Eskom	Scope of Work	Kriel Power Station

Title: **Removal of Clinkers inside the boiler and cleaning inaccessible areas using Rope Access on 'as and when required' basis at Kriel Power Station for a period of 5 (five) years.**

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1. Introduction

Kriel Power Station has experienced major leaks (PF and Ash) which accumulated over the past years in hard-to-reach areas, which made it difficult to clean those areas with normal cleaning. Hence the need for specialised cleaning has been identified to eliminate the risk of fires in the plant on turbine, boiler, outside plant. The station intends to enter a contract with a suitably qualified, experienced and established contractor with the capacity to execute the scope as listed below for a period of five years.

2. Supporting Clauses

N/A

2.1 Scope

The scope covers industrial station cleaning on the outside plant at Kriel Power station.

The purpose of the document is to provide detailed understanding of cleaning outside plant areas that's need to be cleaned.

This document is intended to be the input to the NEC Part 3: Scope of Work.

- **GENERAL DESCRIPTION**

Site establishment, planning, design, supervision, and execution of industrial cleaning of production plant at Kriel Power Station. Furnishing of all materials, equipment, tools, consumables, labour, chemicals, and each expense necessary for the execution of industrial cleaning

In general, the applied cleaning methods should utilize mechanised cleaning machinery or vacuum plant, or equipment. To minimise dust in the plant manual cleaning methods such as dusting should be minimised at all costs only in those areas where use of mechanised cleaning machinery or vacuum plant, or equipment is not viable, can manually cleaning methods or water wash be applied. Cleaning plant / equipment must be highly reliable, robust, self-sustaining, and not be dependent on prolonged recharging of its power sources.

NOTE: Eskom Kriel Power Station is a national key point, and all employees should pose a security clearance certificate. Eskom may at any time require recent security clearance certificate.

No piling is allowed.

NB. NO FIRE HYDRANT WATER TO BE USED FOR PLANT CLEANING.

2.2 Normative/ Informative References

- **Normative References**

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

[1] ISO 9001:2015 Quality Management Systems

[2] Occupational Health and Safety Act (Osh Act; Act 85 of 93)

- **Informative References**

N/A

2.3 Applicability

This document shall apply to Kriel Power Station, contractor, and Operating Support.

The scope will be executed on all Kriel Power Station Premises inside and outside of the Power Station.

2.4 Effective date

This document will be effective from November 2024.

2.5 Definitions

N/A

2.6 Abbreviations

ABBREVIATION	DESCRIPTION
SOW	Scope of Work
OSHACT	Occupational Safety Health Act
SHEQR	Safety, Health, Environmental, Quality and Risk
PPE	Personal Protective Equipment
PTW	Permit To Work
UIF	Unemployment Insurance Fund
COIDA	Compensation for Occupational Injuries and Diseases Act

2.7 Roles and Responsibilities

Contractor

- Contractor is responsible for executing the SOW as per task order.
- Ensure that all workers have appropriate P.P.E.
- Ensure all workers are familiar with the risk assessment, safety precautions and hazard.

Operating Support

- Operating Support is responsible for drafting and ensure execution as per SOW.

System Engineer

- As custodian of their system, they must ensure all actions required in terms of the reliability base and any other reliability matters are implemented on their systems.

2.8 Process for Monitoring

- Daily check sheet
- Pre-cleaning survey
- Post cleaning survey/assessments

2.9 Related/Supporting Documents

N/A

3. Description of services

3.1 GENERAL SCOPE OF WORK

DESCRIPTION OF THE *SERVICES (SCOPE OF WORK)*

THIS ENQUIRY IS FOR THE LASHING OF COAL STAITHES AND COAL BUNKERS, ROPE ACCESS CLEANING ON INACCESSIBLE AREAS VACUUMING, PLANNING, SITE ESTABLISHMENT, SUPERVISION AND PROVISION OF INDUSTRIAL CLEANING OF THE FOLLOWING AREAS:

SERVICE INFORMATION

- INTENSIVE ROPE ACCESS CLEANING AND VACUUMING OF COAL, ASH AND PF BUILD-UPS FROM UNIT 1-6 INACCESSIBLE AREAS INCLUDING OUTSIDE PLANT AND WATER TREATMENT PLANT AREAS WITHIN BOUNDARIES OF KRIEL POWER STATION.

