Project Name: **Design, manufacture, Procure, installation, and commissioning of Duvha Power Station Effluent system upgrade for a period of 22 (Twenty-two) months**

Contract period – 22 (Twenty-two) Months

Contract Number : N/A

Company : N/A

Project Address: Duvha Power Station, Witbank

Eskom Contract's Manager/End User
Name: Nokwazi Base

Signature .....
Date: .....

Eskom's OHS Manager
Name: Stephina Matsebe

Signature .....
Date: …….....

Eskom's OHS Officer

Name: Ephraim Ngoato

Signature .....
Date..03/06/2025.....

Table of Contents

1. INTRODUCTION

Eskom's responsibility and commitment is to ensure a safe working environment is in line with its Safety, Health, Environmental, and Quality (SHEQ) Policy and applicable legislative obligations. This OHS specification is Eskom Generation's minimum requirements which are required to be met for the duration of the contract period by contractors/suppliers and, where required, the delivery organisation. The contractor is expected to develop an OHS plan that meets these requirements as well as all the relevant applicable legislation that they conform to. Eskom in no way assumes the contractor's legal responsibilities and liabilities. The contractor is and remains accountable for the quality and execution of their health and safety programme for their employees and appointed contractor employees. This OHS specification reflects minimum requirements and should not be construed as all-encompassing.

Note 1: All the requirements listed hereunder are in relation to the contract and do not supersede or replace any organizational OHS requirements.

Where requirements listed are already in place, then the organizational requirements must be taken cognisance of and listed in the respective OHS plans. If there are any additional Eskom and/or legislative requirements listed in the OHS specification, then these must be addressed.

2. SUPPORTING CLAUSES

2.1 SCOPE

This OHS specification lists the legislative and Eskom requirements and, where applicable, any requirements pertaining to local authorities, municipal by-laws, or environmental legislation that must be met by the contractor.

2.1.1 Purpose

This document will provide a standardised approach to the compilation of OHS specifications throughout Eskom Generation business for contracts, standards, and NEC 3.

2.1.2 Applicability

This OHS specification is applicable to any contracting organisation that intends to respond to Eskom Generation's tender/enquiry with the intention of entering into a contract.

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

- Basic Conditions of Employment Act No 75 of 1997.
- Occupational Health and Safety Act and Regulations No 85 of 1993.
- OHS Act “Regulations on Hazardous Work by Children in South Africa”
- National Environmental Management Act 107 of 1998.
- National Road Traffic Act 93 of 1996.
- 32-37 Eskom Substance Abuse Procedure.
- 32-136 Contractor Health and Safety Requirements
- 240-62196227 Life- saving Rules
- 32-95 Occupational Health and Safety Incident Management Procedure
- 32-727 Eskom SHEQ Policy
- 240-62946386 Vehicle and Driver Safety Management Procedure
- 32-520 Risk Assessment procedure
- 240-150642762 -Plant Safety Regulations
- Driven Machinery Regulations ,1988 as amended
- Electrical Machinery Regulations, 2005

2.2.2 Informative

[1] Tobacco Products Control Act 83 of 1993 (Updated 2011.05.19)
[2] SANS 1186 Symbolic Safety Signs
[3] ISO 45001: Occupational health and safety management systems
[4] Constitution of the Republic of South Africa No 108 of 1996

Definition	Explanation
Appointed contractor	Means a contractor appointed by the Main contractor
Baseline risk assessment	(32-520) baseline operational risks refer to the health and safety risks associated with all standard processes and routine activities in the business
Business unit (BU)	(32-296) means any defined unit within the Eskom environment, operating as a business under a particular cost-centre number. In the context of this document and in terms of health and safety, any reference to a BU includes a defined unit within any Eskom division and its subsidiaries
Client	(OHS Act) Eskom representative (Internal – Asset Owner), also referred to as the contract administrator/custodian or agent or project manager (as defined in the contract). He/she is the person responsible for ensuring that the works or services are executed in terms of the contract, as well as adherence to legislation pertaining to the contract.
Competent person	(OHS Act) means any person having the knowledge, training, experience, and qualifications, specific to the work or task being performed, provided that, where appropriate, qualifications and training are registered in terms of the South African Qualifications Authority Act, 1995 (Act No. 58 of 1995)
Contractor	(OHS Act) means an employer as defined in section 1 of the Act who performs contracted work and includes Main contractors
Contract's Manager/End User	**Contract's Manager/End User**
Consultant	means a person providing professional advice
Controlled disclosure	controlled disclosure to external parties (either enforced by law or discretionary)
Duty of care to the environment	(32-136) anybody who causes or 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. If such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, such person must minimise and rectify such pollution or degradation of the environment
Employee	(OHS Act) means, subject to the provisions of subsection (2), any person who is employed by or works for an employer and who receives or is entitled to receive any remuneration or who works under the direction or supervision of an employer or any other person
Employer	(OHS Act) means, subject to the provisions of subsection (2), any person who employs or provides work for any person and remunerates that person or expressly or tacitly undertakes to remunerate him/her, but excludes a TES (ex labour broker) as defined in section 1(1) of the Labour Relations Act 1956 (Act No. 28 of 1956)

Definition	Explanation
Environment	(32-94) means: a) the land, water, and atmosphere of the earth; b) micro-organisms and plant and animal life; and c) any part or combination of (a) and (b) and the interrelationships among and between them, and the physical, chemical, aesthetic, and cultural properties and conditions of the foregoing that influence human health and well-being
Eskom requirements	Eskom requirements flowing from directives, policies, standards, procedures, specifications, work instructions, guidelines, or manuals
Fall protection plan	(OHS Act) means a documented plan of all risks relating to working from an elevated position, considering the nature of work undertaken, and setting out the procedures and methods to be applied in order to eliminate the risk
Hazard identification	(OHS Act) means the identification and documenting of existing or expected hazards to the health and safety of persons, which are normally associated with the type of construction work being executed or to be executed
Occupational Health and safety file	(OHS Act) means a file or other record in permanent form, containing the information required in relation to the contract.
Health and safety plan	(OHS Act) means a document plan that addresses hazards identified and includes safe work procedures to mitigate, reduce, or control hazards identified
Occupational Health and safety specification	(OHS Act) means a document specification of all health and safety requirements pertaining to associated to a contract, so as to ensure the health and safety of persons.
Occupational Health and safety requirements	means comprehensive health and safety requirements for a contract, project, site, and scope of work. This specification is intended to ensure the health and safety of persons, both workers and the public, and the duty of care to the environment. The health and safety requirements must be specific to each contract, project, site, and scope of work
Lifesaving Rules	(240-62196227) a rule that, if not adhered to, has the potential to cause serious harm to people
Medical Certificate of fitness	(OHS Act) means a certificate valid for one year, issued by an occupational health practitioner, issued in terms of the regulations, whom shall be registered with the Health Professions Council of South Africa
Medical surveillance	(OHS Act) means a planned programme or periodic examination (which may include clinical examinations, biological monitoring, or medical tests) of employees by an occupational health practitioner or, in prescribed cases, by an occupational medicine practitioner
Method statement	(OHS Act) means a written document detailing the key activities to be performed in order to reduce, as reasonably as practicable, the hazards identified in any risk assessment
National Enquiries/contracts	sourcing of services providers/contractors at the divisional level and not at BU level thorough tendering, request for price etc

