

	Specification	Kusile Power Station
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1. Introduction

Kusile Power Station Management has taken a decision to outsource resources to improve outage planning and performance in the following aspects:

1. Quality Control System and Processes
2. Foreign Material Exclusion (FME)
3. Plant decommissioning and recommissioning
4. Service and Spares contracting (advisory role)

as and when required to a suitably qualified, experienced and well-established Contractor.

This document describes the detail of the applicable plant areas, scope of work, standards, quality requirements, specifications, terms & conditions as well as the criteria to qualify for the tender.

2. Supporting Clauses

2.1 Scope

This document gives a detailed scope of work for Outage performance improvement at Kusile Power Station. The scope of work is to enable the Contractor to compile and submit a quotation of required services. The scope will be on an as and when required basis on a short term basis (6 -12 months)

2.1.1 Purpose

The purpose of this document is to define the specified Outage performance improvement at Kusile Power Station.

The station is expected to perform at 92% UCF, 6% PCLF, 2% UCLF, and the specified outage performance improvement resources and management strategy efforts must support this requirement.

It is therefore imperative that the successful and suitably qualified Contractor aligns his/her organisation fully to these specified scope activities and processes laid down in this document.

2.1.2 Applicability

This document is applicable to Kusile Power Station Generation Division.

2.1.3 Effective date

This document will be effective from the date of authorisation.

2.2 Normative/Informative References

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

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2.2.1 Normative

- [1] ISO 9001 Quality Management Systems
- [2] 240-106963417 Kusile Environmental Management requirements for Contract and Supplier.
- [3] 240-105776552 Kusile Power Station Waste Management

2.2.2 Informative

- [4] ISO 14001: 2004 Environmental Management System.

2.3 Definitions

Definition	Explanation
Contractor	Service provider contracted to provide a specific service to Eskom, Kusile Power Station.
Employee	Person employed by Eskom, Kusile Power Station or the Contractor
Employer	Eskom, or Eskom Kusile Power Station or representative
Hygiene	Conditions or practices conducive to maintaining health and preventing disease, especially through cleanliness
Site	All plant and equipment installed in the boundary fences of Kusile Power Station

2.4 Abbreviations

Abbreviation	Description
AC	Alternating Current
AP	Appointed Person
BBDV	Boiler Blow Down Vessel
BO	Black Owned
BOP	Balance Of Plant
BPLWD	Black People Living with Disabilities
BWO	Black Women Owned
BYO	Black Youth Owned
FME	Foreign Material Exclusion
kW	Kilo Watt
L	Litre
HV	High Voltage (> 1000V)
HP	High Pressure
QA	Quality assurance
QC	Quality Check

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2.5 Roles and Responsibilities

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

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

2.5.1 The Employer

- a) Inform the service provider if there is a need for Outage performance resources to be on site
- b) Issue a purchase order or task order before the contractor can resume with activities
- c) Ensure plant is safe for work to be carried out by the service provider
- d) Ensure a permit to work is in place before activities if required
- e) Make all necessary arrangements for the Outage performance resources SP to access site and perform the required work
- f) Arrange daily outage and progress meetings to be attended by the Service Provider
- g) Create policies and procedures for controlling foreign materials
- h) Provide appropriate containers, covers and signage for FME control and ensure availability of retrieval tools in case of foreign object loss
- f) Ensure that QC processes do not compromise worker or environmental safety

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- g) Clearly define roles and responsibilities within the quality team
- h) Maintain accurate and up to date QC records, logs and reports and support audit readiness through organized documentation systems
- i) Ensure plant is ready for decommissioning and recommissioning activities

2.5.2 The Service Provider

- a) Comply with the Employer's Environmental, Health and Safety standards, Policies and procedures
- b) Attend daily outage and progress meetings requested by Employer
- c) SP's vehicles to comply with Eskom' Vehicle Standards and Procedures
- d) SP will provide onsite representation on a 24 hour basis, seven days a week shift times 07:00 to 19:00, 19:00 to 07:00 or whichever times that will be agreed between two parties
- e) Follow all Eskom FME procedures, policies and work instructions
- f) Establishing and implementing QC processes
- g) Inspection and testing services at Eskom plant
- h) Non-conformance management
- i) Providing continuous improvement initiatives for Eskom plant
- j) Assist in performing advisory role in spares sourcing, expediting, contract placement and management of contracts
- k) Provide advisory role in plant decommissioning and recommissioning

2.6 Process for Monitoring

This process will be agreed by both parties as per purchase order.

2.7 Related/Supporting Documents

N/A

3. The provision of Outage performance improvement resources scope of work

3.1 Scope of Work Requirements

Turbine and Generator operational running hours principally drive the unit Outage philosophy. Provision of 1% normal Outage PCLF has been made to cater for opportunity outages in the Production plan.