DESCRIPTION OF THE SERVICES

Inaccessible rope Access Cleaning on UNIT 1-6 BOILER , TURBINE PLANT AND AUXILIARIES

- BOILER ROPE ACCESS CLEANING UNIT 1 – 6 FROM 72ML TO 8ML
- 67 M LEVEL BEAMS ABOVE THE BOILER ROOF
- 67 M LEVEL FD FANS INLET SCREENS
- ALL BOILER STRUCTURAL BEAMS FROM 72ML TO 8 M LEVEL
- 45 M LEVEL SECONDARY AIR DUCTING ROOF
- 31 M LEVEL DA ROOF AND ALL THE HP PIPEWORK
- 31-15 M LEVEL BURNER SECONDARY AIR DUCTING ROOF
- TURBINE PLANT, WATER TREATMENT PLANT, ASH PLANT (DRY DUST), ID & FD FANS, MILLING PLANT AND ANY OTHER PLANTS ELEVATED AREA INCLUDING BEAMS, PIPE WORK, VESSELS, MILLS DUCTS, CHUTES, GRATINGS, ROOFS ETC.

- ALL UNIT 1-6 TURBINE PLANT INACCESSIBLE AREAS
- HP, IP AND LP TURBINE (TOP) CASING INCLUDING GENERATOR CASING GENERATOR.
- FEED PUMPS MOTOR CASING TOP AND DUCTS.
- ALL TURBINE STRUCTURE, DUCTS OR INACCESSIBLE AREAS HIGHER THAN FLOOR SURFACE.
- UNIT 1-6 TURBINE PLANT INACCESSIBLE AREAS AND AUXILIARIES

OUTSIDE PLANT INCLUDING AUXILIARIES AND WATER TREATMENT PLANT INACCESSIBLE AREAS

- MILLING PLANT COMPONENTS HIGHER THAN FLOOR SURFACES INCLUDING MILLS TOP AND MILL MOTOR TOP.
- PA FAN DUCTS INCLUDING MOTOR CASINGS.
- FD FAN DUCTS INCLUDING MOTOR CASINGS
- ID FAN DUSTS INCLUDING MOTOR CASINGS.
- INCLINE CONVEYOR BELTS ROOF INCLUDING STRUCTURES.
- BOILER ASH HOPPER'S STRUCTURE AND BEAMS ABOVE 2M LEVEL.
- COAL BUNKERS AND COAL STAITHES INACCESSIBLE AREAS.
- MAIN SILO BEAMS AND STRUCTURES.
- MAIN STORES AND ALL STATION SINK/IBR ROOFS INCLUDING GUTTERS AND WINDOWS.
- A-G INCLINE CONVEYOR BELTS TRANSFER CHUTES ROOF.

Special Conditions

- DIRECT SUPERVISION REQUIRED

- WORKING AT HEIGHTS.
- WORK AREA TO BE BARRICADED.
- EMPLOYEES MUST BE FULLY TRAINED AND COMPETENT FOR WORKING AT HEIGHTS.
- BOILER IS ON LOAD, THEREFORE HOT SURFACES.
- THERE IS HIGH DUST AND PF LEVELS ON THE PLANT.
- OTHER CONTRACTORS AND ESKOM EMPLOYEES NEEDS ACCESS TO THE BOILER.
- CLEANING IS FROM 72 METER LEVEL TO 8 METER LEVEL ON BOILER PLANT, TURBINE PLANT, WATER TREATMENT PLANT AND OUTSIDE PLANT AREAS.