Definition	Explanation
Organisation	may be defined as a group of individuals (large of small) that is cooperating under the direction of executive leadership in accomplishment of certain common objects
Pre-job meetings	(34-227) means a meeting that is held prior to the commencement of the day's work and that is attended by all the relevant employees associated with the work task
Main contractor	(In the text of this document) Means an employer, as defined in section 1 of the OHS Act, who intends to tender for or has signed a contract with Eskom for services rendered.
Provincial director	(OHS Act) means the provincial director as defined in Regulation 1 of the General Administrative Regulations under the Act
Responsible Manager	Is a Manager of a department, section or operating/business unit who has been appointed as part of the Eskom delegation of authority process with the aim to assist the applicable 16(2) assigned person in executing his/her duties in terms of the Occupational Health and Safety Act
Risk assessment	(OHS Act) means a programme to determine any risk associated with any hazard at a construction site in order to identify the steps needed to be taken to remove, reduce, or control such hazard.
Site	(34-228) means an Eskom department, unit, complex, building, specific project, work site, or the site where agents, clients, Main contractors, contractors, suppliers, vendors, and service providers provide a service to Eskom, directly or indirectly
Service provider	any private person or legal entity that provides any service(s) to Eskom for compensation
Subsidiary	(32-94) an enterprise controlled by another (called the parent) through the ownership of greater than 50% of its voting stock
Supplier	(32-1034)means a natural or legal person who renders a service and may include the following current or potential supplier vendor, contractor, consultant
Task	(34-227) a segment of work that requires a set of specific and distinct actions for its completion
Toolbox talks	(34-227) where the team leader, after conducting pre-task planning, shares all the tasks at hand and discusses task allocation, the identified risks, and the control measures with all his/her team members on site before commencing a specific task and documenting the agreed strategy. (This shall be done to ensure common understanding of the tasks, risks, and control measures required.)
The Act	(OHS Act) means the Occupational Health and Safety Act No. 85 of 1993, as amended, and the Regulations thereto
Visitor	any person visiting a workplace with the knowledge of, or under the supervision of, an employer.

2.4 ABBREVIATIONS

Abbreviation	Description
BU	Business Unit
CE	Chief Executive
COID Act	Compensation for Occupational Injuries and Diseases Act
DMR	Driven Machinery Regulations
DEL	Department of Employment and Labour (Inspection and Enforcement services – Provincial office)
EP	Emergency Preparedness
EAP	Employee Assistance Program
ERfW	Environmental Regulations for Workplaces
GAR	General Administrative Regulations
GSR	General Safety Regulations
HCS	Hazardous Chemical Substances
LDV	Light Delivery Vehicle
MSDS	Material Safety Data Sheets
OHS Act	Occupational Health and Safety Act and Regulations, 85 of 1993
OHS	Occupational Health and Safety
O&M	**Operating and Maintenance**
LoG	(COID) Letter of Good Standing
RSA	Republic of South Africa
SABS	South African Bureau Standard
SANS	South African National Standard

Section 37(2) of the OHS Act requires Eskom to sign an agreement and include it in the OHS file for evaluation prior to the start of work. OHS department will issue the 37(2) agreement to the project manager/end user who will facilitate the signing of the document by Eskom and contractor representatives.

3. DOCUMENT CONTENT

3.1 SCOPE OF WORK

SUMMARY OF THE

SCOPE

Refer attached detailed scope of work:

The scope of *work* describes the major activities and plant and material that falls within the scope of the *Contractor*. The *Contractor* shall be responsible to ensure that all the activities are carried out and all equipment, plant and materials are supplied to complete the *works* in every respect.

(1) The *works* comprises the following:

a) Detail Design
b) Manufacture and procurement
c) Delivery to and offloading at site
d) Installation
e) AKZ labelling
f) Corrosion and Ultra Violet (UV) protection
g) Interfacing with existing plant
h) Commissioning, testing and optimisation
i) Training of *Employer*'s personnel in the operation and maintenance of the system
j) Documentation as specified
k) Quality management for all activities
l) Safety and plant signage
m) Storage on site
n) HAZOP study

(2) All plant, material and equipment is required to be designed for operation in a power plant environment with a minimum requirement for maintenance and operator intervention.

(3) It is not the intention of this scope of work to describe in detail all the activities the *Contractor* shall be required to carry out, nor to describe in detail everything to be supplied by the *Contractor*.

(4) The *Contractor* shall design according to the requirements of this Technical Specification.

(5) The *Contractor*'s design is required to be accepted before any site work or procurement of plant and materials begins.

1.1.1 *Contractor's* scope for the operating, control and maintenance philosophy

The *Contractor* shall be responsible for the provision of a detailed operating and control philosophy as per

the *Contractor*'s detailed design of the *works* and submits this to the *Project Manager* for acceptance prior to commencing with the construction activities.

The *Contractor* shall provide a detailed maintenance philosophy for the plant which includes a preventative maintenance plan for the plant as a whole and for each component within the plant. The *Contractor* shall provide a critical spares list for the *works*. The *Contractor* shall also provide the necessary periodic maintenance inspections required for the plant together with the maintenance philosophy.

1.1.2 General Design and Manufacturing Process Constraints

The *Project Manager* reserves the right to carry out any checks of his/her own on any plant, equipment and materials that have been delivered to site for the *works*.

The *Contractor* shall be fully responsible for the interfacing and tie-ins with existing plant and equipment.

1.1.3 Engineering Design Phase

The *Contractor* shall provide the detailed design for the *works* to the *Project Manager* for acceptance prior to procurement of the plant and materials. The *Contractor* shall only proceed with procurement of the plant and materials once the *Project Manager* has accepted the detailed design provided by the *Contractor.*

The design of the upgraded effluent system that forms part of the design for the *works* shall conform to the following requirements:

1.1.3.1 Mechanical Design

1.1.3.1.1 Design basis for the three upgraded pumps

The *Contractor* shall:

- Provide a hydraulic simulation as part of his detailed design package.
- Remove the existing installed pumps.
- Supply and install the upgraded effluent pumps #1, #2 and #3 that conforms to the specification detailed in the technical data sheet provided in Appendix D.
- Supply and install a new base plate with drainage gutter for all three upgraded effluent pumps, coated with a protective coating in accordance with the *Employer*'s corrosion protection specification.
- Supply and install the discharge and suction valves for all three effluent pumps.
- Supply and install of the suction and discharge non-return valves for all three effluent pumps.
- Supply and install the 300-micron stainless steel mesh for the suction strainer for all three pumps.
- Supply and install the pump priming pipework for all three pumps.
- Supply and install the local pressure gauges for suction and discharge pipework.

