. The exact area should be confirmed with the Project Manager, when the work starts.
- In the cable tunnels, where cleaning will be taking place, there are electrical cables that should not be damaged. There is also a risk of sparks being emitted in the area during cleaning, the contractor to take necessary actions to mitigate damage to the plant and to safety of personnel.
- Respirators need to be provided when cleaning at the FGD cable tunnels

NB: All equipment, consumables, resources, diesel, etc. required to execute the scope are to be supplied by the contractor. The contractor shall compile the method statement of how the scope will be executed.

During cleaning operations, the following safety measures shall be enforced:

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- All personnel shall be provided with personal protective clothing including hardhat, overalls, safety boots, water boots, gloves, safety glasses, hearing protection and a high visibility safety vest, coveralls, etc.
- All vehicles including mechanical equipment shall be fitted with audible warning devices to warn people behind the vehicles when the vehicles are reversing.
- Necessary approvals need to be sourced for vehicles to access Power block.

3.2 Management meetings

- Site & inspection meetings between Eskom & the contractor shall be weekly and when required. Inspection by senior members of the contractor shall be carried out on completion of the work.
- Meetings of a specialist nature may be convened as specified elsewhere in this Service Information or if not so specified by persons and at times and locations to suit the Parties, the nature and the progress of the service.
- Records of these meetings shall be submitted to the Contract Manager by the person convening the meeting within five days of the meeting.
- All meetings shall be recorded using minutes or a register prepared and circulated by the person who convened the meeting.
- Such minutes or register shall not be used for the purpose of confirming actions or instructions under the contract as these shall be done separately by the person identified in the conditions of contract to carry out such actions or instructions.

3.3 safety, health, environment and quality management

- The Contractor shall comply with the Kusile power station's Safety, Health, Environment and Quality policies. The contractor and/or supplier shall have a documented and implemented management system that are in line with Kusile Power Station SHEQ management systems e.g. environmental policy, operational procedures relating to their activities, aspects/impacts register etc.
- The contractor and/or supplier shall prepare an environmental management plan relating to their activities that will be carried out. The environmental management plan shall be based on, amongst others, Eskom Kusile Power Station's OEMP and any other applicable environmental legislation. The environmental management plan must include all the aspects and impacts relating to the activity and address the principle of continual improvement
- The contractor and or supplier employees shall be inducted on the environmental requirements as per these documents.
- The contractor and/or supplier shall comply with all Eskom Kusile Power Station environmental requirements such as policies, standards and procedures
- The contractor shall appoint trained and competent personnel in writing, who will have the responsibilities of implementing all environmental requirements on a specific contract

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- Method statements shall be submitted for approval by the Eskom Kusile Power Station Senior
- Environmental Advisor, prior to commencement of and activity. Non-conformance and incident reporting and investigations shall be done by the contractor, such reports must include but not limited to the following information:
 - I. The cause of the non-conformance/incident
 - II. The proposed actions to correct and prevent recurrence
- Eskom Kusile Power Station shall issue non-conformances where there are deviations from Eskom Kusile Power Station Procedures and any other environmental requirements
- The contractor and or supplier shall allocate funds for the implementation of environmental requirements
- Contractor shall comply with environmental requirements as per 237-555-ENV-SP Kusile Environmental Management Requirements for contractors and Supplier Specification.

3.4 Qualitative Technical Evaluation Criteria

- Provide sufficient storage containers at the site where you will be working, labelled depicting general or hazardous waste.
- No hazardous waste may be stored for a period of more than 90 days on the Kusile power station premises at your allocated site.
- Ensure that all hazardous waste is disposed at a licensed Class A disposal site. A copy of the hazardous waste disposal certificate must be submitted to the project/contract manager.
- Ensure that all other general waste is disposed at a licensed and registered waste dump.

**Ensure that your site does comply with the general good housekeeping practices.
Redundant material should be removed to allocated sites.**

3.5 TET Member Responsibilities

- In the interest of promoting a safe and healthy working environment, the Eskom executive committee has approved the implementation of cardinal rules, to improve safety in the organisation. These rules will also be applicable to all contracting staff.
- The business is concerned about the emotional, social as well as economic effect of all these unnecessary incidents, and would like to correct behaviour pro-actively.
- These rules are determined beforehand to enable the organisation to clearly communicate the established cardinal rules and how to deal with non-compliance to the workforce prior to the implementation of such rules. These rules have been implemented as from 1 January 2009 and will be strictly enforced.
- Failure by any person or Contractor engaged in doing business with Eskom to adhere to these rules, will lead to serious action being taken with serious consequences. These actions include termination of service of an individual and even blacklisting of Contractors not taking the rules seriously.

