Eskom	Works Information	Group Capital

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Part 3: Scope of Work

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1. Introduction

Kusile Power Station Commissioning Department (Group Capital Division), herein referred to as “the project”, has decided to form a partnership with a competent contractor to perform all the repairs that will include, electrical, C&I and mechanical on the Balance of Plant (BOP) and Bulk Material Handling (BMH) plants before handover to Generation Division (Gx). This document describes the detail of the Scope of Work for specific areas of the power plant, standards, quality requirements, specifications and the terms and conditions.

2. Supporting Clauses

2.1 Scope

2.1.1 Purpose

The document defines the scope of work for the repairs of the BOP and BMH systems prior to hand over to Generation Division.

It is therefore imperative that the successful and suitably qualified Contractor aligns their 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 Project. This document shall be applicable to both the common plant for Balance of Plant (BOP) and Bulk Material Handling (BMH) systems and the unitised sections of the BOP and BMH plants during the commissioning phase until hand over to Gx.

2.1.3 Effective date

This document is effective from the date of authorisation until superseded by the latest revision or nullified by the employer.

2.2 Normative/Informative References

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

2.2.1 Normative

[1]	Act No. 73 of 1989:	Environment Conservation Act, 1989
[2]	Act No. 14 of 2009:	National Environmental Laws Amendment Act, 2009
[3]	Act No. 102 of 1980:	National Key Points Act, 1980
[4]	Act No. 36 of 1998:	National Water Act, 1998
[5]	Act No 85 of 1993:	Occupational Health and Safety Act & Regulations, 1993
[6]	BS 4504:	Circular flanges for pipes, valves and fittings
[7]	BS 5316: Part 1:	Acceptance tests for centrifugal, mixed flow and axial pumps
[8]	DIN EN ISO 5199:	Technical Specification for Centrifugal Pumps
[9]	DISSCAAH4:	Specification for Oil-immersed Power Transformers up to 500kVA
[10]	240-56227443:	Requirements for Control and Power Cables for Power Stations Standard
[11]	240-56356401:	Eskom Generator Protection Philosophy for Large Fossil Fuel Stations with Generator Circuit Breakers
[12]	240-56360387:	Storage of Power Station Electric Motors Standard
[13]	240-56361435:	Transport of Power Station Electric Motors Standard
[14]	240-56227516:	LV Switchgear and Control Gear Assemblies and Associated Equipment for Voltage up to and Including 1000V AC and 1500V Specification
[15]	240-56227520:	Large Power Generator Transformers in Power Stations Specification
[16]	240-56227573:	AC Metal Enclosed Switchgear and Control Gear for Voltages Above 1 kV Up to and Including 52 kV Specification
[17]	240-56357295:	High Current Phase Isolated Generator Bus bars at Thermal Power Generating Plant Specification
[18]	SANS 10108:	The Classification of Hazardous Locations and the Selection of Apparatus for Use in Such Locations
[19]	SANS 10114:	Interior lighting
[20]	SANS 10125:2009:	The installation of flexible membrane linings in earth embankment reservoirs
[21]	SANS 10292:	Earthing of low-voltage (LV) distribution systems
[22]	SANS 10313:	Protection of Structures against Lightning
[23]	SANS 10400:1990:	The application of the National Building Regulations (NRB) Installations (300/500V to 1900/3300V)
[24]	SANS 62305:	Protection against lightning

[25] GGSS 0423 Rev 3: Specification for Low Pressure Valves
[26] ISO 1125: Preparation of steel substrates before application of paints and related products and test methods for metallic blast-cleaning
[27] ISO 1144: Test method for the determination for linear density
[28] ISO 1217: Method for acceptance tests regarding volume rate of flow and power requirements of displacement compressors
[29] ISO 769: For determination of water absorption and of swelling in thickness after immersion in water
[30] ISO 8504: Abrasive blast-cleaning methods for the preparation of steel before coating with paint i.e., removes mill scale, rust etc.
[31] NWG 7007: Notes on Earthing and Lightning Protection of Equipment Moving on Rails (i.e., Coal Stackers/ Reclaimers and Ash Stackers)
[32] SANS 10142-1: The wiring of premises- Part 1: Low voltage installations
[33] SANS 10222: Electrical security installations
[34] SANS 10284:2006: Conveyor belts
[35] SANS 10287:2000: Automatic sprinkler installation for firefighting purposes
[36] SANS 1056-1: Ball valves Part 1: Fire safe valves
[37] SANS 1056-2: Ball valves Part 1: Heavy duty valves (not fire safe)
[38] SANS 1056-3: Ball valves Part 1: Light duty valves (not fire safe)
[39] SANS 1063: Earth rods and couplers
[40] SANS 1091: National Colour Standards for Paint
[41] SANS 1123:2007: Pipe Flanges
[42] SANS 1128-1:1977: Firefighting equipment Part 1: Components of underground and above ground hydrant systems
[43] SANS 1128-2:1977: Firefighting equipment Part 2: Hose couplings, connectors and branch pipe and nozzle connections
[44] SANS 1151:2005: Portable rechargeable fire extinguishers-Halogenated hydrocarbon type extinguishers
[45] SANS 121:2000: Hot dip galvanized coatings on fabricated iron and steel
[46] SANS 1253: Fire doors and fire shutters
[47] SANS 1313-1:2002: Conveyor belt idlers
[48] SANS 1322: Portable, non-refillable fire extinguishers (general purpose type)
[49] SANS 1366:2006: Steel cord reinforced conveyor belting
[50] SANS 1456-1: Collapsible delivery hose for firefighting purposes Part 1: General