1.1.3.1.2 Design basis for Valves

The *Contractor* shall produce a valve schedule and data sheet on completion of the system design and submit it to the *Project Manager* for acceptance.

The *Contractor* shall comply with the following minimum requirements:

- All valves are required to be arranged and positioned at accessible locations to ensure safe, efficient and easy operation and maintenance. The *Contractor* shall provide clear access to the valve hand wheels and avoids valve hand wheels being tucked behind other valves or components.
- All valves are required to be of approved design and manufacture and those of similar size, make, and duty shall be interchangeable with one another.
- The face of each hand wheel is required to be clearly marked with the words “OPEN” and “SHUT’ with relevant direction arrows adjacent to it.
- The *Contractor* shall supply the following minimum valve information to the *Employer:*
    - Recommended spares list (with full technical specification details).

- Valve assembly and dis-assembly procedure.
- Maintenance procedure.

- The contractor shall supply and install the effluent sump interconnection lifting liner valves

The *Contractor* shall ensure that local support for the valves; spares availability and short lead times in cases of emergency are available.

Employer prefers wafer type butterfly valves for purposes of isolation. Where the *Contractor* specifies valves not preferred by the *Employer*, it may be accepted by the *Employer* if the valves are a locally supplied product. An application for the deviation shall be submitted to the *Project Manager* for approval.

- All valves are required to be manually operated.
- All manual valves shall be lockable.
- All valves are required to be for isolation purposes only, no control shall be needed, and vent valves, including non-return valves shall need to be installed.
- All valves are required to be new and compatible for use with the stainless steel pipes.

1.1.3.1.3 Design basis for Pipes

The first section of pipes shall be constructed of stainless steel as indicated on the drawing 0.57/58521 SHT 2 (see Appendix B) and the remaining section shall be required to be UV resistant High density polyethylene (HDPE), the sizes and schedule are detailed in Table 1 (see Appendix A).

The design of the pipelines shall conform to the following:

- The total upgraded pipeline distance shall be verified by the *Contractor*. The approximate distance is 1.6 km.
- The *Contractor* shall design according to the pipeline details provided in Appendix A.
- The stainless-steel section of the upgraded pipeline shall correspond to the length of the carbon steel pipeline section of the existing effluent discharge pipeline. The carbon steel section of the existing effluent pipeline is estimated to be 100m. The *Contractor* shall verify and cater for the length of stainless-steel piping required.
- The UV resistant HDPE section of the upgraded pipeline shall correspond to the length of the HDPE section of the existing effluent discharge pipeline. The HDPE section of the existing effluent pipeline is estimated to be 1.5 km. The *Contractor* shall verify and cater for the length of UV resistant HDPE piping required.
- The above ground section of the UV resistant HDPE section of the upgraded pipeline shall correspond to the above ground length of the HDPE section of the existing effluent discharge pipeline. The above ground HDPE section of the existing effluent pipeline is estimated to be 700 m. The length of the above ground UV resistant HDPE section of the upgraded effluent pipeline shall be verified and catered for by the *Contractor.*
- The buried section of the UV resistant HDPE section of the upgraded pipeline shall correspond to the buried length of the HDPE section of the existing effluent discharge pipeline. The buried HDPE section of the existing effluent pipeline is estimated to be 800 m. The length of the buried UV resistant HDPE section of the upgraded effluent pipeline shall be verified and catered for by the *Contractor.*
- The existing effluent discharge pipeline re-emerges above ground in the vicinity of the high-level ash water return dam, in which the effluent is disposed of. The length of the pipe for this above ground section shall be verified and catered for by the *Contractor*.

The *Contractor* shall submit the pipe data sheets and pipe schedule and complete design to the *Project Manager* for acceptance.

The *Contractor*'s design verifies and ensures the integrity of all pipe work. The materials of construction for the pipework shall be suitable for the effluent water and environment they are in contact with.

Pipes shall be equipped with vent valves for purging of air during start-up.

The *Contractor* shall mark all pipe work associated with the *works* with the description of the medium and direction of flow clearly displayed and visible from a normal operating perspective, in accordance with the *Employer*'s specification ESKSCAAC6-0 (Specification for the identification of the content of pipelines and vessels).

1.1.3.2 Civil Design

The *Contractor* shall assess all structural supports and ensure that the supports have sufficient capacity to carry the new loads as a result of the upgrade of pumps and pipelines. Should the supports not have sufficient capacity, the *Contractor* shall be required to design a modification for the supports or replace the supports with new structures that meet the load requirements. The supports include the pump base plates, supporting ground slab and the pipeline supports.

The existing pumps are supported by a 1320mm x 620mm steel base plate fixed onto the existing concrete slab. Three upgraded pumps are to be installed, and therefore the base plates shall be designed for the new pumps by the *Contractor*. Each base plate shall support a pump and a motor. The current base plates have deteriorated over time and shall therefore be removed and replaced to accommodate the upgraded pumps.

The upgraded pipeline shall run from the upgraded effluent pumps to the high-level ash water return dam as shown in drawing No. 057/58521 Sheet 1 (see Appendix C). The upgraded pipeline shall be made up of the following sections:

1. Stainless steel: The stainless-steel section shall run above ground as stated in Section 2.2.4.1. Due to the replacement of the existing 100 mm diameter pipeline to a new 200mm diameter pipeline, the supports structures shall be assessed and modified in accordance with the requirements set out in Sections 2.2.4.2.1 & 2.2.4.2.3 below.
2. UV resistant HDPE: The UV resistant HDPE section shall run as stated in Section 2.2.4.1. The above ground section shall continue concrete sleepers and steel brackets. The buried section of the pipeline shall run underground and shall emerge in the vicinity of the high-level ash water return dam. New supporting structures shall be provided for the upgraded pipeline in accordance with the requirements set out in Sections 2.2.4.2.1 & 2.2.4.2.3 below.

1.1.3.2.1 Civil Scope

The design process shall follow the Structural Design and Engineering Standard 240-56364545, the steps below shall outline the deliverables specified:

1. Three base plates shall be designed to support the pumping system. The base plates shall be mounted on the existing concrete slab by means of anchor bolts.
2. The *Contractor* shall perform adequate calculations and design checks to show that the existing supports supporting the steel pipe section can carry the additional forces imposed by the new line. In the case where the supports are not adequate for the new load, the *Contractor* shall design for the additional supports or modify the existing supports to support the new loads.

3. New supports shall be designed for the UV resistant HDPE section that is currently supported by steel brackets. The same or similar supports shall be designed along the existing line as shown by drawing No. 0.57/58521 Sheet 1 (see Appendix C).
4. The upgraded line shall go below ground at approximately the same point where the old line is going underground.