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- It is therefore strongly advised that these rules be taken seriously, communicated to all your staff, ensure that they all understand the rules, understand the consequences of violating a rule and sign a document stating that they understand and acknowledge the implications of these rules.

There are 7 identified Lifesaving rules, and they are as follows:

RULE	DESCRIPTION OF RULE
Rule 1	OPEN, ISOLATE, TEST, EARTH, BOND, AND CREATE AN EQUIPOTENTIAL ZONE BEFORE TOUCH (That is plant, any plant operating above 1000 V)
Rule 2	HOOK UP AT HEIGHTS Working at height is defined as any work performed above a stable work surface or where a person puts himself/herself in a position where he/she exposes himself/herself to a fall from or into.
Rule 3	BUCKLE UP No person may drive any vehicle on Eskom Kusile Power Station business and/or on Eskom Kusile Power Station premises: Unless the driver and all passengers are wearing seat belts.
Rule 4	BE SOBER No person is allowed to be under the influence of intoxicating liquor or drugs while on duty
Rule 5	PERMIT TO WORK Where an authorisation limitation exists, no person shall work without the required permit to work.
Rule 6	ENSURE SAFE LIVE WORKING Ensure all live work basic principles are adhered to, as outlined (for the method being used) in the High Voltage Live Working Standard for the respective division
Rule 7	NO REVERSING WITHOUT A SPOTTER OR FLAGMAN Ensure that construction vehicles are only reversed when a spotter or flagman is in place

3.6 Health and safety management

3.6.1 After Contract Award

- a) The Contractor must compile a Health and Safety Plan, filed in a Health and Safety File, comprising of the following:

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- b) Proof of the contracting company's own Health and Safety Policy.
- c) Proof of appointments, assignments and designations as required in terms of the Occupational Health and Safety Act, No 85 of 1993.
- d) Proof of Risk Assessments regarding Hazards identified.
- e) Proof of Safe Work Procedures that derived out of the Risk Assessments.
- f) Proof of the contracting company's own Emergency Plan that will deal with their own emergencies on site.
- g) Proof of a Fall Protection Plan, if required to perform work at elevated levels developed by a competent person appointed by the contracting company.
- h) Proof of "Notification to perform Construction Work" – a copy of the notification addressed to the Department of Labour as required Regulation 3 of the Construction Regulations.
- i) Proof of an Induction Program (Kusile SHE Rules be used as a Guide) and an attendance register signed by its employees prior the commencement of any work on site.
- j) Proof of the contracting company's employees Medical Fitness Certificate. (Must still be valid – one year. May only have been issued by an occupational health practitioner).
- k) Proof of contractors weekly Health and Safety Rep Inspections regarding its own site and where detached work is performed.
- l) Proof of Personal Protective Equipment (PPE) issued to contractor's employees.
- m) Proof of contracting company's Accident/Incident Reporting and Investigation System.
- n) Proof of checklists and where applicable test certificates, regarding contractor's tools, equipment, machinery, mobile equipment, vessels under pressure and any other applicable checks required by the Act.
- o) A "Section 37(2) Agreement with Mandatory" needs to be drawn up by the Contractor and the Contract Manager and co-signed before work can commence.
- p) The Safety Officer employed by Kusile Power Station will audit these Health and Safety Plan to ensure compliance with the provisions of the Act, before the Contractor will be allowed to start with the Works.

3.7 Manpower requirements

3.7.1 The Supplier Cleaning Staff

- a) The Contractor will employ sufficient staff for cleaning the cable tunnel and rehabilitate around where they had spilled whilst cleaning. This should include but not limited to the following skilled personnel as well:
 - I. SHE Officer
 - II. Supervisor
 - III. Competent equipment operators
 - IV. Spotter(s)
- b) Cleaning will be done on continuously (including weekends and public holidays) until the work is completed. The working hours for each employee to comply to the total of 173 hours per month excluding overtime. The Contractor to manage the hours of their employees in

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- c) The Contractor supplies proof that staff performing a task has been trained and is aware of all conditions /requirements pertaining to the use of the equipment that he is using. Proof of such training must be kept and made available to the Employer on request.
- d) The Contractor staff will wear uniquely always identified clothing which will identify the Contractor.
- e) The Contractors will ensure that the work is always done under constant supervision.