The Outage philosophy is depicted as per the diagram below

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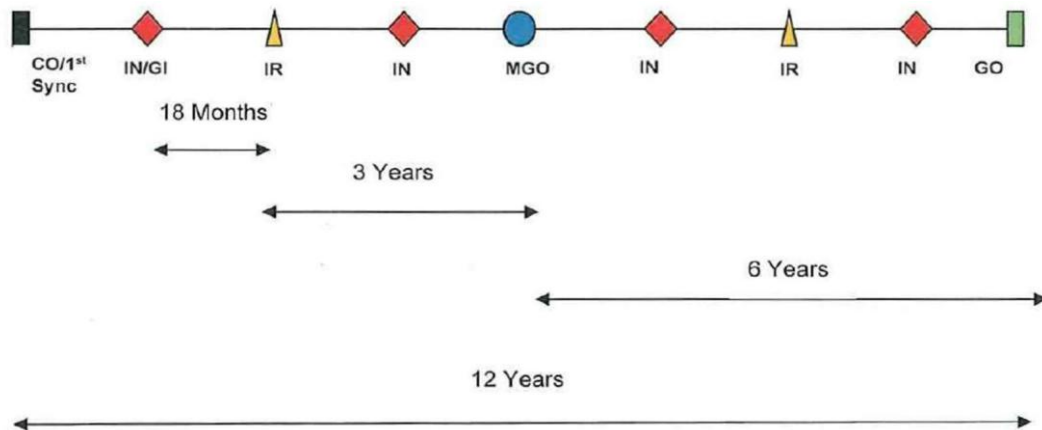


Figure 1: Outage Philosophy

Expected operating period between major overhaul of equipment is as reflected by the table below

Table 1: Outage Intervals

Symbol	Outage type	Interval Years	Interval Hours	Duration (days)	Main activities
	IN	1,5	12 500	14	Boiler and Draught Group inspection Mill bin inspection Absorber, Inlet & Outlet Duct, Emergency Quenching Nozzles, Mist Eliminators, Oxy-Blower and Reaction Tanks - Cleaning, Inspection and Refurbishment
	IR	3	25 000	35	Boiler and turbine auxiliaries inspection and repairs Absorber, Inlet & Outlet Duct, Emergency Quenching Nozzles, Mist Eliminators, Oxy-Blower and Reaction Tanks - Cleaning, Inspection and Refurbishment
	MGO	6	50 000	42	HP and IP turbine cylinders full refurbishment. LP cylinder and Valves overhaul Boiler statutory inspections Generator stator and rotor inspections Absorber, Inlet & Outlet Duct, Emergency Quenching Nozzles, Mist Eliminators, Oxy-Blower and Reaction Tanks - Cleaning, Inspection and Refurbishment
	GO	12	100 000	56	HP, IP, LP Turbine cylinders and Valves overhaul Absorber, Inlet & Outlet Duct, Emergency Quenching Nozzles, Mist Eliminators, Oxy-Blower and Reaction Tanks - Cleaning, Inspection and Refurbishment

3.2 Applicable Plant Area

Advisory services will be required on the below plants and any other plant as and when required by the Employer

- Boiler plant and auxiliaries
- Turbine plant and auxiliaries

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- iii. Flue Gas Desulphurisation
- iv. Pulsating Fabric Filter Plant
- v. Any other plant area at Kusile Power Station if required

3.2.1 Applicable SOW

The scope of work covered by this contract is for the provision of Outage Performance Improvement at Kusile Power for a period of 6 months

3.3 Management Meetings

- a) Site meetings & inspection meetings between Eskom & the Supplier shall be on as when the need arises.
- b) The person convening the meeting within five days of the meeting shall submit records of these meetings to the Service Manager.
- c) All meetings shall be recorded using minutes or a register prepared and circulated by the person who convened the meeting.
- d) 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.

3.4 Safety, Health, Environment and Quality Management

- a) The Supplier 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.
- b) 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
- c) The contractor and or supplier employees shall be inducted on the environmental requirements as per these documents.
- d) The contractor and/or supplier shall comply with all Eskom Kusile Power Station environmental requirements such as policies, standards and procedures
- e) The contractor shall appoint trained and competent personnel in writing, who will have the responsibilities of implementing all environmental requirements on a specific contract
- f) Method statements shall be submitted for approval by the Eskom Kusile Power Station Senior Environmental Advisor, prior to commencement of any 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:
 - The cause of the non-conformance/incident
 - The proposed actions to correct and prevent recurrence

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- g) Eskom Kusile Power Station shall issue non-conformances where there are deviations from Eskom Kusile Power Station Procedures and any other environmental requirements
- h) The contractor and or supplier shall allocate funds for the implementation of environmental requirements
- i) Contractor shall comply with environmental requirements as per 237-555-ENV-SP Kusile Environmental Management Requirements for contractors and Supplier Specification.