1.1.3.2.2 Design Requirements for Pump Supports

1. The new base plates shall be designed to support the total mass of the upgraded pumps and motors and to accommodate all of the forces that shall be exerted onto them by the motors and pumps.
2. Base plate support shall be analysed according to the pump loading calculations performed by the *Contractor*. All designs shall comply with the Eskom Standard 240-56364545 “Structural Design & Engineering Standard.
3. The *Contractor* shall conduct a structural analysis to ensure that the concrete slab that supports the pumps has sufficient capacity to support the forces from the upgraded pumps.
4. All calculations and structural analyses performed shall be submitted to the *Project Manager* for acceptance.

1.1.3.2.3 Design Requirements for Pipe Supports

1. The design and calculations of the pipe supports shall be based on Eskom Standard 240-56364545 “Structural Design & Engineering Standard”
2. All piping and valve hangers, brackets and supports shall be arranged in such a manner that they do not obscure the view of any instrumentation or obstruct safe and normal access.
3. All metal surfaces of pipe supports are hot dip galvanised to ensure sufficient resistance to corrosion is provided.
4. All welds are designed in accordance with SANS 10162
5. Above ground UV resistant HDPE piping is placed on a continuous support structure which is supported by structural members, to prevent pipe bending. The *Contractor* shall conduct calculations to determine the forces acting on the structural members from moving and from stationary effluent in the pipeline. Forces acting on the structural members and the spacing thereof need to be determined and designed for.
6. The *Contractor* shall be responsible for all sub surface investigations and shall include in his price, all the costs associated with the sub surface investigation and appropriate laboratory & field tests necessary to determine the geotechnical properties of the sub soil to withstand all loading conditions imposed.
7. The *Contractor* shall seek acceptance of the detailed design from the *Project Manager* for the applicable design
8. Only drawings and designs accepted by the *Project Manager* shall be used for construction

1.1.3.2.4 Design Requirements for buried pipes

1. The trench designs shall be performed to the following design standards; SANS 10102-1&2.
2. The installation conditions shall be selected based on the conditions of site as outlined in the SANS 10102-1&2. Bedding class shall be made or selected in accordance with SANS 2001 LB. The installation or burying of the pipe shall be such that the load distribution is achieved as close

to hydrostatic loading as possible. The installation procedures used during construction shall not compromise the design.

3. All backfilling shall be completed as outlined in SANS 10102, as per the *Contractor's* design specification and for acceptance by the *Project Manager.*
4. The *Contractor* shall ensure that the *works* does not interfere with the existing sub surface services. To ensure this, the *Contractor* shall conduct a geophysical testing to locate all existing services along the route of the new line.

1.1.3.3 Geotechnical Investigation Scope of *works*

A geotechnical investigation is required for the proposed pipeline route (see drawing No. 057/58521 Sheet 1 in Appendix C). The existing HDPE pipeline route consists of the following sections:

- Section 1 – Above ground supported by concrete sleepers
- Section 2 – Above ground supported by steel brackets
- Section 3 – Buried
- Section 4 – Above ground supported by steel brackets

The Study is required along Sections 2, 3 and 4, which constitute an approximate length of 1.4km. The *Contractor* shall verify the length of Sections 2, 3 and 4 for the Study.

The new pipeline shall run alongside the existing pipeline route. Therefore, the geotechnical investigation shall need to occur in 2 (two) phases.

The first phase of the geotechnical investigation shall comprise of geophysical testing to determine the above ground and sub-surface route. The second phase of the geotechnical investigation shall comprise of in-situ and laboratory tests for the design of pipeline supports for the upgraded pipeline route. The upgraded pipeline size is 200NB.

A site walk down is required prior to the commencement of testing. The purpose of this activity shall be to determine a proposed testing layout taking into account possible access restrictions for required plant equipment. The viability of the identified testing locations shall be confirmed based on the results of the geophysical testing. The site walk down is attended by the *Contractor* and the *Employer*.

The scope of work for the proposed geotechnical testing including report writing is outlined below.

The *Contractor* shall make written recommendations to the *Project Manager* should he/she be of the opinion that further or additional tests may be necessary in order to fulfil the requirements of the scope.

1.1.3.3.1 Desktop Study

1. The *Contractor* shall conduct a desk study review of all available existing geotechnical information and regional geological information available for the proposed testing areas.

1.1.3.3.2 Geophysical Testing

1. Geophysical tests are adopted to locate the sub-surface pipeline route for the UV resistant HDPE section of the pipeline as set out in Section 2.2.4.1.
2. Geophysical tests are adopted to determine the above ground route for the UV resistant HDPE section of the pipeline as set out in Section 2.2.4.1.
3. Geophysical Testing shall be implemented to a depth of 3-5 metres.

4. Prior to implementation of geophysical testing, the *Contractor* shall conduct a site walk-over to determine if the ground conditions shall be conducive to the type of geophysical testing selected.
5. The *Contractor* shall make a written recommendation to the *Project Manager* should he/she be of the opinion that the Geophysical tests be implemented to a greater depth than is outlined in the scope.
6. The Geophysical testing is implemented through the proposed above ground and sub-surface route (See drawing No. 057/58521 Sheet 1 in Appendix C)

Geophysical testing shall aim to minimize the *Employer's* risk by onset mitigation against intersection of existing underground services.

All Geophysical test findings shall be confirmed by hand excavation (where applicable).

The geophysical test results shall determine the depth of test pits for the sub-surface and above ground pipeline.

1.1.3.3.3 Test Pitting

1. Excavation and supervision of a maximum of 6 (six) test pits.
2. The number of test pits may be amended upon assessment of the ground condition.
3. Test pits for the proposed 600m above ground pipeline route are excavated to a maximum depth of 3m or as determined by the geophysical testing results
4. Test pits for the proposed 800m sub-surface route are excavated to a depth as determined by the geophysical testing results.
5. All test pits are profiled by a professionally registered engineering geologist/geotechnical engineer according to "Guidelines for Soil and Rock Logging in SA, 2nd Impression" (Brink and Bruin, 2002).
6. All test pits are reinstated using soils removed from pits following completion of soil profiling and sampling.

The *Project Manager* reviews and accepts the proposed test pit layout prior to excavation.

No personnel shall enter test pits of equal or greater than 1.2m depth.

1.1.3.3.4 Dynamic Cone Penetrometer (DCP)

1. DCP tests are conducted along the entire proposed 1.4km pipeline route.
2. A maximum of 6 (six) DCP tests are conducted.
3. DCP tests are conducted adjacent to test pit excavations and aim to delineate the overall ground stiffness profile.
4. DCP tests results shall be evaluated by the *Contractor* and used to determine Estimated Allowable Safe Bearing Capacity (EASBP) of the ground in 300mm intervals.