Requirements and methods of test
[51] SANS 1456-2: Collapsible delivery hose for firefighting purposes Part 2: Percolating Fire hose
[52] SANS 1456-3: Collapsible delivery hose for firefighting purposes Part 3: Uncoated Non-percolating fire hose
[53] SANS 1456-4: Collapsible delivery hose for firefighting purposes Part 4: Coated non-Percolating fire hose
[54] SANS 1456-5: Collapsible delivery hose for firefighting purposes Part 5: Oil resistant and chemical resistant fire hose
[55] SANS 1669-1:2005: Pulley types, construction and dimensions
[56] SANS 1700: Fasteners
[57] SANS 1977:2006: Conveyor chains, attachments and sprockets
[58] SANS 306-4:2003: Fire extinguishing installations and equipment on premises Part 4: Specification for carbon dioxide systems
[59] SANS 331:2005: Fire extinguishing aerosol systems
[60] SANS 50054-1:1976: Components of automatic fire detection systems Part 1: Introduction
[61] SANS 543:2004: Fire hose reels (with semi-rigid hose)
[62] SANS 6077:1984: Fire test for valves and other assemblies used in fire hazardous situations
[63] SANS 6172:2003: Fire Extinguishers-Assessment of fire rating
[64] SANS 657-3:2005: Steel tubes for rolls for conveyor belt idlers
[65] SANS 1200LD: Standardized specification for civil engineering construction – Sewers
[66] SANS1 200M:1996: Standardized specifications for civil engineering construction - Roads
[67] 240-81951984: Kusile Outage Philosophy
[68] 240-83839084: Firefighting and Floor Washing Water Supply
[69] 240-83841904: Potable Water Production Maintenance Strategy
[70] 240-87099580: Hydrogen Supply System Maintenance Strategy
[71] 240-86095979: Auxiliary Cooling Maintenance Strategy
[72] 240-85864602: Boiler Bottom Ash Plant Maintenance Strategy
[73] 240-92774059: Emergency Diesel Generator Maintenance Strategy
[74] 240-92061150: Main Condensate and Low-Pressure Heating Maintenance Strategy
[75] 240-89346203: Compressed Air System Maintenance Strategy
[76] 240-87810958: MV Switchgear Maintenance Strategy
[77] 240-87435066: Power Transformers Maintenance Strategy

[78] 240-87435024: Essential Systems Maintenance Strategy

[79] 240-87384533: MV Motor strategy Maintenance Strategy

[80] 240-95644694: Water Treatment Plant Maintenance Strategy

[81] 240-90050117: Earthing and Lightning Protection Maintenance Strategy

[82] 240-90049673: LV Switchgear Maintenance Strategy

[83] 240-92061150: Condensate LP Heating Maintenance Strategy

[84] 240-98577561: Lighting & Small Power DB Maintenance Strategy

[85] 240-100549784: Dirty Oil Collection and Storage Maintenance Strategy

[86] 240-103073135: Plant Drains Recovery System Maintenance Strategy

[87] 240-10376640: Cranes and Hoists Maintenance Strategy

[88] 240-105658000 “Supplier Quality Management: Specification” (QM 58)

[89] ISO9001:2015 “Quality Management Systems – Requirements” (Take note that the level of compliance to this standard are determined by [1] above and section 1.3 below)

[90] ISO10006:2003 “Quality Management Systems – Guidelines for Quality Management in Projects”

[91] 240-132155951 “Kusile Project RFI/PA001 Process”

[92] 240-150475305 “Kusile Defects Management Process Work Instruction”

[93] 240-132156363 “Kusile NC Process”

[94] 240-43921898 “Kusile Project Audit Process Flow”

[95] 240-134232676 “Data book Review and Final Submission Process”

[96] ISO 10005 – Quality Management – Guidelines for Quality Plan

2.2.2 Informative

[97] 414 - 32 Rev 0: Kusile Maintenance User Requirement Specification

[98] 32 - 726 Rev 0: Mandatory SHE. Requirements for the Eskom Procurement and Supply Chain Management Process

[99] 237 - 0016 Rev 0: Integrated Business Improvement – prevention and improvement Standard

[100] GGR 0992: Plant Safety Regulations

[101] 32-846 Rev 0: Operating Regulations for High Voltage Systems

[102] NMP47-7 Rev 0: Application of KKS Plant Coding

[103] 36 -702 Rev 1: Remnant Life Monitoring

[104] GGSS 1181: Specification for chemical product and material used in a power plant

[105] GVLIR 0007: Safety, Health and Environment Specifications for Contractors

[106] 32-726 Annexure C: SHE. Requirements for Tender Enquiries
[107] 32-726 Annexure D: SHE. Tender Evaluation and Scoring Card
[108] 32-726 Annexure E: Supplier Suspension
[109] 36 – 942: Arc Flash Protection Specification
[110] ESKASAAA3: Eskom approval of personnel performing quality related special processes on all Eskom Plant.
[111] ESKOM OPS 2365: Specification for corrosion protection of electric equipment
[112] ESKPVAEY6: Eskom Operating Regulations for High Voltage Systems
[113] ESKSCAAR9: Specification for New Transformer Oil