3.1.2 Pricing for scope of work including "As and when required".

NB: The pricing should make provision or also cater for the following additional payments by the contractor to all their employees, or machinery. NO additional payments will be claimed from Eskom:

-National Contract Cleaners Association and department labour minimum wage/hourly rate or above for the contract duration.

-Once-off annual bonuses (13th Cheque) for all employees for the contract duration.

-Overtime or additional payments for supervisors on cover cycle or any employee any on leave, maternity, etc. (Shift supervisor should work on cover if one is not available.)

- At least a minimum shift allowance or above minimum as pre-scribed by department of labour for shift workers and any other legal benefits e.g UIF, COIDA, Provident Fund etc.

- Any contractors annual functions or year-end function if need be (Contractor's discretion).

-Weekend, Sundays & holidays pay rate for shift workers, or any employee were applicable.

3.2 ADDITIONAL REQUIREMENTS

The supplier must meet the following additional requirements:

The supplier must own the plant / equipment required for the execution of this scope and/or must have a valid lease agreement from the leaser for the duration of the contract.

NB. The Services Manager may request additional work force depending on the need. Number of Supervisor's on site will be determined by the number of people on site as per safety requirements.

- Mobile heavy duty vacuum plant for vacuum cleaning of PF, clearing of coal and ash spillage, emergency removal of fly ash from fabric filter plant emptying of sumps/drains, cleaning of pipe trenches, draining water where needed, etc.
- The contractor must have formal appointments as per SHEQ profile including a Quality Controller (QC).
- Contractor must comply with all Regulations applicable to Eskom i.e Fossil Fuel Firing (FFFR), High Voltage (HV) and Plant Safety Regulations (PSR), to supervise work and for access into all restricted areas contractor must have an authorised Responsible Person (RP) and Authorised Supervisor.
- Contractor must supply material for cleaning including solvent, detergents and degreasers (Suitable for normal and Fuel Oil).
- Contractor to supply lights and additional tools to carry out tasks e.g torches, DC lights, extensions, slings, harnesses etc ..
- Contractor to ensure that all cleaning tools are maintained in good in working condition at all times e.g PPE, shovels, brooms, feather dusters, Bins, Wheelbarrows, etc... and register of issuing & return must be updated at all times, good housekeeping in the storage area where all tools are kept must be maintained.
- Contractor's overalls must be branded, be of different colour from Eskom and other contractor's where possible for easy identification.
- Contractor must provide proper PPE for work done on more dusty areas (Respirators & disposable overalls), wet areas (rain suites and gumboots) and hot areas (TST heat resistance suites and boots)
- A fee determined by Finance Department will be charged on the contractor for every contractor's employee lost gate pass permit.
- All equipment's, machinery and tools required carry out all the duties stipulated in the works information must always be available and be kept on site for easy access when needed.
- All equipment brought to site must be registered with Security and nobody is authorised to issue a removal permit for any equipment that has to leave site only the Services Manager or a person delegated by the Services Manager in his/her absence can issue such permit.

- The cleaning contractor must take note that Kriel Power Station has a duty to achieve or sustain a 5-Star NOSA rating of which housekeeping plays a major role, thus the reliance will be on the contractor for Kriel Power Station to achieve this.
- The cleaning staff shall at all times be presentable and conduct themselves in accordance with Kriel Power Station accepted practices and comply with all Eskom's Life Saving Rules.
- The contractor must be able to handle and specialise in cleaning oil, ash and coal spillages and they must be registered to transport waste material.

3.3 Cleanliness

The objective of the industrial cleaning contract is to achieve and maintain clean and safe plant. The activities indicated in the outside plant cleaning scope are an employer's estimate of activities and time intervals needed to achieve clean plant. It remains the responsibility of the contractor to ensure that these estimates are sufficient and to adjust these estimates whenever necessary and ensure clean plant.