1.1.3.3.5 Tests on Soil Samples

1. 3 x Foundation Indication with Hydrometer
2. 3 x Oedometer
3. 3 x Double Oedometer

4. Youngs Modulus
5. Poissons Ratio

1.1.3.3.6 Reporting Deliverables

1. After completion of fieldworks and laboratory testing, the *Contractor*'s professional engineering geologist or geotechnical engineer shall prepare and submit a consolidated geotechnical report.
2. Factual information and interpretive results shall be clearly distinguished.
3. All assumptions shall be included.
4. All field/raw data, laboratory data and calculation files shall be included within the appendices.
5. The geotechnical report shall include:
   a) Site Location
   b) Site Description
   c) Project Description
   d) Regional Geology
   e) Local Geology and Geohydrology
   f) Description of the fieldwork including equipment
   g) Surface and Sub-surface conditions as determined by the fieldwork and laboratory testing
   h) Classification and description of all properties pertinent to the soil profile
   i) Discussions and calculations of allowable bearing capacities and settlements (where applicable)
6. Recommendations regarding the required pipe supports for the for the pipeline sections as set out in Section 2.2.4.1.

1.1.3.4 Electrical Design

The *Contractor* is responsible for designing procurement, manufacture, transportation, delivery, offloading, commissioning, testing. The required absorbed mechanical power requirements are given as 23kW, 40A each while the existing installed motors are rated 30kW, 56A each. The existing switchgear feeders and protection circuits (fuse switch: 125A) including cables (95mm^2) were sized based on the 30kW, 56A motors. Therefore, the required upgrade for the effluent system shall not have an impact on the existing electrical network. The currently installed effluent plant motors (30kW, 56A) are fed from the 400V Water Plant Boards 1A and 2A respectively.

The *Employer* will provide the three existing effluent pumps circuits to the *Contractor*. The *Contractor* must retain the current protective equipment, such as power fuses, cables etc unless it jeopardizes the protection of the new effluent pump motors. If deemed necessary, the *Contractor* to resize both power circuit and control circuit components to accommodate the new motors. The *Contractor* shall provide the type tests results of all the motors to be installed prior to delivering the motor to site. The type test results shall be sent to the *Employer* for approval after the *Employer* has witnessed the test in the *Contractor's* workshop or any place that is recommended by the *Contractor.* All electrical drawings shall be prepared/drawn by the registered the professional ECSA electrical technologist/engineer. The *Employer* is responsible for taking the permits for the *Contractor* to be able to work on the isolated boards. All the modification drawings shall be sent to the *Employe*r prior to commence of the work by the *Contractor* for approval.

The following circuits need to be modified:

1) 380V WTP board 1A: Effluent sump pump standby 2 Circuit Number 17
2) 380 WTP board 1A: Effluent sump pump 1 Circuit Number 18
3) 380 WTP board 2A: Effluent sump pump 3 Circuit Number 21

As per 240-57617975 standard the following information shall be submitted to the *Employer* for a review and approval prior to scheduled delivery:

a) A copy of installation, operating and maintenance manual, Information contained in this manual shall include but not limited to:

-Installation instructions

-Operating instructions, including starting limitations

-Maintenance requirements and data

-Instructions on how to completely dissemble and assemble the motor for major inspections, repairs and overhauls.

-Replacement parts catalogue

-Storage requirements

-Trouble shoot guide

b) Required type test certificates and routine certificates

c) Signed Torque vs speed curves and current vs speed curves, Signed efficiency and power factor vs load curves.

No manufacturing or delivery of motors should be allowed before the designs are finalised and accepted by the *Employer.*

1.1.3.5 Control and Instrumentation Design

The *Contractor* shall ensure that:

The upgraded effluent pumps shall be interfaced with the existing WTP effluent plant control system. Nothing shall be changed or upgraded from the existing effluent C&I infrastructure.

1.1.3.6 Method of Construction

The existing effluent system cannot be decommissioned until the system upgrade has been constructed, since it is integral to the operation of the entire Power Station. As such, the *Contractor* shall be required to submit a detailed constructability assessment of how to carry out the *works* to the *Project Manager*. The following construction methodology is suggested by the *Employer*:

The upgraded effluent system pipework shall be installed in parallel to the current effluent system pipework routing. The installation of the new pipework shall not interfere with the operation of the current effluent system line to ensure that system downtime is avoided.

The effluent system has three base plates at the effluent sump upon which three effluent sump pumps were designed to be located. The system currently has one working pump and the remaining two base

plates are vacant. Two of the upgraded pumps shall be installed on the vacant base plates without interfering with the operation of the single original pump.

Once the new pipework and the two upgraded pumps have been installed and connected, the single original pump shall be switched off. The two upgraded pumps shall then start operating. The original effluent system pump and piping system shall then be decommissioned. Once the original effluent pump is removed, the third upgraded pump shall be installed and connected to the common effluent system pipeline.

A copy of the scope of work must be retained by the contractor.

Note: The contractor who will be awarded this contract will be known as the **"Main contractor"** and any contractor appointed by the Main contractor will be known as the **"Appointed contractor"**

3.2 LEGAL COMPLIANCE

3.2.1 Section 37(2) (Legal) Agreement

A section 37(2) agreement must be signed between Eskom 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.

3.2.2 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:

1. *being protected from exploitative labour practices.*
2. *not be required or permitted to perform work or provide services that*
3. *are inappropriate for a person of that child's age; or*
4. *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. Eskom does not condone the use of child labour and, therefore, all effort must be exercised, and child labour should not be used.

3.2.3 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.

3.2.4 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).
- National Road Traffic Act 93 of 1996.
- Compensation for Occupational Injures and Diseases Act.
- SANS Standards –Contractor shall use the relative standards applicable to the project.

3.3 ESKOM REQUIREMENTS

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

3.4 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.

3.5 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.

3.6 Main contractor

The Main contractor and all appointed contractors must appoint competent workers who will comply with the OHS Act for the duration of the contract. Before requiring appointees to accept an appointment, the employer must ensure that they have received appropriate training and/or information about their responsibilities. The relevant statutory appointments must be made in compliance with the OHS Act's

criteria, which include appointing a qualified individual to the appropriate roles. The following should be included in the statutory appointments, but not limited to:

- OHS Act General Administrative Regulation 9(2) – Incident Investigator
- OHS Act Regulations for Hazardous Chemical Agents Co-coordinator
- OHS Act: Pressure Equipment Regulations 11 & 12 Portable Gas Container Inspector
- OHS Act Electrical Installations Regulations - Electrician
- OHS Act General Safety Regulations 3(4) – First Aider

3.6.1 Non statutory appointments

- Eskom requirement – Emergency Co-ordinator
- Eskom Site Manager
- Eskom Site Supervisor
- Risk Assessor
- Safety Officer - full-time

All OHS Appointments shall be accompanied by proof of training /certificates. Certificates may be verified by the OHS professional for validity. Invalid certificates will be declined.

3.7 ESKOM LIFE-SAVING RULES

1. Eskom places a high value on health and safety and urges every organization that undertakes work for Eskom to do the same.

2. Eskom has developed six life-saving guidelines that will apply to all Eskom employees, agents, consultants, and contractors. Any Eskom 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.

Duvha has added the last two life saving rules - no7 and no8.

