

PART 3: SCOPE OF WORK

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PART 3: *PURCHASER'S* GOODS INFORMATION

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1. Introduction

The inspection of the LP last stage blades and rotor steeples/serrations of Medupi and Kusile LP turbines are conducted in accordance with the original equipment manufacturer's recommendations. The inspection entails full surface non-destructive testing (NDT) on the blade aerofoil, the blade root and rotor last stage steeples. Both the blade root NDT and rotor steeples require the blades to be removed (blade-out), inspected and reinstalled at the workshop. This is to be carried out every 50 000 equivalent operating hours (EOHs).

An alternative to blade-out inspection (for access to the root) is in-situ phased array ultrasonic testing (PAUT) of the blade root. To reduce the risk of long outage durations and likelihood of outage slips related to the blade-out inspections of the LP last stage (also referred to as L-0) blade roots, the PAUT option is a preferred and recommended method.

There is currently no developed and qualified PAUT procedure to inspect these blade roots. It is crucial that a project is started to ensure that the procedure is developed and qualified to facilitate the inspection of the blade roots without the blades being removed from the rotor.

This document encompasses the Scope of Work (SoW) for the procurement of LP turbine last stage dummy blades that will be used during the development of a LSB PAUT procedure for the Medupi and Kusile LPT's.

2. Supporting Clauses

2.1 Scope

2.2.1 Purpose

This document is aimed at detailing the scope of work required for the procurement of LP turbine last stage dummy blades. These blades will be used during the development and qualification of the Medupi and Kusile LP turbine last stage blades phased array ultrasonic test procedure.

The document is aimed at the procurement of fourteen (14) test or dummy blades roots to be used during open and blind trials required as detailed in this scope of work. The Scope of Work for the development and qualification of the PAUT inspection test procedure will be covered in a separate document.

2.2.2 Applicability

This document shall be applicable to Medupi and Kusile power stations.

2.2.3 Effective Date

This document shall be effective from the date that it is authorised.

2.2 Normative/Informative References

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

2.2.1 Normative

- [1] ISO 9001 Quality Management Systems
- [2] 474-12938 Medupi and Kusile LP Stage 6 (L-0) Flaw Specification Report.
- [3] 240-87660096 Non-Destructive Testing Inspection Qualification Standard
- [4] 240-83539994 Standard for Non-Destructive Testing (NDT) on Eskom Plant
- [5] 474-13092 Medupi and Kusile LP Stage 6 (L-0) Inspection Objectives

2.2.2 Informative

- [1] 474-12938 Medupi and Kusile LP Stage 6 (L-0) Flaw Specification Report

2.3 Abbreviations

Abbreviation	Explanation
3D	Three Dimensional
CAD	Computer Aided Design
EDM	Electric discharge machining
EOH	Equivalent Operating Hours
NDT	Non-Destructive Testing
LP(T)	Low Pressure (Turbine)
LSB	Last Stage Blade
PAUT	Phased Array Ultrasonic Testing

2.4 Roles and responsibilities

As per the Standard for Non-Destructive Testing Inspection Qualification 240-87660096.

3. Scope of Work

Medupi and Kusile Power Station low-pressure turbines (LPT) have two double flow sections, which are made up of six stages per flow. There are 53 last stage blades fitted to each side of the LPT with a hub diameter of 1420 mm and casing diameter of 2996 mm. The LPT LSB's are manufactured from St11NiE material. The exhaust area per flow is 5.5 m² with an exhaust temperature of ~40 °C.

The last stage LP blades (L033K) have a curved axial entry fir tree root design with a total of 3 serrations (hooks) which for the purpose of this report are numbered from the highest radial position 1 (also referred to as the top serration or 1st serration), to the lowest radial position, 3 (also referred to as the bottom serration or 3rd serration). The blade features an integral snubber with the aerofoil having a highly twisted design. The mean blade length is 766 mm, with a mean snubber height of 592 mm and blade mass of ~17.8 kg. For more information, refer to [5] 474-13092 Medupi and Kusile LP Stage 6 (L-0) Inspection Objectives.

3.1 Works Information

This scope is for the manufacturing, insertion of the EDM (electrical discharge machined) notches and supply by the Contractor of the fourteen (14) test or dummy blades roots. The blades shall be manufactured using the material St11NiE or equivalent and will be in accordance with the 3D CAD drawings to be provided by the Employer.