2.3 Definitions

Definition	Explanation
Availability:	Period when a system is operating satisfactory when used under specified conditions
Contractor:	Contractor contracted to provide a specific service to Eskom, Kusile Power Station. Also referred to herein as 'Contractor'
Employer:	Eskom, or Eskom Kusile Power Station or its representative
Design Baseline	The state of plant configuration which depicts the plant requirements and design at a specified point in time and is defined in the approved product configuration information**.**
First line maintenance	This is maintenance activities carried out by a resident maintainer through preventative maintenance, basic corrective maintenance that is practically feasible to execute onsite, and planned or routine maintenance. It also includes maintenance done by a person who is not the OEM of the equipment but with technical expertise to repair the damaged item without sending it to the OEM.
Repair	Responding to the breakdown of the equipment and undertaking work to correct the problem to return the equipment to a working condition

2.4 Abbreviations

Abbreviation	Explanation
BOM	Bill of Material
CPP	Condensate Polishing Plant
DSTI	Daily Safety Task Instruction
HV:	High Voltage (>33000V) [Note: For PSR and ORHVS, HV refers to anything >1000V]
LV:	Low Voltage (< 1000V)
MV	Medium Voltage (1000V<MV<33000V)
NEC:	New Engineering Contract
OEM:	Original Equipment Manufacturer
OHSA	Occupational Health and Safety Act
ORHVS:	Operating Regulations for High Voltage Systems
PPE:	Personal Protective Equipment
PSR:	Plant Safety Regulations
PTM	Protection Testing and Metering (Eskom department)
PTW:	Permit to Work
QA:	Quality Assurance
QC:	Quality Control
QCP:	Quality Control Plan
SHE:	Safety, Health, Environment
SOW:	Scope of Work
URS:	User Requirement Specification
VSD:	Variable Speed Drive

2.5 Roles and Responsibilities

2.5.1 Contractor

a) All contractor employees shall comply with Eskom's policies and site regulations, adherence to Eskom's Life Saving Rules, adherence to Eskom Incident Investigation and/or Occurrence Management Procedure, Smoking Policy, zero tolerance on alcohol usage, etc. These requirements will be detailed during the induction training process.

b) The Contractor shall utilise trained and competent resources for the execution of the works

i. Plant optimisation and commissioning

ii. BOM compilation

c) The Critical Staff as identified must meet minimum requirements of Eskom job descriptions, with additional requirements specified.

d) All staff brought onto site in connection with this SOW should be able to fluently speak, understand and write in English.

e) Proof of qualification is to be supplied on request by the Employer for the Critical Staff identified.

f) The Contractor ensures that all staff being brought to Kusile PS site has a valid fitness certificate based on the specified plant person-job specification.

g) The contractor shall employ in and about the execution of the works only such persons that are careful, competent and efficient in their several trades and callings and the Employer shall be at liberty to object to and require the contractor to remove from the works forthwith any person employed by the contractor in or about the execution of the works who, in the opinion of the Employer, misconduct's himself/herself or is incompetent or negligent in the proper performance of his/her duties and such person shall not be again employed for the works without the written permission of the Employer.

h) Provide daily supervision of all related plant through trained and competent personnel to ensure that inspections & work activities are conducted daily.

i) Ensures proper behaviour of personnel under his/her supervision as per the Kusile culture.

j) Ensures training of all personnel under his/her supervision. The training required will include but not limited to Eskom safety training requirements, related plant training and Kusile culture.

k) Ensures high morale of staff and competency.

l) Ensures that throughout the duration of the contract, they conform and adhere to the safety, health and environment regulations.

m) A comprehensive risk assessment/DSTI shall be done prior to any work being carried out.

n) If a Permit to Work is required for working on plant and/or equipment, on completion of the work the relevant piece of plant/equipment shall be properly re-commissioned prior to the clearance of the Permit to Work.

o) The contractor shall be responsible or held liable for any defects arising from operational faults within twenty-four hours (24 hrs.) after an intervention, provided that the equipment has been placed into service.

p) The contractor shall be held responsible or held liable for any defects arising from poor workmanship performed by their staff or use of inferior spare parts. The guarantee periods shall be:

i. Poor workmanship within 48 hours period from time that the equipment is put into operation.

ii. Defective spares within a period of 6 months from time the equipment is put in service.

2.6 Process for Monitoring

This specification will be reviewed when necessary.

2.7 Related/Supporting Documents

[1] 414-43-EM-SP: Kusile Power Station Units & Auxiliary Maintenance Scope of Work Revision 1.

3. Works information

The contractor shall perform the repair on the auxiliary plant BOP and the BMH systems during commissioning as per the SOW. The scope will include the provision of spares.

3.1 Applicable Plant Areas

SYSTEM	**Inline equipment**
Mill Reject & SSC Makeup Water	valves, actuators, pumps, motors, control valves, strainers, expansion joints, air vents, flowmeter, NRV
Ash Dump Dam Makeup	valves, actuators, air vents, NRV, flowmeter
Ash Dump Dust Suppression	valves, actuators, pumps, motors, control valves, strainers, expansion joints, air vents, VSD, sprinklers, PRV, flowmeter
Coarse Ash Conveyor Belt Washing	valves, actuators, pumps, motors, control valves, strainers, expansion joints, air vents, flowmeter