3.4 Amendment of scope of work or schedule

3.3.1 Eskom may at any time amend, alter the scope or extend the service and the contractor shall be obliged to execute such amendments.

3.3.2 Should such variation or amendment result in the contractor incurring additional cost, Eskom shall be obliged to compensate the contractor for the reasonable cost thereof. Should such a variation or amendment have the effect of a cost saving to the contractor. Then the contractor shall be obliged to pass a reasonable part of these costs on to Eskom.

3.3.3 Should such modification or variation occur, then the modification must be confirmed in writing by Eskom, and the proposed contract be amended accordingly before payment will be effected.

3.5 Industrial cleaning philosophy

3.5.1 Industrial cleaning contractor should utilise mechanical cleaning methods only.

In those areas where mechanized cleaning is not possible or the installed plant and machinery does not allow for these, manual cleaning methods are to be applied. There is a station drive to reduce the consumption of water. In a case when the equipment of the supplier is defective or out of service for whatever reasons, the supplier will be expected to fix the equipment if possible or alternatively provide another one without affecting Eskom daily production.

3.5.2 The contractor should be able to submit a clear cleaning method statement.

The method statement should also include the following in detail:

- The number of the people allocated to various plants

- Frequency of cleaning for each area of the plant.
- Industrial cleaning equipment that will be utilised for the areas including portable industrial vacuum plant.
- Quality control plan and environmental compliance.
- Strategy for the cleaning of recurring water, dust, coal, ash and PF leaks.

Restricted areas, because of the dangers associated and regulatory requirements, will be cleaned under supervision of authorised persons only.

3.5.3 Due to the following challenges, excessive PF leaks; dry dust leaks; water leaks; oil leaks; ash and coal spillages, the contractor should ensure that such areas are cleaned twice per shift .

3.6.2 Consumables

N:B The *contractor* must supply all cleaning equipment, chemicals and consumables, which must be listed. Except as otherwise expressly provided herein, the ***contractor*** shall supply all labour, supervision, tools, equipment and consumable materials, and each and every item of expense necessary for the
Performance of the work, which shall include but not limited to the scope defined in the specification of scope.

3.6.3 Resource requirements

The resources shall be controlled by Eskom operating support managers and operating support technicians or station cleaning supervisors.

NOTE: Electric Motors to be covered to prevent water ingress into terminal boxes avoid damage to electric motors on areas where water is used for cleaning.

3.8 STANDARD SHEQ REQUIREMENTS TO ALL ENTERING AND PERFORMING WORK ON ESKOM HOLDINGS SOC (PTY) LTD PREMISES

SAFETY

- The contractor shall conduct a safety inspection; toolbox talk and task-based risk assessment meeting with all employees per shift prior to commencement of the task.
- The minutes of the meeting must be handed in to Eskom not later than the 4th last working day of the current month.
- The contractor is responsible to ensure the safety of all employees as far as practicable without risk to their health.
- The contractor must provide Eskom with a report of each employee's yearly medical screening not later than end February of every year.

- The contractor is responsible to report all safety deficiencies to Eskom immediately for action. The contractor must provide the following personnel or skill within their team: SHE Representative, first aider, Quality Rep, Environmental Rep, HCS Controller and Incident investigator.
- The site supervisor or safety officer must keep the companies Contractors Safety File updated and hand it in for auditing purposes on a quarterly basis.

Safety Equipment

Appropriate safety equipment such as a self-contained breathing apparatus, life buoys and lifelines shall be worn were necessary as determined by the task risk assessment. The Contractor will be responsible for maintenance of this safety equipment. The Employer shall initially provide all exposed moving parts of the plant with safety guards. These guards shall be maintained and repaired by the employer. The Contractor shall train his employees at the plants in the use of safety equipment. No employee shall be allowed to work unaccompanied at and/or on potentially dangerous equipment and areas.