The following shall be provided to the Contractor by Eskom:

- a) The description of the blades and material of the blades
- b) 3D CAD drawings of the blade roots and the rotor steeples
- c) Details of the EDM notches to be inserted by the contractor

3.2 Expected deliverables from the Contractor

3.2.1 Manufacturing and supply of test/dummy blades

An independent Contractor, shall be appointed to manufacture, insert the EDM notches and supply fourteen (14) test/dummy blades required for open and blind trials.

The test blades will consist of blade root and 100mm aerofoil above the root shoulder. The Employer will provide the Contractor with dimensional drawings (3D CAD) for manufacturing of the dummy blades. The required quantities will be split between seven (7) for the LH LPT flow and seven (7) for RH LPT flow. The dummy blades must consist of the complete foot/root geometry and 100m aerofoil. Depending on availability, the Employer may allow the Contractor access to some of the last stage blades being removed from the rotor during the blade out inspection. This will afford the Contractor an opportunity to inspect and take any additional measurements he/she may require for the purpose of test blades manufacturing.

Supply of the test blades shall follow the usual manufacturing processes such as:

- a) Submission of detailed QCP's for approval by the Employer prior to commencement of any manufacturing work. The Employer will also be afforded the opportunity to add its intervention points (surveillance, review, witness, hold etc.) and deemed necessary.
- b) NDT's of the bulk materials and the completed blades as per the approved QCP. The Contractor will use the services of an Employer approved NDT service provider. All requirements per [3] and [4] must be adhered to by the Contractor.
- c) Upon completion of the test blades manufacturing the Contractor shall present a dimensional report to the Employer for approval. This report shall contain as a minimum a comparison between the actual dimensions measured and the design measurements. Any deviations must be noted and motivated for the Employer's approval.
- d) The blades must be manufactured from the following materials: - St11NiE (original material) or 1.4922/1.4313 (alternative material).
- e) The Employer will conduct a final quality document review before the dummy blades can be released for transport.

The Contractor shall be responsible for the transport and safe delivery of the dummy blades to a facility to be identified by the Employer. This facility will most likely be the Eskom Rotek Industries (ERI) facility in Rosherville, alternatively inside the borders of the Republic of South Africa. The Contractor shall assume all responsibility to ensure that the blades are delivered to the Employer's facility undamaged.

After manufacturing of test blades, the Contractor shall insert/introduce EDM notches on the test blades roots. The notches shall be inserted in line with the Eskom's flaw specification, inspection objective and IQA decision.

3.2.2 General Requirements

For the manufacturing of the dummy blades, the prospective Contractor(s) must have a proven minimum of five (5) years' experience in steam turbine last stage blade manufacturing.

The Contractor must have or is able to procure the correct material required for manufacturing of the dummy blades.

The Contractor must have the machine/technology and capability to produce the EDM notches after manufacturing of the dummy blades.

The Contractor must have an in-house suitably qualified Level 3 UT technicians (in forgings & castings) and level 2 PAUT technicians.

3.2.3 Packaging

All supplied components shall be packaged in such a manner that they will be transported and stored without damage. This includes preventing damage due to moisture ingress, dust, and foreign objects. The Kusile Power Station Export System Spares Preservation [4] shall be used in addition to the Contractor Transportation and Storage procedures.

Packaging shall be of material that will not be damaged, to an extent possible, by harsh weather conditions during transportation. If that is not possible, then the packaging shall be protected against such conditions.

Where possible, packaging to be such that procured spares can be positively identified through the packaging. Where this is not possible, the packaging to be such that it allows opening and closing of packaging and still maintain the packaging integrity thereafter.

Delivery packaging shall include as a minimum the following details:

- i. Purchase Order Number
- ii. Part Description
- iii. Part number
- iv. Eskom SAP Material number
- v. Drawing number, where applicable
- vi. Physical address of Kusile Power Station and the *Supplier*
- vii. Contact details of the *Supplier*
- viii. Delivery notes number

3.2.4 Transportation

Transportation of the components shall be conducted with due regard of the sensitivity of the units and in such a manner that spares are suitably protected. All possible care must be taken to ensure that the components are not subjected to undue rough handling, vibration, humidity, excessive temperatures, or abuse. When courier service is used for transportation, the courier services service provider shall be alerted to the nature of the content of the packages and instructed to handle with care. Labels shall be used to indicate the fragile nature of the items.

3.2.5 Quality Control of Components

- a) No incorrect, damaged, or faulty components will be accepted.
- b) All the components will be inspected before payment can be processed.
- c) Where applicable; test certificates, material certificate, manuals, data sheet, electronic cards programmed certificates and signature shall be provided.
- d) No components will be accepted without specified documents.