Fly Ash Conditioning	valves, actuators, pumps, motors, control valves, strainers, expansion joints, air vents, flowmeter
Dust Handling Plant	valves, actuators, pumps, motors, control valves, strainers, expansion joints, air vents, flowmeter,
Raw Water Supply	Back flow re-enter, valves, actuators, flowmeter, surge tanks, Diesel pumps, strainers, expansion joints, air vents, pressure relief valves, Control panels
Demineralised Water Supply	valves, actuators, pumps, motors, control valves, strainers, expansion joints, air vents, flowmeter, PRV
Potable Water	valves, actuators, pumps, motors, control valves, strainers, expansion joints, air vents, safety showers, flowmeter, PRV
Dirty Drain Recovery	valves, actuators, pumps, motors, control valves, strainers, expansion joints, air vents, flowmeter,
De-Gritting Sump Pump	valves, actuators, pumps, nozzles, control panels, cranes
FGD Water Supply	valves, actuators, pumps, motors, control valves, strainers, expansion joints, air vents, back flow preventers
Turbine Lube Oil Storage & Generation	valves, actuators, centrifuge, strainers, flowmeter, desiccant vents, relief valves, monorail, tanks
Hydrogen Supply	valves, actuators, tanks,
Auxiliary Cooling Water - Open Cycle	valves, actuators, pumps, motors, control valves, strainers, expansion joints, air vents, flowmeter, Heat exchangers, VSD, Fans, gearboxes, monorail
Auxiliary Cooling Water - Closed Cycle	valves, actuators, pumps, motors, control valves, strainers, expansion joints, air vents, flowmeter, Heat exchangers, tanks, monorails
Process/Service Air	valves, actuators, compressors, dryers, receivers, filters, desiccant

Control Air	valves, actuators, compressors, dryers, receivers, filters, desiccant
Nitrogen Supply and Storage	valves, actuators, tanks, pump, motors, trolley, strainers
Oxygen Supply and Storage	valves, actuators, tanks, pump, motors, trolley, strainers
Dirty Oil Collection and Storage	valves, actuators, tanks, pump, motors, trolley, strainers
Fire Fighting and Floor Washing	valves, actuators, pumps, motors, control valves, strainers, expansion joints, air vents, flowmeter, diesel engine, control panels, deluge valves, check valves, sensing lines, tank
Electrical plants	All associated electrical plants
Coarse Ash Conveyors	Motor, Gearbox, couplings, Control and Instrumentation equipment, electrical components, chute, actuators, conveyor protections, VSD idlers, pulleys, moving head and take-up winch
Terrace coal plant	Motor, Gearbox, couplings, Control and Instrumentation equipment, electrical components, chute, actuators, conveyor protections, VSD, idlers, pulleys, moving head and take-up winch
Condensate Polishing Plant	Pumps, Valves, Vessels, Resin traps, Pre-polishing filters, C&I and electrical equipment
Unitized Sample conditioning and analysis system	Isokinetic Probes; Primary and secondary sampling panel; Sample coolers; Chiller Unit including chilled water tank; Pumps; Compressors; Valves; Online analyzers; Associated C&I and electrical components
Process Drain Recovery System	Completion of the outstanding works on the Process Drain Recovery System
Wastewater Treatment Plant	Pumps; Mixers; Blowers; Valves; Back-washable Strainers; Clarifier Drive, Lift and Impeller; Filter Presses; Tanks and Pressure Vessels; Centrifuges; Heat Exchangers; Thermo-compressors; Brine Concentrator; Hydro-cyclones; Crystallizer; Sodium Sulfate Feeder;

	Electrical Panels and Electrical equipment; C&I Instrumentation and equipment
Mobile Demineralised water	Pumps; Mixers; Blowers; Valves; Back-washable Strainers; Clarifier Drive, Lift and Impeller; Filter Presses; Tanks and Pressure Vessels; Centrifuges; Heat Exchangers; Thermo-compressors; Brine Concentrator; Hydro-cyclones; Crystallizer; Sodium Sulfate Feeder; Electrical Panels and Electrical equipment; C&I Instrumentation and equipment

3.2 Applicable SOW

3.2.1 Electrical Scope

3.2.1.1 Electrical repair of the following equipment: The repairs interventions to be performed during the period of the Contract include, but not limited to the following:

a) MV and LV Motors

b) MV Variable Speed Drives

c) Lighting and Small Power System

d) Auxiliary Electrical Equipment and Panels in Mechanical Plants

- Fault finding and repairs during equipment failure

3.2.2 Control & Instrumentation Scope (C&I)

3.2.2.1 C&I repair of the following equipment: The repairs interventions to be performed during the period of the Contract include, but not limited to the following

- Fault finding and repairs during equipment failure on all associated systems

3.2.3 Mechanical scope

3.2.3.1 Mechanical repair of the following equipment: The repairs interventions to be performed during the period of the Contract include, but not limited to the following

i. Pumps (including all related accessories, e.g. couplings, gearboxes and Seals)
ii. Valves (including all related Safety Valves / Pressure Relief Valves)

iii. Piping (including all fittings)
iv. Pneumatic systems
v. Electromechanical actuators
vi. Strainers
vii. Pressure vessels
viii. Filters
ix. Orifices
x. Plate Heat exchangers (including all related accessories ,e.g. fans)
xi. Blowers
xii. Diesel Engines
xiii. Cooling tower fans, basins and accessories
xiv. Gearbox
xv. Winch
xvi. Conveyors belts and related accessories
xvii. Compressors (All compressed air plants including Oxygen , Nitrogen and Hydrogen)
xviii. Submersible pumps
xix. Evaporators
xx. Lubricants
xxi. Welding
xxii. Mixers
xxiii. Gas transfer membrane
xxiv. Variable Speed drives