3.5 Manpower Requirements

3.5.1 The Supplier Operating Staff

The Contractor will employ sufficient staff to cater for the SOW. This should include the following skilled personnel as well:

- i. Site Manager
- ii. Supervisor
- iii. Planner
- iv. QC manager
- v. QC Inspector
- vi. FME Coordinator
- vii. FME Technicians
- viii. Safety Officer
- ix. Document controller
- x. Internal auditors
- xi. Trainers/quality coaches
- xii. Contracts managers
- xiii. Commissioning Engineers (Electrical, mechanical and Instrumentation)
- xiv. Commissioning manager/expert
- xv. Spares coordinator

The numbers stipulated above are just a guide; the contractor must supply sufficient number that will be able to cater for emergencies when they arise. The contractor should comply to hours of work as stipulated in the basic conditions of employment act.

- a) The required services will be done as and when required. In emergency situations the work will need to be done continuously 24/7 until the work is completed.
- b) The contractor must appoint skilled and competent people for the contract
- c) The Contractor staff will wear uniquely identified clothing at all times which will identify the Contractor.
- d) Under no circumstances will the Contractors staff wear the Employers overalls or hats.
- e) The Contractors shall ensure that the employees are always under constant supervision.

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- f) The Contractors shall be responsible for the provision of all temporary or expendable materials required allowing for storage of material.
- g) The Contractors will be available for emergencies where required to perform any activity.

3.6 Rules are as follows:

Ensure that your site does comply with the general good housekeeping practices. Redundant material will be removed to allocated sites. No scrap shall be stored in the Contractor's yard. Scrap is to be cleared from Site daily.

3.7 Eskom's Life Saving Rules of Safety:

- a) 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.
- b) 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.
- c) 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.
- d) 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.
- e) 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 6 identified Lifesaving rules, and they are as follows:

RULE	DESCRIPTION OF RULE
Rule 1	OPEN, ISOLATE, TEST, EARTH, BOND, AND/OR INSULATE 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.

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Rule 3	BUCKLE UP No person may drive any vehicle on Eskom business and/or on Eskom 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	SPOTTER/ FLAGMAN No Reversing Without a Spotter/ Flagman

3.8 Health and Safety Risk Management

3.8.1 After contract award:

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

- a) Proof of the contracting company's own Health and Safety Policy.
- b) Proof of appointments, assignments and designations as required in terms of the Occupational Health and Safety Act, No 85 of 1993.
- c) Proof of Risk Assessments regarding Hazards identified.
- d) Proof of Safe Work Procedures that derived out of the Risk Assessments.
- e) Proof of the contracting company's own Emergency Plan that will deal with their own emergencies on site.
- f) Proof of a Fall Protection Plan, if required to perform work at elevated levels developed by a competent person appointed by the contracting company.
- g) 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.
- h) 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.
- i) Proof of the contracting company's employees Medical Fitness Certificate. (Must still be valid for one year and may only have been issued by an occupational health practitioner).
- j) Proof of contractors weekly Health and Safety Rep Inspections regarding its own site and where detached work is performed.

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- k) Proof of Personal Protective Equipment (PPE) issued to contractor's employees.
- l) Proof of contracting company's Accident/Incident Reporting and Investigation System.
- m) 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.
- n) 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.
- o) 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.

3.9 Manpower Requirements

3.9.1 The Supplier Staff

The Supplier will employ sufficient staff to be able to execute the outage performance improvement resources at Kusile Power Station

3.10 Site Inspection Requirement

The Supplier acknowledges that he/she has satisfied himself, before submitting this 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 Outage performance improvement resources, 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.

3.11 Supervision Requirements

The Supplier 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 Supplier 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.

3.12 Equipment Management Requirement

- a) The Supplier shall ensure that there is a process in place to manage his equipment and tools.
- b) The statutory inspections and testing shall be done according to the requirements of the law.
- c) The equipment shall be inspected as per the requirements by the law. The small equipment and tools that are used daily by the employees shall be marked with unique codes and signed in and out by the employee using them.
- d) This is to ensure that no tool is left on the plant and that every tool that is lost can be accounted for.
- e) Every new tool bought shall be reported to the Contract Manager and every tool not returned by an employee after completion of the works shall be reported to the Contract Manager.

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- f) All tools and equipment shall be on the Contractor's asset register. Asset register shall be submitted to the Contract Manager on request

3.13 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 adhered to at all times. The speed limit is 40 km/h and other areas is 20 km/h.

3.14 Security and Access Requirements

- a) The Supplier 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.
- c) Names and Identity Numbers are required before the contract starts. Photo copies of Identity documents are also required.
- d) 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.
- e) 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.
- f) 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.

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.
- h) No "Private Work" is carried out for or on behalf of any Employer. 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

3.15 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.

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- 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 as a result 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.

3.16 Water Management Requirement

Portable 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, where contractor must supply drinking water to his employees.

3.17 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.

3.18 Plant Area and Services Scope of Work

The Plant area is limited to Kusile Power Station: The provision of outage performance improvement resources at Kusile Power Station to revive outage planning and execution in the following aspects:

1. Quality Control System and Processes
2. Foreign Material Exclusion (FME)
3. Plant decommissioning and recommissioning
4. Service and Spares contracting

4. Acceptance

This document has been seen and accepted by:

5. Revisions

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6. Development Team

7. Acknowledgements

N/A

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