3.2.6 Information to be provided to the Supplier.

The *Supplier* shall be provided with Data Capture Form (DCF) for each spare required. The *Supplier* is required to confirm that the datasheet corresponds fully to the information that is captured on the DCF's or request clarification of the required spare specification.

3.2.7 Guarantee of delivered components.

All delivered components shall come with an at least 12-months guarantee period starting from the *delivery date*.

3.2.8 Insurance of the Goods

Insurance to be the responsibility of the *Supplier* until *delivery*.

3.2.9 Roles and Responsibilities

3.2.9.1 Employer: Technical Support & Engineering

- a) Compile and submit scope of work with technical specifications.
- b) Perform Quality Checks on procured spares and accompanying documentation.
- c) Perform QC of spares at the OEM / *Suppliers* warehouse depending on the equipment/spare criticality
- d) on delivery at the Employer premises or where specified before the spare is delivered.
- e) Liaise with all relevant stakeholders for any input.
- f) Ensure that this Works Information is in accordance with Eskom policies and procedures
- g) Provide all necessary information to assist in spares procurement
- h) Participate in technical evaluation of the tender documents
- i) Assist with the preparation of all the reports to different tender committees, where applicable
- j) Provide technical assistance to Maintenance, Materials Management and Procurement Departments during the execution of this Works Information.
- k) Provide Materials Management with populated DCFs for cataloguing of spares and recordkeeping.

3.2.9.2 Employer: Materials Management

Catalogue the spares after completion of DCFs

Ensure that the information supplied by the engineer is enough for cataloguing

Perform QC on all submitted DCFs

Make provision for storage of procured spares

Notify engineering and maintenance for spares that are ready for QC and work together with engineering and maintenance when accepting spares into stores.

3.2.9.3 Employer: Procurement Department

- a) Perform all procurement processes outlined in this Works Information
- b) Issue invitation to tender to the *Supplier*.
- c) Provide the *Employer (Technical Support & Engineering)* with *Supplier* information for sole source justifications, where applicable.
- d) Set up clarification meetings between *Supplier* and *Employer*
- e) Act as communication link between *Supplier* and *Employer*
- f) Ensure all necessary payments are processed timeously and keep record thereof.
- g) Arrange technical evaluation sessions.
- h) Compile and present mandate to negotiate and arrange negotiation meetings when required and give feedback to relevant tender committee.
- i) Keep record of all tender documentation

3.2.9.4 Employer: PTM

- a) Perform inspections and QC on spares upon delivery.
- b) Ensure spare items are stored properly by Materials Management as per relevant storage recommendations by the respective manufacturers.
- c) Ensure Spares are used sparingly and appropriately for the duration of the contract.
- d) Perform QC of spares at the OEM / *Suppliers* warehouse depending on the spare criticality
- e) Ensure all datasheets are submitted and stored properly for record purpose.

3.2.9.5 Management and Reporting

- a) The Supplier is to be represented at any ad-hoc meetings that may arise to address any scope and safety related matters.
- b) Liaise on meetings shall be held with the Employer's Representative or his/her delegate on as and when required basis to discuss any technical details, or concerns.
- c) For the duration of the contract the Contractor will provide a comprehensive rolling programme which will contain lead time durations, this will be used for ordering spares on time and such programme must be revised whenever necessary to contain relevant information and dates. The committed programmes must always be adhered to avoid application of penalties.
- d) Meetings will be convened and chaired by the service manager, or an Eskom Senior employee as required, all meetings on shall be recorded using the Employer's attendance register and minutes taken. 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 condition of contract to carry out such actions or instructions.

3.2.9.6 Communication and Correspondence

- a) Correspondences shall be written formally on the letter head format of the organisation and addressed to the relevant person.

All correspondence includes but not limited to:

- i. Kusile Power Station
 - ii. Employer's Contract number
 - iii. Contract description
 - iv. Correspondence subject matter
 - v. Employer's name and contact details.
 - vi. Contractors contact details.
 - vii. Date
- b) Where appropriate the correspondence includes the Employer's reference and is delivered as a single package or as per the agreed contract terms.
 - c) All communications from the Contractor are numbered sequentially with a prefix as advised by the Employer. The Employer responds in like manner. The prefix and numbering system are decided upon at the Inaugural meeting.