3.2.4 Detail Scope of Work

Deliverables against this Contract includes and is not limited to the following:

a. Unplanned repair of the plant as and when required.

b. Procurement of spares in accordance with the specifications. An up-to-date spares inventory list must be kept, and provided to the Employer upon request.

c. Perform repairs on faulty or defective areas of the plant and equipment.

d. Record keeping of all repairs work performed and submission of a copy of such records to the Employer.

e. Develop a schedule plan of activities for all repairs work to be performed as part of an outage during commissioning. The schedule must be submitted to the Employer for review and acceptance.

f. Ensure that during repairs, all the works performed comply with the Plant Safety Regulation and any other regulation relevant for the task.

g. Ensure that a quality control process is followed for all repair of the works.

h. Conduct Technical Risk Assessments of the plant.

i. Provide plant and equipment required to perform the specific task when conducting repairs on the plant.

3.1 Scope Conditions and Work Preparations

3.1.1 Scope conditions

a) The Contractor shall carry out the work in accordance with the Employer's instruction.

b) The Contractor shall submit all stand-alone reports on the work done to the Employer not later than 7 working days after completion of the work or after a period formally agreed on with written proof by both the Employer and the Contractor.

c) The Contractor shall be responsible for the management of refurbishable items and repairs for equipment that is associated with this scope or work.

d) The Contractor shall comply with the Employer's request to the Contractor for ensuring that an accurate description of spare parts is maintained in the Employer's stores and the Contractor shall inform the Employer of any changes.

e) The Contractor may be requested to support the Employer's personnel by providing cross sectional drawings and part numbers for stock identification and subject to the Employer's access control procedures, assists in checking the stock holding and the Contractor shall comply with the request.

f) The Contractor in conjunction with the OEM shall recommend to the Employer the optimal spares that should be kept at Kusile Power Station and that includes:

i. Spares required for repair of the plant

ii. Minimum number of spares to be kept for emergency

iii. Serviceability of spares in the stores

g) The Contractor shall ensure that he always maintains a 24-hour standby roster.

h) The Contractor's resources shall work on the plant during normal running conditions and when the plant is on any type of outage.

3.2 Continuous Improvement

a) The Contractor shall participate in improvement programs and root cause investigations/analysis as stipulated by the Employer.

b) The Contractor shall participate in improvement programs pertaining to plant equipment.

3.3 Quality and Documentation Control

a) The Contractor shall submit QCP's which will be reviewed and overseen by the Employer and will ensure that the relevant documentation is available on site to manage the scope and related programs.

b) The Contractor shall ensure that all measuring and test equipment is calibrated at all times & proof thereof must be readily available.

c) The Contractor shall adhere to all 'Quality References' and 'Standards' applicable to this SOW.

d) The contractor shall utilise the Employer's quality documentation management system and processes.

4. Constraints on how the Contractor provides the Services.

The *Contractor* will provide the services for repair of BOP and BMH systems during commissioning. The services duration will be for 12 months period (06 November 20203 until 30 November 2024). The detailed activities to be carried out and deliverables to be produced will be agreed between the *Employer* and *Contractor* during the course of the contract.

The *Contractor* shall at all times ensure that the service provided to undertake the *Services* have the necessary competence and availability to perform the roles and tasks to which they are assigned effectively and efficiently. Should at any time the *Employer* consider this not to be the case then the Employer may inform the *Contractor* and request the *Contractor* to take action to address the situation.

5. Management meetings

Meetings of a general nature may be convened and chaired by the *Employer's Agent.*

6. Records and forecasting of expenses

Records and forecasting of expenses will be required on monthly bases. Hourly claimed rate should be supported by timesheets and the invoices/receipts for all claimed expenses to be reimbursed at cost. In addition, the following must be adhered to:

- The timesheets must be signed by the relevant assigned manager in the relevant project.

7. Invoicing and payment

The *Contractor* shall address the tax invoice to:

Eskom Holdings SOC Limited
Kusile Power Station
Suite 46
Postnet
Highveld Mall
Emalahleni
1035
Attention: Khulekile Khoza
Tel: 017 612 6431

ONLY ORIGINAL INVOICES WILL BE ACCEPTED

Vat 4740101508

The following must be stated on the Tax Invoice:

- Name and address of the *Contractor* and the Employer*;*
- The contract number and title;
- *Contractor*'s VAT registration number;
- The *Employer*'s VAT registration number 4740101508;
- Description of service provided for each item invoiced based on the Price List;

Total amount invoiced excluding VAT, the VAT and the invoiced amount including VAT

8. Quality Requirements

8.1 Overview

1) The fundamental objective of the set of quality requirements stated within this contract is to ensure that the *Contractor* produces goods/products/services that the *Employer* are wholly satisfied with whilst ensuring that work is done right the first time. To achieve this, the *Contractor* shall ensure that three approaches are taken. These are as follows:
   a) Ensuring that the *Contractors* Quality Management System (QMS) is set up and maintained
   b) Quality Assurance
   c) Quality Control

   These are broad areas each with numerous requirements.

2) The *Contractor* shall comply with all requirements specified in the Eskom standard, 240-10565800 "Supplier Quality Management: Specification" [1]. It is of utmost importance that this standard be complied with.