3. If any contractual work (including delivery of any product) is to be undertaken on Eskom 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:	**ENSURE SAFE LIVE WORKING** **Ensure all live work basic principles are adhered to, as outlined (for the method being used) in the High Voltage Live Working Standard for the respective division.** **Observe and maintain the minimum approach distance (MAD).** **Only perform live work (never mix live and dead work on the same site at the same time Refer to ORHVS Section 7 and 5 handouts respectively).**
Rule 7	**Wear the correct Personal Protective Equipment (PPE) at all times. (Duvha P/S additional rule)**
Rule 8	**Report all injuries.** All work-related injuries shall be reported before end of shift. **(Duvha P/S additional rule)**

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 Eskom facility returns home to their families safely.

3.8 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 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 site will be subjected to ad hoc alcohol testing if the BU has self-alcohol testing equipment.
5. Contractors are required to develop their own manual and test their own employees for alcohol on a regular or company specified basis.

6. Test results must be marked "Confidential" and kept in the employee's personal file.
7. Eskom's life-saving rules are included in the induction process.

3.9 CONTRACTOR ORGANISATIONAL STRUCTURE

3.9.1 Main Contractor Organogram

The Main contractor must provide an organisational organogram on the company's letter head related to this contract, depicting all the levels of responsibility from the CE down to the supervisors responsible for the contract. List the relevant positions held, names of appointees, legal appointments and the Organogram must be signed off by the company's 16(1) or 16 (2).

The Main contractor must ensure that all appointed contractors comply with this requirement. The Main contractor is responsible for keeping copies of all the organograms' as well as submitting them with the OHS plan. All organograms shall be updated timeously when appointments are changed. Contents of the OHS Plan shall include provision and maintenance of portable ablution facilities, related documents for this facility shall be in place with t=regards to maintenance and disposal of human excreta.
This diagram must be kept up to date and filed in the project OHS files.

3.9.2 Appointed Contractor/s Organogram

1. Appointed contractors are required to compile their company organogram for the project on the company's letter head, listing the reporting structure from their CE down to their project supervisors. The diagram must list the names, positions held, any appointments made and must be signed off by the company's 16(1) or 16 (2).
2. This diagram must be kept up to date, a copy of which must be given to the Main contractor and a copy filed in the relevant project OHS files.
3. This diagram must be kept up to date and filed in the project OHS files.

3.10 ROLES AND RESPONSIBILITIES

Commitment

Visible commitment is essential to providing a safe work environment. Managers, supervisors and employees at all levels must demonstrate their commitment by being proactively involved in the day to day operations, in particular the Occupational Health and Safety aspects of any project / contract. Legislation requires that each employee must take reasonable care of themselves and their fellow workers, from management level down to the lowest employee level.

3.10.1 Main contractors and appointed contractors

Note 1: Most of the roles and responsibilities listed apply to both Main contractors and any appointed contractors. Where some of the listed do not apply to both, then the specific responsibilities will be listed and titled. The contractors shall:

1. Carry out all duties as listed in section 8, 9 and 10, the various other regulations that form part of the OHS Act and Regulation 7 of the Construction Regulations.
2. Carry accountability and responsibility for the safety and health of their employees and their

appointed contractors within their working area, as contemplated by section 37(2) of the OHS Act;

3. Shall keep a record of all employees including the appointed contractor employees, including date of induction, relevant skills and licenses and be able to produce this list at the request of the Eskom Project Manager.
4. Ensure that all their appointees are made aware of their accountabilities and responsibilities in terms of their appointment and that they advise and assist these appointees in the execution of their duties.
5. Ensure that the minimum legislative, regulatory and Eskom OHS requirements are complied with on all work sites.
6. Give the Eskom project managers and line managers / responsible managers their full participation and cooperation.
7. Compile a OHS (Occupational health and safety) file where all relevant health and safety records must be kept for each work site.
8. The Main contractor must provide the project manager with the Compensation Commissioner's valid letter of good standing before the commencement of work and any future renewal letters obtained during the contract for record-keeping purposes. The letter of good standing shall reflect the name of the contractor's company. Similarly, the Main contractor must provide the Eskom project manager with all the valid letters of good standing from their appointed contractors.
9. Contractors must provide the Main contractor with a certified copy of the Compensation Commissioner's valid letter of good standing before the commencement of work and any future renewal letters obtained during the contract for record-keeping purposes. The letter of good standing shall reflect the name of the contractor's company.
10. Appoint competent staff to perform the project work and ensure that all employees are trained in the health and safety aspects relating to such work and that the employees understand the hazards associated with all other work being carried out on the project.
11. Ensure that all employees are conversant with all relevant work procedures and that they adhere to such procedures. Similarly (without removing the appointed contractors' responsibilities), ensure that their appointed contractors and their employees are conversant with all relevant work procedures and that they adhere to such procedures.
12. Co-ordinate the activities of all the appointed contractors in the interests of safety and health;
13. Ensure that their contractors (whom they intend appointing) have made detailed provision for the cost of safety and health measures throughout the project.
14. Stop his /her employees and any appointed contractors if such work poses a threat to the health and safety of persons or a risk of degradation to the environment.
15. Take reasonable steps to ensure cooperation between all their appointed contractors.
16. Ensure that Eskom OHS requirements are communicated to the appointed contractors, evaluate, and assess the appointed contractors OHS files. Only appoint contractors who are competent to do work, have satisfied the OHS compliance requirements and satisfied that the contractor has the necessary competencies and resources to perform the work safely.
17. Appoint full-time competent employees in writing to supervise the performance of all specified work throughout the contract period.
18. Ensure that the supervisor or manager do not supervise work on any site other than the site for which such supervisor has been appointed for.
19. Not victimise or dismiss employees, by virtue of the employee's divulging health and safety information or suspecting such information has been divulged, in the interests of health and safety requirements.
20. Follow a process of disciplinary action if any of their employees or their appointed contractor employees have transgressed any of the requirements of the health and safety specification, safety and health plans, site rules or any other requirements.
21. Before the commencement of work, review the submitted baseline risk assessments to include site or emerging risks. This should be done by a competent person appointed in writing with a

view to identify hazardous and potentially hazardous work operations.

22. Ensure that pre-task risk assessments are conducted and documented daily and prior to the starting of any new task, irrespective of whether it is a repetitive task or not.

23. Must ensure that an organisation medical surveillance programme for the duration of the contract is in place and maintained.

24. Prior to having pre-employment and periodic medicals fitness examinations conducted, person/man job specifications must be compiled and handed to the occupational health practitioner.
25. Issue risk-based personal protective equipment (PPE) as a measure of last resort to their employees, inspect such equipment regularly and ensure recipients of PPE are trained in the proper use, care and where necessary, the maintenance of PPE;
    Note: should the Main contractor or his/her appointed contractors entertain visitors on site, they will be held responsible for the provision and wearing PPE.
26. Must have a substance abuse program which must be in line with Eskom requirements.
27. Ensure that all incidents are reported and investigated timeously by competent incident investigators as and aligned with 32-95 requirements.
28. Be involved in all of their appointed contractor's incident investigations.
29. When appointing contractors, advise the project manager in writing timeously and obtain his/her approval prior to them commencing work.