3.8 Site inspections requirement

The Contractor acknowledges that he/she has satisfied himself, before submitting his tender, as to the layout of the premises, the quantities and nature of work and labour, materials and equipment necessary for the completion of the services, additional services, the means of access to the premises and, in general, shall himself obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect his contract.

3.9 Supervision Requirements

The Contractor is expected to provide the total infrastructure to competently fulfil the requirements of this contract. This shall include adequate management and supervision at all levels.

The Contractor is required to submit a staff structure indicating management and supervisory levels. Eskom's contract manager must approve any change to such staff structure and after such approval; the Contractor shall submit an updated staff structure to the Contract Manager.

3.10 PSR and ORHVS regulations Authorisation requirements

- a) All Contractors will ensure that they are informed of all the requirements of Eskom's Plant Safety Regulations and ORHVS and that they at all times comply to the requirements of these Regulations.
- b) All Supervisors of contracting companies, who are directly involved with Eskom's Permit to Work System, shall be trained on PSR and ORHVS regulations and on successful completion of Kusile's authorization / evaluation process, and must be authorized as Responsible Persons for access in the switchgears.
- c) The Responsible Person (RP) shall ensure that:
 - The conditions of permits and cautionary notices are strictly adhered to.
 - The lockout procedures, mechanical as well as electrical, are strictly adhered to and any deviations shall be corrected immediately.
 - The safe work procedures as lay down by Kusile Power Station and as determined by the Risk Assessment shall be followed.
 - The workers register, and cautionary notices are discussed daily wit workers

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- d) At least one person in the Contractor's service shall be competent to inspect scaffolding in the case where scaffolding is needed by the Contractor himself. Certificates must be handed in at Contract Management after the contract has been awarded.

3.11 Equipment management requirement

- a) The Contractor shall ensure that there is a process in place to manage his equipment and tools. The statutory inspections and testing shall be done according to the requirements of the law.
- b) The equipment shall be inspected as per the requirements by the law. The small equipment and tools that are used daily by the cleaners shall be marked with unique codes and signed in and out by the employee using them.
- c) This is to ensure that no tool is left on the plant and that every tool that is lost can be accounted for.
- d) All tools and equipment shall be on the Contractor's asset register. Asset register shall be submitted to the Contract Manager on request.

3.12 Road rules requirements

Kusile Power station roads are maintained in a fair condition and all construction traffic is limited to using these roads. Kusile traffic regulations are always adhered to. The speed limit is 40 km/h and other area is 20 km/h.

3.13 Security and access requirements

- a) The Contractor is informed of the access procedures through Kusile Procedure. "Access Control and Protection of Eskom Assets" and should expect that such procedures may change depending on the prevailing security situation.
- b) Temporary entrance permits are issued to contractors who are on site for less than 3 months. Names and Identity Numbers are required before the contract starts. Photocopies of Identity documents are also required.
- c) This must be arranged with the Contract Manager. Lost permits will be paid for by the Contractor to Protective Services at a cost. All permits need to be returned to Security or the Contract Manager upon completion of the contract. A list of tools is submitted which is verified by security staff prior to tools entering the security area.
- d) Should any Contractor staff be transferred from Kusile or leave site, the Contractor ensures that personnel leaving site are transported out of the security area and that the permit is returned.
- e) Only work vehicles with an approved permit will be allowed on site. These vehicles are to be in a serviceable condition and road worthy. Temporary vehicle permits are issued to contractors who are on site for less than 3 months. This must be arranged with the Contract Manager.
- f) No private vehicles will be allowed on site without a temporary permit.
- g) Arrangements must be made with the Contract Manager well in advance to allow sub- contractors and visitors onto site.

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- h) No "Private Work" is carried out for or on behalf of any Employer Employee. Any person suspected of being under the influence of alcohol is tested and if proved positive, is refused entry to the security area. Only authorised persons are permitted to enter Red Zone areas.
- i) The transport of any equipment onto the site must be declared and documented at Protective Services in order to facilitate the future removal thereof. Pro-active comprehensive listing of all tools and equipment brought to Kusile will considerably speed up entrance to the power station.
- j) The Contractor and/or Supplier must notify the Contract Manager immediately of any employees no longer in his/her service.