8.2 Quality Management System Requirements

1) The supplier shall submit objective evidence of a developed QMS that complies with ISO 9001 (or the latest applicable revision). The Contractor shall comply with the requirements of 240-105658000 "Supplier Quality Management: Specification". Compliance to Category 3 requirements is mandatory. The following documents (approved/signed copies) shall be submitted:
   a) Quality management system manual or a document that defines and describes the QMS and its scope
   b) Quality Policy
   c) Quality Objectives
   d) Control of documented information
   e) Records required by ISO 9001 standard (List of Records)
   f) Internal audit procedure
   g) Control of nonconformity outputs
   h) Nonconformity and Corrective action procedure

i) Documented information for Control of Externally Provided Processes, Products and Services.
j) Information for roles, responsibilities and authorities

2) The Quality Management System shall drive the *Contractor's* business management processes to ensure that all of the *Employers* requirements are fully met on a consistent basis.
3) The *Contractor* shall comply with all requirements specified in section 3.1 of the Supplier Quality Management Specification.
4) The *Employer* has the right to conduct formal audits on any or all parts of the *Contractor's* Quality Management System as well as any documentation, materials, or equipment associated with the work, at any time and at any project work location.
5) The *Employer* also has the right to carry out assessments and audits on the *Contractor's* sub-contractors at planned intervals.
6) In the event that the *Employer* is dissatisfied with the *Contractor's* work for any reason, the *Employer* has the right to conduct additional audits of the *Contractor*.
7) The *Contractor* shall address all audit findings to the satisfaction of the *Employer* within a time frame acceptable to the *Employer*.

8.3 Quality Assurance Requirements

1) The *Contractor* shall ensure that Quality Assurance is performed at all levels and phases of work carried out for the *Employer*.
2) The *Contractor* shall use processes to ensure that quality is built into their products/services i.e., its business processes are organized such that quality is built into the process of producing goods and rendering services.
3) The *Contractor* shall ensure that it can be relied on to deliver quality goods and services without the need for the *Employer* to have to inspect all the time.

8.4 Quality Control Requirements

1) Quality Control is a product-oriented set of activities for ensuring quality in products/services. These activities focus on inspection and identifying defects before these reach the *Employer*.
2) The *Contractor* shall ensure that Quality Control is performed at all levels and phases of work carried out for the *Employer*.
3) The *Contractor* shall comply with all requirements specified in section 3.4 of the Supplier Quality Management Specification [1].
4) The *Contractor* shall complete a Quality Control Plan (QCP) and Inspections and Test Plan (ITP) before contract award. This shall be reviewed and signed off by the *Employer* within 30 days after contract award.

5) The *Contractor* shall submit the following documents within 30 days after the contract date, prior to the commencement of work, for acceptance by the *Employer*:
   a) QCPs and ITPs for review and acceptance by Eskom prior to the commencement of any work, inclusive of subcontracted work, within 30 days after contract award.

b) The sub- contractor QCPs and ITPs shall be submitted for review and comment by the *Contractor* and by the *Employer* within 30 days after the award of the tender. All *Contractor* and *Employer* comments shall be resolved prior to commencing work.
c) The QCPs and ITPs show each activity/requirement of the Works Information.
d) Data book index for acceptance by the *Employer*.

Note: these documents are to be compiled in line with Eskom's requirements and will have to be discussed with, and approved by the *Employer* prior to any work commencing.

6) The *Contractor* shall make use of the Kusile Project RFI/PA001 Process to request the *Employers* personnel to perform inspections. The *Contractor* shall ensure that all inspections have been "Passed" by their in-house quality control representative prior to requesting the *Employers* personnel to perform any inspection.
7) In the event of poor quality, re-work or incidents where products inspected by the *Employer* fail to meet requirements, the *Contractor* shall receive a Non-conformance (NCR) if deemed so by the *Employer*. The *Contractor* shall be liable for the *Employers* costs of re-inspection as well as be liable to pay penalties as specified in this contract.

8.4.1 Inspections

1) The *Contractor* shall be responsible for the inspection of all the Works that is performed and the *Employer* only verifies that the Works is acceptable.
2) The *Contractor* conducts all inspections in accordance with the accepted QCP / ITP.
3) The *Contractor* provides suitably qualified personnel to conduct on-and-offsite inspections
4) The *Contractor* ensures that all Works are inspected and approved before the *Employer* is invited for the inspections.
5) The *Contractor* provides a minimum of 5 working days' notice for local inspections (onsite and offsite). The notice contains copies of the Contractor's inspection reports.
6) For onsite inspections, the *Contractor* shall send a Request for Inspection (RFI) reminder 4 hours prior to the inspection so that the Quality Department may mobilise to perform the inspection. This shall be done via the Communication Interface Memorandum. This is over and above the aforementioned 5 working days' notice period.
7) Damages as a result of the *Contractor's* failure to comply with the inspection requirements as specified in this section will be borne by the *Contractor* and no compensation event or variation order will arise out of this.

8.5 Quality Plan

1) The *Contractor* shall submit a Quality Plan within 30 days of contract award for acceptance by the *Employer*.
2) The *Contractor* shall comply with all requirements specified in sections 3.2, 3.3 and 3.4 of the Supplier Quality Management Specification.
3) The *Contractor* shall submit a detailed contract organogram showing the quality personnel to be used in the Contract. The *Contractor* shall provide CVs of the quality management employees who will be responsible for quality on site.