3.10.2 Contractor site supervisor

The contractor site supervisor must be trained in the following:

- HIRA, Incident investigation training (Should one not already appointed) and OHS Legal liability

Must:

1. Be competent to perform the required supervisory tasks;
2. Ensure their employees and all appointed contractors comply with the required statutory and Eskom project requirements;
3. Inspect all work done by the contractors to ensure adherence to Eskom's standards and specifications
4. Conduct follow-up inspections to ensure findings are closed out and preventative action is in place.
5. Monitor contractors for adhere to statutory requirements and safety standards.
6. Monitor contractors overall OHS performance on site in order to achieve excellent results
7. Discuss all OHS related problems with the relevant contractor management timeously in the first instance and thereafter the Eskom project manager in the second instance relating to procedure requirements, non-conformances identified, corrective actions, audits and inspection schedules.
8. Continual liaison between the Main contractor, appointed contractors and employees.
9. Ensures that employees and appointed contractors are aware of latest standards, procedures, work instructions and safety regulations issued by Eskom:
10. Conduct site Inspections for compliance to OHS requirements and compiles the relevant inspection reports.
11. Submit the observation reports to the relevant management.
12. Submit the required OHS reports communicated by Eskom e.g., manpower numbers, incident statistics report etc
13. Participate in all appointed contractor incident investigations.
14. Participate in the Main contractor's emergency preparedness planning.
15. Ensure that their own employees and those of any appointed contractor are competent to

perform the tasks assigned.

16. Issue site instructions on behalf of the Main contractor where and when the appointed contractors deviate from safety requirements.

.10.3 Contractor Health and Safety officer -part time -Once a week

- The contractor health and Safety officer must be trained in the following:
- SAMTRAC, HIRA, Incident investigation training, OHS Legal liability, Training, knowledge and understanding of ISO 45001, Minimum work experience 2yrs,

3.11 Project Risk Assessment

It is a legal requirement in terms of Section 8 (2)(d) of the OHS Act for an employer to carry out risk assessments, to establish which risks and hazards are attached to the health and safety of persons due to any work which is performed, any article or substance which is, handled, stored, transported. A risk assessment is defined as an identification of the hazards present in the activity, work, site, and an estimate of the extent of the risks involved, considering whatever precautions are already being taken.

It is essentially a three-stage process:

- identification of all hazards.
- evaluation of the risks;
- Measures to control the risks.

Risk assessments are required to be maintained. This means that significant changes to a process or activity, or any new process or activity should be subjected to a risk assessment and that if new hazards come to light during the work process, then these should also be subjected to risk assessments. Risk assessments for long term processes should be periodically reviewed and updated. Method statements or written safe work procedures are an effective method as information and record of the way jobs / tasks must be performed. Daily or issue based or task specific or on the job risk assessments must be conducted at the place where work is to be performed/ conducted to allow managers and employees to assess any inherent risks that could have been overlooked during the initial risk assessment or any changes that might have occurred in a period of absence. For example if a job / task is extended over a day or halted due to inclement weather.

This risk assessment should consider, but not be limited to the project-specific risks supplied by Client.

Guidelines for actual steps involved in a job/task specific risk assessment are:

- Each activity is listed.
- Specific hazards are identified and listed against each activity.
- The magnitude of each risk is rated as Low. Medium or High.
- All known documentary and supervisory controls are listed. For instance: What safe work procedures exist for grinders?
- The relevance, effectiveness and sufficiency of these controls are assessed.
- In the event of insufficient or deficient controls for the activity, steps to be taken to rectify this shall be recorded, and safe working procedures drawn up.
- Project risk assessment shall have a column on the appropriate OHS legal reference for every hazard and risk identified.
- Persons responsible for implementing and supervising the task shall be identified, nominated and duly assigned.

- Persons responsible for monitoring the task and carrying out the planned job observation must be nominated.
- Completed risk assessment shall be handed to the Eskom project manager representative for comment and approval.

3.12 SAFE WORK PROCEDURES / METHOD STATEMENTS

There must be written safe work procedures for all activities, the safe work procedures must be aligned with the risk assessments and scope of work.. Method statements / written safe work procedure are control measures used to prevent an incident from occurring during the execution of the project. A written safe work procedure/ method statements provide guidance how to execute the task safely. A safe working procedure should be written when: -

a. Designing a new job or task.

b. Changing jobs or task;

c. Introducing new equipment or substances; and

The safe working procedure should identify:

d. The supervisor for the task or job and the employees who will undertake the task;

e. The tasks that are to be undertaken that pose risks;

f. The equipment and substances that are used in these tasks;

g. The control measures that have been built into these tasks;

h. Any training or qualification needed to undertake the task;

i. The personal protective equipment to be worn;

J. Actions to be undertaken to address safety issues that may arise while undertaking the task.

3.13 FIRE EQUIPMENT AND MAINTENANCE

1. All firefighting equipment's that have been provided shall:
   a. Be clearly labelled
   b. Conspicuously numbered
   c. Entered in a register
   d. Inspected monthly by a competent person
2. Tested and serviced every 12 months.
3. Results entered in the register and signed by competent person.

3.14 FLAMMABLE AND COMBUSTIBLE LIQUIDS

1. Proposals to store fuel on site must have written approval from the Eskom Fire Risk Manager. The volumes of fuel allowed to be stored will depend on site conditions and Statutory Regulations e.g. by-laws.

2. For storage of hazardous and flammable liquids, a maximum storage as per the scope of work and the approval to be obtained from the local Municipality and to be complied with for the duration the project.
3. The maximum of 40 litres of fuel is allowed to be stored. Anything greater than 40 litres to be stored in a flammable/combustible liquid store with adequate spillage retention and proper labelling.
4. Adequate numbers of dry chemical fire extinguishers, each with a minimum capacity of 4.5 kg, shall be provided, installed and maintained.
5. All fuel storage areas must comply with the following requirements: -
    a. Storage should be well clear of buildings.
    b. Storage areas must be kept free from all combustible materials.
    c. All Safety signs must be prominently displayed i.e.

Flammable Liquid.

- No Smoking.
- No open flames.
- Adequate firefighting equipment must be available.

6. For storage of hazardous and flammable liquids, the approval must be obtained from the Fire department
7. The storage of flammable or hazardous storage must be well ventilated.
8. Welding, flame cutting, and other hot work are done only after the appropriate precautions as required have been taken to reduce the risk of fire. Hot Work permit shall be obtained from the Duvha Power Station Fire Department.