3.14 Supply of electricity requirement

- a) Electric power for construction, both 220V AC and 400V 3-phase supply, is supplied at Site free of charge, but connection fees are for the Contractor's account.
- b) All installations comply with the details set out in Kusile Maintenance Procedure - Contractor's Temporary Electrical Equipment Supply, and Construction Power Supplies (Occupational Health and Safety Act - Act 85 of 1993) and the Kusile Safety, Health and Environmental Specification for Contractors.
- c) The Employer does not guarantee continuity of supply and no claims for standing time because of power failures will be considered. A written request, indicating the Contractor's requirements is submitted to the Contract Manager as soon as possible after the Contract Date.

3.15 Water management requirement

Potable and raw water for construction purposes is also available free of charge. A written request, indicating the Contractor's requirements is submitted to the Contract Manager as soon as possible after the Contract Date. Exception is at the recovery dams, coal stockyard settling tanks, where contractor must supply drinking water and ablution facilities to his employees.

3.16 Sanitary facilities

Permanent toilets to serve the Power Station and urinals at the boundary area have been constructed by the Employer and all the Contractor's personnel may make use of these facilities. Where such facility is not available the contractor must supply for his employees.

3.17 Plant area and services scope of work

The service required to clean Kusile Power Station cable tunnels will include HP cleaning, vacuuming, etc. as specified in the scope of work. The scope includes attendance to emergencies

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4. Acceptance

This document has been seen and accepted by:

5. Revisions

Note: Start with the latest Revision History in the first row and go backwards.

6. Development Team

7. Acknowledgements

Not applicable.

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Appendix A – Eskom Document Hierarchy

A.1 Document Hierarchy

	Length (m)	Width (m)
Aux Bay	112	12
Aux Bay Unit 6 to Substation East	92	12
Aux Bay Unit 1 to West Wall	92	12
Aux Bay to ACC (Unit 1 - 6)	170	3
	40	2
Aux Bay to Substation FGD (Unit 1 - 6)	295	3
	14	2,5
Tunnels between FGD Unit 1 and FGD 2	105	3
Tunnels between FGD Unit 2n& 3 and FGD 4	280	2,5
Tunnels between FGD Unit 4 and FGD 5 & 6	200	2,5
Tunnels between Unit 5 tunnel and Unit 6 tunnel	205	2,5

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A.2 Basement

	Description of Substations:	Area (m²)	Item:
1	ACC Electrical Substation (Unit 1 - 6)	895	* 0 UBR10
2	CPP Electrical Substation (Unit 1 to 6) Ground floor	841	* 0 ULD18
3	Auxiliary Bay 9 m Level LV Switchgear Room Substation (Unit	411	*0 UBX
4	SDD C& I equipment		
5	Auxiliary Bay 0m Level LV Board Room (Unit 1 to 6)	532	* 0 BFT 30
6	Auxiliary Bay 0m Level MV Board Room Substation (Unit 1 to	514	*0 UBX10
7	FFP Electrical Substation (Unit 1 to 6)	331 (entire building)	* 0 UBS13
8	FGD Electrical Substation (Unit 1 to 6)	886	* 0UBT
9	Compressor House East Electrical Substation	1737 (entire building)	*0 UTF15
10	Compressor House West Electrical Substation	1737 (entire building)	*0 UTF15
11	Substation South Switchgear Room	1960 (entire basement)	*00UBS10
14	Hydrogen Electrical Substation	328	*07UBU10
15	Wastewater Electrical Substation	384	*00UGU10
16	Water Treatment plant Electrical Substation	834	*00UGD10
17	Fire Water Electrical Substation Fire Water Pump Building	955	*00USG10

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	Description of Substations:	Area (m²)	Item:
18	Substation East Switchgear Room	1201 (entire basement)	*00UBU1
19	Auxiliary Substation A Switchgear Room	1097	*01UBU1
20	Auxiliary Substation B Switchgear Room	869	*01UBS1
21	Limestone and Emergency Ash handling Electrical Substation	869	*00UBT1
22	10 Year Ash Electrical Substation	743	*05UBS1
23	North Coal Stock Yard Electrical Substation	855	*02UBS1
24	South Coal Stock Yard Electrical Substation	869	*04UBS1
25	Turbine (-5 m level) Unit 1- 5		
26	Dirty Dam Electrical Substation	974 (entire building)	*00UGM1

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