8.6 Quality Documentation Requirements

1) For all products and services, the *Contractor* shall submit the following quality documents as a minimum:
   a) Data book Index
   b) Method statement (describing how work will be executed)
   c) Equipment list
   d) Drawings
   e) ITPs, QCPs and check sheets
   f) Inspection notifications accompanied by their inspection report
   g) Updated onsite, off site and offshore inspection schedules
   h) Inspection and or factory acceptance test dates as applicable
   i) Inspections completed / outstanding.
   j) Inspection and test reports
   k) Weekly and monthly contract quality progress report
   l) Materials used
   m) Material certificates
   n) Data sheets
   o) Equipment list
   p) Welding documents (if applicable) include Welding Procedure Specification (WPS), Procedure Qualification Record (PQR), welder qualifications, Welding Procedure Qualification Record (WPQR), welding consumables and all other documents required by relevant welding standards
   q) Quality Plan (as earlier described)
   r) Non-conformance and Defects registers and reports

2) The *Contractor* shall submit data books for all work for acceptance by the *Employer* if applicable. These are defined as follows:

   H1 – Fabrication
   H2 – Construction
   H3 - Commissioning

3) The *Contractor* shall submit data books in accordance with the *Employers* requirements. The *Employers* requirements vary depending on the type of component or system hence the *Contractor* shall modify the data books to meet the requirements of the *Employer*.
4) The *Contractor* shall submit 2 hard copies of data books and one software copy (on a DVD/CD).
5) Components may only be released for delivery to site once the H1 data book(s) has been accepted by the *Employer* if applicable.
6) Commissioning may only commence once the H2 data book(s) has been accepted by the *Employer* if applicable.
7) The *Contractor* shall ensure that all data book(s) have been submitted to and accepted by the *Employer* as per the *Employers* requirements and meet the time frames specified by the *Employer*.

8) Failure of the *Contractor* to submit data book(s) and obtain the *Employer's* approval at 100 % work completion shall prevent payment.
9) Failure of the *Contractor* to submit H1 data book(s) and obtain the *Employer's* approval prior to construction will prevent payment.
10) Failure of the *Contractor* to submit H2 data book(s) and obtain the *Employer's* approval prior to Commissioning will prevent payment.
11) Failure of the *Contractor* to submit H3 data book(s) and obtain the *Employer's* approval prior to takeover will prevent payment.
12) Failure of the *Contractor* to submit all data book(s) and obtain the *Employer's* approval will prevent take-over of the Works by the Employer.
13) The *Employer* has 28 days to review a data book from the time the *Contractor* transmits the data book to the document controller until feedback is received.
14) The *Contractor* shall specify the review status and discipline on the transmittal when transmitting data books to the Employers Doc control.

8.7 Contract Execution

1) Correspondence shall be directed to the *Employer*, and periodic quality review meetings shall be convened by *Employer* with the *Contractor*.

2) The mandatory quality review meetings are to be convened by the nominated project quality manager or his/her representative for the *Contractor*.

3) Quality Management employee's responsibilities shall include but are not limited to the following:
   a) Implementation of the QMS on site
   b) Administration of QA/QC systems on site
   c) Verification of approval status of Subcontractor's QCP and procedures
   d) On-and -offsite inspections
   e) Co-ordination, inspection and verification of the *Employer's* intervention points
   f) Review of *Contractor* testing and inspection documents (procedures, test results)
   g) Weekly and monthly progress reporting on quality performance

4) The *Contractor* shall comply with section 5 of the Supplier Quality Management Specification.

5) Monthly quality performance and management reports shall be prepared by the *Contractor* during contract execution. The content of these reports shall be agreed by the *Employer* when submitted to the *Employer* on a monthly basis.

8.8 Quality Reporting

1) The *Contractor* shall submit a monthly quality report, on the last working day of the month. The report includes but not limited to the following:
   a) A register of NCRs and defects
   b) Updated QCP / ITP register
   c) QA monthly report summary

d) Planned and completed local and foreign inspection dates
e) Completed and outstanding Inspections
f) Audit findings report

8.9 Supplier Quality Performance Monitoring Phase

1) During the contract execution phase, the *Contractor* shall be monitored by the *Employer* for performance on quality-related aspects. The outcomes of such monitoring will enable the *Employer* to take any appropriate actions pertaining to the *Contractor*.

2) The monitoring shall be carried out periodically by the *Employer* or at predetermined intervals during the execution of a contract.

3) The monitored key performance areas include the following:
   a) Quality
   b) Delivery
   c) Design
   d) Cost
   e) Management system

4) Subsequent key performance indicators associated with these areas will include the following:
   a) Nonconformity monitoring
   b) Audit and assessment evaluation scoring
   c) Management system compliance and accreditation
   d) Achievement of delivery targets as per contractual agreements
   e) Process improvements
   f) Corrective and preventive action response and closure

8.10 Preservation, Shipping and Transportation to be addressed

1) The *Contractor* is responsible for ensuring that all products are preserved in their appropriate manner as described in their specifications or in Eskom preservation, shipping and transportation procedures as applicable.
2) The *Contractor* shall submit the preservation, shipping and transportation procedures to the *Employer* for review and acceptance.
3) The *Employer* may choose to witness the packaging, loading and offloading of the products depending on their criticality, this will be indicated in the intervention points on the QCP / ITP document.
4) The *Contractor* shall ensure that all storage requirements for products are properly implemented to preserve the products against adverse conditions, deterioration, damages, etc. Storage and preservation procedures for the different products must be submitted to the *Employer* for review and acceptance.
5) The *Employer* may request to inspect the stored products at any given point during the storage period of the product.