3.2.9.7 Quality and Documentation Control

- a) During the tender process a quality criterion will be defined that the Contractor must comply to.
- b) The Contractor shall ensure that any witness, hold, and inspection points are strictly adhered to.
- c) All Quality References and Standards as stipulated in this document will be adhered to.
- d) The Contractor to comply with the Employer's quality documentation management system and processes.

3.3 Operating manuals and maintenance schedules

The following are the Supplier's requirements:

- a) The Supplier shall supply any additional information such as brochure, general arrangement drawing, certificates, detailed specification, data sheet, settings document for programmable electronic components etc.
- b) The Supplier shall supply preservation and storage procedure/s, where applicable.
- c) The Employer may make clarification sessions available to either prospective Supplier/s to further assist the prospective Supplier's to meet the requirements of the supply scope delivered by the Supplier.

4 Supply Requirements

4.2 Supplier role and responsibility

- a) Provide a quotation for the items in Appendix A as part of tender deliverable.
- b) Supply procured spare quantities as requested by the Employer.
- c) Provide technical support services as requested by the Employer.
- d) Confirm correctness of the supplied spare information
- e) Provide spares technical information in accordance with this SOW.

- f) Timeously inform the Employer of any delays or when outstanding or additional information from the employer is required.
- g) Responsible to ensure that a quality product is delivered.
- h) Responsible to ensure that the correct spare is supplied.
- i) Responsible to ensure that every effort is made to keep to the agreed program and plan.
- j) Provide the required technical datasheet and/or product brochure. No spare shall be accepted without a datasheet.
- k) Conform to all the other requirements stipulated in this document.
- l) Supply all the necessary type test sheets/results.
- m) Invite the Employer or representative thereof three (3) working days in advance for witness/hold points, if applicable, as agreed.
- n) All Supplier employees entering site shall comply with Eskom's policies and site regulations, adherence to Eskom's Life Saving Rules, adherence to Generation Occurrence Management Procedure, Smoking Policy, zero tolerance on alcohol usage, etc. These requirements will be detailed during the induction training process.
- o) Ensure that all staff brought onto site in connection with this SOW should be able to fluently speak, understand and write in English language.
- p) The Contractor ensures that all staff brought to Kusile PS site have a valid fitness certificate based on the specified plant man-job specification.

5 Specification of the services to be provided.

Manufacturing, insertion of the EDM (electrical discharge machined) notches and supply of the fourteen (14) test or dummy blades roots.

6 Constraints on how the *Supplier* Provides the Goods

6.2 Programming constraints

6.2.1 Inclusions in the programme

General

The Contractor submits a Resource Loaded Detailed Level 4 single integrated programme. The Contractor shall clearly identify and interface points between the different Contractor, Employer and Others.

- Discipline Speciality Program (Level 4)

This is the execution Schedule, also called a Project Working Level Schedule. Level 4 is the detailed working level schedule, where each schedule is an expansion of part of a Level 3 schedule, and is established within the integrated project schedule. This is the key working level CPM schedule displaying the activities to be accomplished by the project workforce and is required for every project.

The discipline speciality programme developed and maintained by the Contractor is generated for tracking and control of various activities and deliverables for all phases of the contract.

This programme typically represents day-to-day tasks which are work unit based and become summarised in the Level 3 activities. Resource information for manpower and Equipment and reflected in the resource histograms is to be provided by the Contractor.

6.3 Work to be done by the Delivery Date

Manufacturing, insertion of the EDM (electrical discharge machined) notches and supply of the fourteen (14) test or dummy blades roots.

6.4 Constraints at the delivery place and place of use

Delivery of the goods shall be within the Purchaser's working hours. The Purchaser's working hours are between 07:00 to 16:15 Monday to Thursday and Fridays, 07:00 to 12:15. The goods shall be delivered at Kusile Power Station.

6.5 Documentation control

All contractual communication between the *Purchaser* and the *Supplier* shall be in the form of properly compiled letters or forms attached to e-mails and not as a message in the e-mail itself. All formal communication is via the *Supply Manager*.

6.6 Health and safety risk management

LEGAL COMPLIANCE

6.6.3 Section 37(2) (Legal) Agreement

A section 37(2) agreement must be signed between Kusile Power Station and the main contractor at the time of submitting the safety file. The main contractor must ensure that a section 37(2) agreement is compiled between the main contractor and all their appointed contractors for the contract. The original copy of the section 37(2) agreement must be retained by the contractor, and a copy must be retained by the responsible project manager/end user. A copy of all the agreements must form part of the respective contractor's OHS file.