The contractor shall hold at least once a month a safety meeting and keep records thereof for perusal by the asset owner as and when required. The meeting will also include a work team discussion and a discussion regarding IBI. The employer will attend the meeting as and when required to ensure effective implementation of the program. Date list to be provided to the employer by the contractor.

- The contractor is required to attend compulsory station's contractors main SHEQ main meeting and Operating Support Departmental SHEQ meetings which are held once a month each and give feedback or presentation as required.
- The minutes of the Safety and work team session meetings must be handed in to Eskom not later than the 1st working day of the next month.

Safety Officer

Develop and Maintain a Safety Risk Programme

Administer the safety incident reporting systems and check that the reporting, recording and investigation systems are in compliance with statutory and all Generation mandatory requirements. Coordinate Safety Training Programme

Implement a marketing programme to create safety awareness amongst all employees.

Perform any other legitimate activity as required.

Provide and conduct inspection on Personal Protective Equipment (Overalls and Hard hats should display Company name as per ESKOM requirements).

Specialised Personal Protective Equipment (P.P.E) such as Safety Harnesses will be provided by the contractor, and the training required utilizing the equipment. Procedures for spillages will be provided before contract award. Personal Protective Equipment (P.P.E) to be provided to all Employees as and when required, damaged Personal Protective Equipment (P.P.E) must be replaced.

3.9 ENVIRONMENTAL MANAGEMENT SYSTEM

- All service providers appointed to render any services within Eskom Kriel Power Station are required to comply with the station's Environmental Management System requirements.

• NB: Before commencing with any work, the service providers are required to visit the station's environmental section for evaluation. The station's environmental practitioner will evaluate the services to be rendered by the service provider and therefore allocate relevant legal and other requirements documents which the contractor shall comply with during the works. The service provider together with Eskom's Environmental practitioner shall sign in the Environmental Agreement Register to indicate that the agreement is reached.

- The service provider shall then commence with the works but paying inordinate attention towards implementing the relevant legal and other requirements measures as agreed in the register. Failure to comply with this agreement may ultimately lead to the termination of this contract. This requirement shall also be clearly stipulated in the NEC contracts between Eskom Kriel Power Station and any service providers.

• It should always be noted that Kriel Power Station is ISO14001 certified and therefore promotes Integrated Environmental Management (IEM) philosophy which aims to achieve a desirable balance between conservation and development. All activities taking place within Kriel Power Station must consider section 28 of the National Environmental Management Act (107 of 1998) which makes provision for the duty of care approach. The contractor's team must commit to review and to continually improve environmental management, with the objective of improving overall environmental performance. The Contractor must consult with Kriel Environmental section on a regular basis for ongoing assistance and advices.

The'EMS shall clearly cover the following areas as per ISO 14001;

- Environmental policy
- Environmental legal and other requirements.
- Risk Assessments/Aspects & Impacts Register.
- Improved management of monitoring and measurement documentation (e.g. devices calibration certificates)

• Provision of necessary resources (e.g. computers, adequate human resource) and allocation of roles and responsibility (through clear appointments) to achieve effective implementation of the EMS.

• Continuous commitment towards complying with operational controls such as work

Instructions, operational procedures, etc. (either provided by the Contractor or by Eskom) as well as emergency preparedness and response procedures/plans.

The contractor shall continually evaluate the compliance to legal requirements (e.g. sewage treatment plant permits and other applicable legislation); this should also be documented within the monthly environmental site inspections reports.

• Kriel Power Station's procedure for non-conformity, corrective action and preventive actions shall be followed in case of the environmental incidents.

- Setting of KPI's and
- Contingency plans.

Environmental Management Programmes

Environmental Management Programmes shall be established and maintained to ensure that objectives and targets are achieved.

- **Audits**

Audits covering various Environmental aspects, Safety, Operational, IBI and Maintenance Management at the plant shall be carried out within an acceptable interval to ensure compliance with statutory requirements and Eskom's policies, Directives, procedures etc.