6) Requirements for preservation, shipping and transportation are addressed in 240-105658000 [1].

8.11 General Quality Requirements

1) The *Contractor* shall comply with all requirements specified in section 6 of the Supplier Quality Management Specification.
2) All documents shall be approved by the *Employer*. If the *Employer* is dissatisfied with a document, then it is the *Contractors* responsibility to ensure that the *Employers* requirements are met.
3) All planning Quality Assurance and Quality Control documents shall be submitted for approval by the *Employer* within 30 days of contract award.
4) The *Contractor* shall make use of qualified and experienced Quality Controllers to ensure that products/services are of a high quality prior to inspection by the *Employers* quality representative(s).
5) The *Contractor* shall ensure that all defects and NCRs are addressed correctly and timeously.
6) Defects and NCRs shall be closed within a time frame or period specified or accepted by the *Employer.*
7) When NCRs and Defects notifications are issued, the Contractor shall acknowledge receipt within (5) working days and include the Root cause(s), Correction(s) and Corrective action(s) and proposed implementation dates to the *Employer* as per the contract response period.
8) The corrective actions will include the implementation and completion dates. Progress on all NCRs and Defect notifications issued to the *Contractor* must be reported to the *Employer* on weekly basis.
9) The Contractor's quality manager keeps a register of all NCRs and Defect notifications issued.
10) Deviations from the Contract are treated as a non-conformance.
11) Records of NCRs and Defect notifications are kept and form part of the data book records.
12) During the contract execution phase, the *Contractor* will be monitored by the *Employer* for performance on quality related aspects. The monitoring will be in the form of audits and assessments. The *Employers* quality department will be involved in every assessment to ensure that all NCRs and Defects raised are closed or the necessary penalties are implemented as stipulated contractually.
13) The Contractor is accountable for the quality of the output and liable for any failures.
14) The interventions points include all witness, hold, verification, surveillances and review points required by the Employer. The Contractor's failure to allow the intervention points will constitute a non-conformance. The *Employer* has the right to approve or reject intervention points and may add or remove these points as desired.
15) The Contractor shall only be paid subject to meeting and *Employer* approval of all quality requirements and three copies of the data books accepted by the *Employer*.
16) The *Contractor* shall provide all information, material and records required to comply with the Eskom Quality Management System and such further information, material and records as may be requested by the *Employer* from time to time.
17) The *Contractor* shall ensure that no inspections are missed and all schedules are observed.
18) The *Contractor* shall comply with all relevant Eskom governance documents (codes, standards etc.) whether specified in this contract or not.

19) The *Contractor* shall make use of an Authorised Certification Authority such as SABS to certify *Contractor* QMS if applicable.
20) The *Contractor* shall make use of Recognised International Accreditations such as SANAS which accredits the Authorised Certification Authority if applicable.
21) The quality requirements shall be met by the contractor and all sub-contractors.

9. The Parties use of material provided by the Contractor

***Employer*'s purpose for the material**

Clause 70.1 states that the *Employer* has the right to use the material provided by the *Contractor* for the purpose stated in the Scope. Such material will amongst other things be used by the *Employer* for strategic planning.

10. Safety and Health Management

The *Employer* expects the *Contractor* to engage in safety culture initiatives in line with the Eskom Life Saving Rules, Safety and Quality Requirements Standard.

The *Contractor* and all sub-consultants shall comply with the requirements listed in Employer's standard document, 'Eskom Safety, Health, Environment and Quality Policy 32-727", for all the Employer Health and Safety requirements.

The *Employer* places emphasis on the provision of a comprehensive Health and Safety file per the attached checklist for this contract. The Project Health and Safety file shall comply with the requirements of the OSH Act.

The *Contractor* shall develop and submit a Health and Safety file for this contract. This shall describe the project health and safety requirement and shall also describe the requirement for continued compliance to the requirement of the OSH Act.

11. Working on the Employer's property

***Employer*'s entry and security control, permits, and site regulations**

- The Contractor shall comply to the Employer's entry and security control, permits, and site regulations
- All employees working on the Eskom Power Station Site must complete induction before work can start.

- Personal Protective Equipment (PPE) must be worn at all-times except in the PPE free zones.
- All employees must comply to Eskom Life Saving Rules:
    - Open, isolate, test, earth, bond and/or insulate before touch.
    - Hook up on heights
    - Buckle Up
    - Permit to work
    - Be sober.

People restrictions, hours of work, conduct and records

The *Contractor* shall keep records of their people working on the *Employer*'s property, including those of his Sub-consultants. The *Employer's Agent* shall have access to these records at any time. These records may be needed when assessing the monthly payment.

12. Things provided by the Employer

The *Employer* shall provide work space for the *Contractor* to use during performance of the *service*s at any of the Eskom offices.

13. Acceptance

This document has been seen and accepted by:

Name	Designation
Mandla Nhlengethwa	Delivery Manager Bulk Handling Material
Cobus Prinsloo	Manager Dust Handling Plant Units 4-6
Tumisho Railo	Project Engineering Manager
Chris Baclay	Senior Manager Projects Oversight/Delivery

14. Revisions

Date	Rev.	Compiler	Remarks
March 2023	1	S Foku	

15. Development Team

The following people were involved in the development of this document

- Hatlane Mabunda - Commissioning BOP Manager
- Tsholofelo Seloro - Senior Commissioning Supervisor
- Kholofelo Silindana - Senior Commissioning Supervisor

16. Acknowledgements

None