6.6.4 Hazardous Work by Children (Child Labour)

The constitution of the Republic of South Africa, in the "Bill of Rights", is clear on the rights of children, especially when it comes to:

- a) *being protected from exploitative labour practices.*
- b) *not be required or permitted to perform work or provide services that*
- c) *are inappropriate for a person of that child's age; or*
- d) *This places at risk the child's well-being, education, physical or mental health, or spiritual, moral, or social development* and the Basic Conditions of Employment Act, Chapter six, Section 43, "Prohibition of employment of children."

Before resorting to the use of child labour, due consideration must be given to the child's constitutional rights. Where work is being performed which is not prohibited in terms of the constitution, then such work must be conducted in terms of the OHS Act "Regulations on Hazardous Work by Children in South Africa" with emphasis on paragraph 2: Purpose and Interpretation. Kusile Power Station does not condone the use of child labour and, therefore, all effort must be exercised, and child labour should not be used.

6.6.5 OHS Act

The main contractor and appointed contractors shall have an up-to-date copy of the OHS Act and regulations which will be available to all employees.

6.6.6 Legislative Compliance

All contractors will comply with all the legislation pertaining to this contract being:

The Main contractor and all appointed contractors will comply with all the legislation pertaining to this project being:

- The Constitution of the Republic of South Africa (particularly Section 24 of the Bill of Rights).
- Occupational Health and Safety Act 1993 (Act 85 of 1993) and its Regulations.
- National Environmental Management Act 1998 (Act 107 of 1998).
- Environment Conservation Act 1989 (Act 73 of 1989).
- National Water Act 1998 (Act 36 of 1998).
- Civil and Building Work Act.
- National Road Traffic Act 93 of 1996.
- Compensation for Occupational Injuries and Diseases Act.
- SANS Standards –Contractor shall use the relative standards applicable to the project.

6.6.7 KUSILE POWER STATION REQUIREMENTS

All contractors shall, before commencement of the project ensure that all their employees are familiar with the relevant Kusile Power Station OHS documentation that is applicable to contract services.

Before the Appointed Contractor commences with any work, The Safety file package must be submitted to the OHS department **2 weeks** before the agreed project commencement date.

The OHS department shall assess and give written feedback to the appointed contractor.

The safety file shall be approved by a form of a written letter, the letter shall authorise the appointed contractor to commence with site establishment.

Before the appointed contractor commences with any work, the Kusile power station Project Manager/Contract Manager shall ensure that;

- The contractor must submit a SHE Plan in line with the scope of work
- Company own organogram
- Relevant legal appointments
- Proof that vehicles meet legal requirements
- Driver competencies to operate the vehicle
- Methodology/work instruction for technical evaluation criteria for lifting and handling of Pulse Jet Fabric Filter Plant Cages.
- Route risk assessment
- Baseline risk assessment addressing all associated activities as per issued scope of work
- A plan must be in place to monitor and review baseline risk assessment
- Valid medical certificates of fitness
- Valid letter of good standing
- All drivers must be competent risk assessors
- All drivers must have First aid level 2
- Proof of company own induction
- Evacuation officer/warden must be appointed in writing with the competency
- The contractor must identify suitable PPE required for the activities including the identification of appropriate tools.
- The contractor must submit job descriptions supported by proof of competencies for all employees.
- First aid appointments must be made to meet the requirements, appointees must be trained to level 2 from SAQA approved training provider and CI number must be clearly indicated.
- Applicable legal appointments must form part of the safety file with competency certificates per appointment.

- The appointed contractor must submit a Covid-19 risk assessment, Covid-19 management plan, Covid-19 policy and an appointment letter for a Covid-19 compliance officer in line with the guidelines as issued by the Department of Employment and Labour
- No vulnerable employees are allowed to come to Kusile site as identified by the Department of Employment and Labour
- The appointed contractor must supply employees with at least 2 cloth masks over and above other masks that may be required due to the risk of the activities.
- The appointed contractor must supply hand gloves and hand sanitizers to the employees
- The transport used to transport employees must be disinfected as per prescribed frequency
- All risk assessments must be compiled by competent person, who has a certificate of competency for Risk Assessment from SAQA approved training provider.

6.6.8 SHEQ POLICY

A SHEQ policy is a statement of intent and a commitment by the organization's CE and senior management in relation to the relevant OHS roles and responsibilities, the achievement of their strategic objectives, and values of integrity, customer satisfaction, excellence, and innovation. The main contractor and all appointed contractors, if not already in place, will be required to compile an organisational SHEQ policy in line with their OHS responsibilities. The policy must be signed by the organisation's CE or the appointed assistant to the CE, OHS Act Section 16(2). The policy must be displayed in a prominent place within the workplace. A copy of the policy must be filed in the contractor's OHS files and attached as an annexure to the OHS Plan.