Handling of waste produced by the Contractor

All waste introduced or produced on the Employer's premises, by the contractor, for this contract, must be handled in accordance with the minimum requirements for the Handling and Disposal of Hazardous Waste in terms of Government Legislation as proclaimed by the Department of Water Affairs and Forestry Act 1994 Ref.:BN0621-162965.

The contractor is responsible to appoint-a waste coordinator to ensure that all waste produced is handled according to the applicable legislation.

The contractor is required to ensure that all goods, services or work supplied in terms of the contract conform to all applicable environmental legislation. Where work is done on the Employer's site, the goods, services or work supplied also conforms to the Employer's environmental specifications.

Waste from the cleaning and maintenance of equipment

The contractor is responsible to contain all waste due to cleaning and maintenance of equipment and disposes of as described below.

Stockpiling of waste

Waste is removed promptly to the designated deposit areas. No stockpiling is permitted.

Removal of Contractor Equipment from site.

• The Service manager needs to approve removal of contractors equipment or any material as per Eskom Kriel Power Station removal permit procedure.

Hazardous waste

Waste declared as hazardous substances in terms of the Hazardous Substances Act no 15 of 1973 is the responsibility of the Contractor to ensure safe removal from the property to a registered Class 1 site.

Use relevant skips for disposable of any waste:

- White (6m3 open skip) (Wheely bin) – General Compactable Waste (Domestic Waste)
- Blue (6m3 open skip) – Scrap Metal (Ferrous metals only).
- Brown (6m3 open skip) – Building Rubble (Bricks, Building gravel, Broken concrete, etc.)
- Red (6m3 closed skip with lid) – Hazardous Waste (Oily Rags, Empty paint tins, Empty spray cans etc.)
- Green (6m3 closed skip) – Waste paper only.
- Purple (6m3 closed skip)- Cables Only.
- Yellow (11m3 closed skip)-Asbestos Only.
- Black (6m3 open skip)-Production Waste e.g ash/Coal Waste only.

3.10 QUALITY MANAGEMENT

- **Quality management system**

The Contractor shall be required to demonstrate by means of a Contract Quality Plan (CQP) that this organisation is so structured that all the requirements of the specification will be properly monitored and controlled. The Contract Quality Plan (CQP), which must include the Quality Control Plan (QCP), is to be drafted in accordance with QM-58 and the Supplier Contract Quality Requirement Specification (QM58). The Quality documents are to be submitted for approval to the Project Manager were deemed necessary within thirty (30) days after a contract has been awarded to the Contractor.

Contract Quality Management Plan Requirement

The Contractor prepares a contract quality management plan that, where appropriate, indicates the following:

- Indicates the interface with the Contractors quality system and applicable documents such as procedures and work instructions
- Establishes communication channels between the Contractor and the Project Manager in respect of quality and the integration of such with the prescribed contract communication channels
- Indicates how specific subcontractors will be monitored
- Identifies items or activities for which quality control plans will be prepared
- Identifies the specifications, drawings and acceptance criteria for material for which quality control plans are not required
- Identifies the areas or processes requiring special controls
- Identifies the Contractor's Management Representative and personnel responsible for the control of quality activities and their relationship to the Contractor's management structure
- Identifies the documents which are to be submitted to the Project Manager
- Indicates the Contractor's quality monitoring programme.

The Contractor periodically updates the contract quality management plan to reflect changes in any of the above details. The frequency of such updates is determined by the Project Manager but will not be greater than one year.

4. Document Acceptance

This document has been seen and accepted by:

Name	Designation
J Leswiswi	Outage Execution Manager
T Sibanda	Outage Execution Manager

5. Revisions

Date	Rev.	Compiler	Remarks
May 2024	00	PN Aphane	New Contract
April 2024	01	PN Aphane	Draft New Contract
March 2025	02	L Njapha, A Aphane	New Draft

6. Development Team

The following people were involved in the development of this document:

- Cyprian Maseko
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7. Acknowledgements

- N/A