5.5.7 COVID -19 POLICY

Due to the current pandemic the contractors are required to submit the Covid policy signed by the most senior person. The policy must be displayed in a prominent place within the workplace. A copy of the policy must be filed in the contractor's OHS files and attached as an annexure to the OHS Plan.

5.5.8 Covid -19 requirements

Covid-19 costs are not for profit making purpose and Kusile Power Station reserves the right to accept and/or decline the list of PPE which will be listed in the detailed Covid-19 costs. Due to the current pandemic the contractors are required to provide Kusile Power Station with a Covid-19 risk assessment and a detailed plan on how to prevent the spread of the virus and what control measures will be put in place to protect Kusile Power Station employees and members of the public. The risk assessment must include the following but not limited to, adherence to Covid-19 protocols in designated smoking areas. Covid-19 costs are applicable for the duration of the pandemic and the Covid-19 costs will be ceased once the country has declared that Covid-19 is no more a pandemic. The contractors have an obligation to comply with the National Disaster Management Act including the appointment of the Compliance Officer.

5.5.9 COID

The Main contractor and all his/her appointed contractors shall be registered with an appropriate employment compensation commissioner and have available a valid letter of good standing (LoG) from such commissioner. The obligation lies with the contractors to ensure that the LoG remain valid throughout the contract period. A copy of the LoG must be filed in the contractor OHS files.

5.5.10 ESKOM LIFE-SAVING RULES

1. Eskom Kusile Power Station places a high value on health and safety and urges every organization that undertakes work for Kusile Power Station to do the same.
2. Kusile Power Station has developed six life-saving guidelines that will apply to all Kusile Power Station employees, agents, consultants, and contractors. Any Kusile Power Station employee or employee of a Main Contractor or appointed contractor who fails to follow these rules would be

deemed a serious violation. These rules are in place to protect any employee, labour broker, or contractor working from significant injury or death.

3. If any contractual work (including delivery of any product) is to be undertaken on Kusile Power Station premises, the rules shall be obeyed by any contractor and their employees.

The rules are:

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.
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	NO REVERSING WITHOUT A SPOTTER/ FLAGMAN Whenever a construction vehicle has to reverse, there must be a flagman to guide the driver at all times.

Eskom will take a zero-tolerance approach to these policies.

Noncompliance to Life-saving rules is regarded serious misconduct and will result in serious disciplinary action, which may include dismissal.

This is to ensure that everyone who works on or visits an Kusile Power Station facility returns home to their families safely.

5.5.11 SUBSTANCE ABUSE

1. Alcohol and substance abuse are serious threats to any business, especially when it comes to workplace accidents and car driving. As a result, Eskom Kusile Power Station has the right to take reasonable procedures to identify and prohibit drunk people from entering the company.
2. General Safety Regulation 2A specifies the legal position on intoxication.
3. The allowable alcohol and drug level is 0%.
4. All contractors must follow Eskom's procedure 32-37 ("Substance Abuse Procedure"), taking into account that this is an Eskom Life-saving Rule number 4: (BE SOBER"), and anyone entering the Eskom Kusile Power Station will be subjected to ad hoc alcohol testing if the BU has self-alcohol testing equipment.
5. Contractors are invited to develop their own manual and test their own employees for alcohol on a regular basis.

6. Test results must be marked "Confidential" and kept in the employee's personal file.
7. Eskom's life-saving rules must be included in the induction process.
8. All employees involved in the scope of work must sign the Life-saving rule pledge before commencement of work.

NB: OHS Specification will be issued together with tender documents

5.6 Environmental constraints and management

- a) The *Supplier* shall have a documented and implemented environmental management system e.g. environmental policy, operational procedures relating to their activities, Environmental Aspects and Impacts Register.
- b) The *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 *Supplier's* employees shall attend induction on environmental management prior to commencement of work at Kusile Power Station.
- d) The *Supplier* shall comply with all Eskom Kusile Power Station environmental requirements such as policies, standards and procedures.
- e) The *Supplier* shall appoint trained and competent personnel in writing, who will have the responsibilities of implementing all environmental requirements on a specific contract.
- f) Non-conformance and All spills/emergency incidents shall be reported to *Supply Manager* and Environmental Officer(s) immediately on occurrence, such reports must include but not limited to the following information:
 - The date and time of the incident
 - The cause of the non-conformance/incident;
 - The proposed actions to correct and prevent recurrence.
- g) Eskom Kusile Power Station shall issue non-conformances where there are deviations from Eskom Kusile Power Station Procedures and any other environmental requirements, and the *Supplier* shall be responsible to provide an action plan and close out of such non-conformances timeously.
- h) Environmental Incident Investigations shall be done jointly where responsible managers and the environmental team from Eskom and the Eskom subsidiary or contractor are present.
- i) Environmental Incident investigation shall be done in accordance to Eskom Environmental Incident Management Procedure (240-133087117).
- j) The *Supplier* shall be responsible to ensure duty of care during execution of work at Kusile Power Station and shall be liable for the costs for the costs of remedying pollution, *environmental degradation and consequent adverse health effects as indicated on the NEMA principles below:*

National Environmental Management Act 107 of 1998 (NEMA) principles:

- Duty of care and remediation of environmental damage

Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorized by law or cannot reasonably be avoided or stopped, to minimize and rectify such pollution or degradation of the environment.

- Polluter Pays Principle

The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimizing further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.

- k) The *Supplier* shall allocate funds for the implementation of environmental requirements.
- l) All contractors shall abide to Eskom Zero Liquid Effluent Discharge through the process of reuse and recycling.

- m) All waste generated during the execution of the scope of work shall be managed in accordance with Kusile Power Station Waste Management Work Instruction (240-105776552) and in compliance with applicable environmental legislation and bylaws.
- n) All *Supplier* should be aware of Eskom SHEQ Policy.
- o) All *Supplier* must take into account environmental consideration when carrying out Risk Assessments.
- p) All equipment used on site must be in good working condition and no fuel and/or oil leaks on any plant will be tolerated.

Records to be kept onsite for Environmental Management

The following minimum records shall be kept on sites:

- a) *Supplier's* site-specific Environmental Management Plan and Environmental aspect and impact register. Environmental aspect must be identified, and how they should be mitigated and also be communicated to employees. Proof of communication must be available
- b) Environmental Incident registers and investigation reports.
Incident must be reported immediately or within 24 hours of occurrence, investigation must take place within 7 days and concluded with 30 days, lesson learned must be shared with employees. Record of environmental incidents must be made available.
- c) Non-conformance register.
When non-conformances are closed, they should be investigated and close-out within the agreed timeframes.
- d) Complaints register. Where complaints are raised they should be reported to Kusile Environmental management Department, be investigated and closed out.
- e) Waste disposal register
- f) Hazardous Substances registers and SDS where applicable.
Where hazardous substances are used, a register should be maintained and all SDS should be available and communicated to employees.
- g) Records of audit reports and audit findings close-out, where applicable.
- h) Records of audit and how findings where closed should be maintained.
- i) Records of environmental inspections conducted.
Monthly environmental inspection should be conducted and records of inspections should be maintained.
- j) Licences for Landfill sites/Waste Treatment plant for all waste streams generated and disposed by the contractor.
- k) Registration certificate for a waste service provider appointed by the *Supplier*
- l) Safe disposal certificates or weighbridge certificates for all waste disposed.

Tender Submission Documentation

The following documentation shall be submitted with all tender submissions:

- a) Environmental Policy
- b) Aspect and impact register or an environmental management plan (relevant to the scope of work)
- c) Environmental Management System Certificate (if certified) if not, an environmental management system manual or procedures
- d) Waste Management Plan
- e) Proof of training of persons performing activities that could have significant impact on the environment.

5.7 Quality

The quality requirements are as per ISO 9001:2008 and *Employer* Quality Standard, QM 58. This quality management philosophy is developed from the basis that manufacturers produce quality products, supervisor oversees the process, checks quality but liability for quality remains with the *Supplier*. The *Supplier* submits a QMS as a returnable schedule and uses it for all phases of the Project. The QMS complies with the requirements of ISO 9001:2008 standard. The *Supplier* provides evidence of a fully implemented QMS as and when requested by the *Supply Manager*.

The *Supply Manager* may at his sole discretion carry out an audit on the *Supplier*, the *Supplier's* suppliers and Sub-*Suppliers*

Quality control plans will be produced by the *Supplier* or manufacturer which will indicate the level of product quality control to be applied. The CQP must be aligned to, and reference ISO 10005:2005 QMS, guidelines for quality plans and in compliance with the guideline in 240-105658000. The CQP will make reference to the *Supplier's* QMS Procedures to be used in this Contract. This plan will be reviewed by the *Supply Manager*. The project team monitors that these plans are being implemented and that it is yielding the expected results through process and product verifications.

High quality standards are also assured by conforming to the following:

- a) The use of sound design and engineering principles,
- b) The design process uses a good performance and functional specification,
- c) It is ensured that the installation conforms to the Works Information.
- d) Design Review Procedure is followed
- e) Engineering Change Procedure
- f) QA/QC on project (manufacturing, installation)

The *Supplier* submits the following documents within ten (10) working days of the Contract Date to the *Supply Manager* for review and acceptance prior to the commencement of work:

- a) The *Supplier's* QMS compliance with the requirements of ISO 9001:2008
- b) *Supplier's* quality manual
- c) *Supplier's* quality procedures
- d) *Supplier's* quality forms and work instructions
- e) *Supplier's* quality system documents referenced in this Works Information

The *Supplier* supplies the *Supply Manager* with a QCP or ITP for review and acceptance.

The *Supplier* supplies the *Supply Manager* with a detailed contractor organogram showing the quality personnel to be used in the Contract. The *Supplier* provides CVs of the quality management employees who will be responsible for quality.

The *Supplier's* Quality Management employee's responsibilities include but are not limited to the following:

- a) Implementation of the QMS
 - b) Administration of QA/QC systems
 - c) Verification of approval status of Sub-*Contractor's* QCP and procedures
 - d) On-and -offsite inspections
 - e) Co-ordination, inspection and verification of the *Purchaser's* intervention points
 - f) Review of *Contractor* testing and inspection documents (procedures, test results)
- Reporting on quality performance

The requirement to submit these documents does not constitute a compensation event.

5.7.1 Quality Responsibility

- a) The *Supplier* is accountable for the quality of the output and liable for any failures.
- b) The *Supplier* is responsible for defining the level of intervention of QA/QC or inspections. These are in line with the *Purchaser's* requirements.
- c) The *Supplier* is responsible for defining the level of intervention of QA/QC or inspections to be imposed on his Sub-*Contractor's*, suppliers and sub-suppliers and must ensure that these are in line with the *Purchaser's* requirements.
- d) The intervention requirements take into consideration the criticality of the Plant and Material.
- e) The intervention points include all witness, hold, verification and review points required by the *Employer*. The *Supplier's* failure to allow the intervention points will constitute a

non-conformance.

5.7.2 Non-Conformances and Defects

Where NCR's and Defect notifications are issued, the *Supplier* acknowledges receipt within 48 hours and proposes corrective and preventive actions to the *Supply Manager* as per the contract response period. The corrective and preventive actions will include the implementation and completion dates. Progress on all NCR's and Defect notifications issued to the *Supplier* must be reported to the *Supply Manager* on monthly basis.

The *Supplier's* Quality Manager keeps a register of all NCR's and Defect notifications issued. Deviations from the Contract are treated as a non-conformance. Records of NCRs and Defect notifications are kept and form part of the data book records.

During the contract execution phase, the *Supplier* will be monitored by the *Supply Manager* for performance on quality related aspects. The monitoring will be in the form of audits and assessments.

5.8 Invoicing and payment

Within one week of receiving a payment certificate from the *Supply Manager* in terms of core clause 51.1, the *Supplier* provides the *Purchaser* with a tax invoice showing the amount due for payment equal to that stated in the *Supply Manager's* certificate.

The *Supplier* shall address the tax invoice to *Purchaser* and include on each invoice the following information:

- Name and address of the *Supplier* and the *Supply Manager*;
- The contract number and title;
- *Supplier's* VAT registration number;
- The *Purchaser's* VAT registration number.
- Description of *goods* and *services* provided for each item invoiced based on the Price Schedule.
- Total amount invoiced excluding VAT, the VAT and the invoiced amount including VAT.
- The invoice is to be submitted to invoiceseskomlocal@eskom.co.za once confirmed with the payment certificate.

5.9 Contract change management.

Contract change management shall be done as per the NEC Supply Contract compensation event process.

5.10 Records of Defined Cost, payments & assessments of compensation events to be kept by the *Supplier*.

The *Supplier* is required to keep any records of Defined Cost. Access for the *Supply Manager* shall be provided in hard copy or electronically.

6 Procurement

6.1 Subcontracting

6.1.1 Limitations on subcontracting

The *Supplier* may sub-contract specialised work and shall not subcontract more than a 25% of the whole of the contract.