3.15 ELECTRICAL INSTALLATIONS AND MACHINERY ON CONSTRUCTION SITES (CR 24)

Notwithstanding the provisions contained in the Electrical Installation Regulations promulgated by Government Notice No.R.2920 of 23 October 1992 and the Electrical Machinery Regulations promulgated by Government Notice No. R.1953 of 12 August 1988, respectively, as amended, a contractor shall ensure that:

a) Before construction commences and during the progress thereof, adequate steps are taken to ascertain the presence of and guard against danger to workers from any electrical cable or apparatus which is under, over or on the site.

b) All parts of electrical installations and machinery are of adequate strength to withstand the working conditions on construction sites.

c) In working areas where the exact location of underground electric power lines is unknown, employees using jackhammers, shovels or other hand tools which may make contact with a power line, are provided with insulated protective gloves or otherwise that the handle of the tool being used is insulated.

d) All temporary electrical installations are inspected at least once a week and electrical machinery daily before use on a construction site by competent persons and the records of these inspections are recorded in a register to be kept on site; and

e) The control of all temporary electrical installations on the construction site is designated to a competent person who has been appointed in writing.

3.16 FIRST AID AND EQUIPMENT

1. The requirements of the OHS Act GSR 3 must be observed.
2. First aid appointments must be made to meet the legal requirements. Appointees must be trained to level 2 and the training service provider must be registered in accordance with section 26(1) of the Skills Development Amendment Act, Act No. 37 of 2008. It is good practice for all employees to be trained to at least level 1.
3. When appointing employees for work sites, cognisance must be taken into account the type of work performed, the distance teams are working apart and the terrain to be covered if an emergency should arise.
4. A list of emergency numbers must be displayed on the notice boards and made accessible for all employees.
5. Main Contractor must ensure that his /her employees and appointed contractor employees are familiar with the emergency numbers.
6. Contractors shall have one first aid box for the first 5 persons and thereafter one for every 50 or team of workers on site or part thereof, taking into account the type of work performed and the distance between teams.
7. More first aid boxes shall be provided in accordance with the risk assessment. Boxes must be available and accessible for the immediate treatment of injured persons at the workplace.
8. For offices, signs indicating where the first aid box or boxes are kept as well as the name and contact details of the First Aider of such first aid box or boxes shall be erected.
9. The Main Contractor and appointed contractor shall ensure that alternative arrangements be made for incidents occurring after working hours.

3.16.1 Boxes and equipment

The following is a list of minimum contents of a first aid box:

- Item 1: Wound cleaner/antiseptic (100ml).
- Item 2: Swabs for cleaning wounds.
- Item 3: Cotton wool for padding (100 g).
- Item 4: Sterile gauze (minimum quantity 10).
- Item 5: 1 Pair of forceps (for splinters).
- Item 6: 1 Pair of scissors (minimum size 100 mm).
- Item 7: 1 Set of safety pins.
- Item 8: 4 Triangular bandages.
- Item 9: 4 Roller bandages (75 mm X 5 m).
- Item 10: 4 Roller bandages (100 mm X 5 m).
- Item 11: 1 Roll of elastic adhesive (25 mm X 3 m).
- Item 12: 1 Non-allergenic adhesive strip (25 mm X 3 m).
- Item 13: 1 Packet of adhesive dressing strips (minimum quantity, 10 assorted sizes).
- Item 14: 4 First aid dressings (75 mm X 100 mm).
- Item 15: 4 First aid dressings (150 mm x 200 mm).
- Item 16: 2 Straight splints.
- Item 17: 2 Pairs large and 2 pairs medium disposable latex gloves.
- Item 18: 2 CPR mouth pieces or similar devices.

A content check list must be available with all boxes and boxes shall be checked on a regular basis, kept clean and dust free.

3.17 OHS COMMUNICATION SYSTEMS

1. Main Contractor/s and their appointed contractors must develop a communication strategy outlining how they intend to communicate OHS issues to their staff, the mediums they will employ and how they will measure the effectiveness of their OHS communication. Where project meetings are conducted on site, OHS shall be included as a standing agenda point and minutes of these meetings shall be available on site at all times. Minutes of meeting must be compiled and filed in the relevant OHS files. All employees shall have access to these minutes. Attendance register shall be kept for all the health and safety meetings.

3.18 TOOL BOX TALKS / DAILY TEAM TALKS / PRE JOB MEETINGS

1. A meeting must be held prior to the commencement of the day's work with all relevant personnel associated with the work task in attendance. The job, relevant procedures, associated hazards, safety measures, i.e. the task risk assessments shall be discussed. Each employee who attends the briefing shall sign an attendance list of that pre-job brief form undertaking that they have an understanding of the tasks, risks and control measures required.
2. Where possible, tool box talks can be included in the pre-job brief meetings. If this does not occur, then weekly tool box talks must be conducted. The toolbox talk topics will be based on OHS issues pertaining to the project site. The topic and the contents shall be in writing. Attendance registers with the topic listed shall be kept.

3.19 OHS TRAINING

1. The scope of training includes but is not limited to the type of work being performed and the relevant procedures. Additional to the requirements, will be that the Main contractor and appointed contractors must have the appropriate qualifications, certificates and employees should always be under competent supervision.
2. Where legislative and Eskom recommended appointments are made, the relevant training shall be given to those appointees prior to the acceptance of those appointments.
3. When there is an amendment to the Acts and/or to the regulations, OHS specification and OHS plan, all affected staff shall undergo the applicable refresher training.
4. Appropriate time must be set aside for training (induction and other) of all employees.
5. Records of all training and qualifications of all contractor employees must be kept on the OHS file.

3.19.1 Main Contractor Induction training

The contractor is required to make arrangements with the Business Unit for its employees to attend induction in order to be granted permission to access site.

1. The Main contractor shall ensure that all his / her employees, appointed contractors and their employees have undergone the Eskom OHS induction training prior to commencing work on site.
2. Attendance registers must be completed of any induction training given, which must indicate that they have received and understood the induction training.
3. Prior to attending the induction training, all employees must undergo a pre-employment medical examination and found fit for duty. A copy of the certificate of fitness must be kept in the OHS file on site for the duration of the project.
4. Prior to attending the induction training, all employees must provide proof of their criminal records cleared with the South Africa Police Services or any other approved company. These shall be submitted to the Security Manager on site access.
5. All employees and visitors on site shall carry the access cards with them. These cards shall be withdrawn from the employees on project/contract expiry and handed over to the security department
6. On SHE Induction booking the company shall submit attach to an email a copy of the approved SHE File checklist and a list of employees on a company letterhead. Failure to do so will lead to the booking being declined/rejected.
7. For SHE induction attendance a valid medical fitness certificate and an RSA ID Book/card/Passport shall be brought along by all employees A work permit is required for all employees from neighbouring countries outside South Africa.
8. A question and answer session will be done during SHE Induction and contractor employees who fail to provide satisfactory induction related answers will not be provided with proof of attendance but will be re-inducted in the next session until they provide the person conducting the induction session with the confidence that they understood the SHE induction content.
9. It is the contractor's responsibility to keep records of induction training in their SHE Files.

3.19.2 Appointed Contractor induction training

The Main contractor shall ensure that all his / her employees and appointed contractor employees undergo site specific work induction with regard to the approved project OHS plan, hazards prevalent on the work site, scope specific risk assessment, rules and regulations, and other related aspects. The induction training should also include identification of sensitive features such as wetlands/vlei areas, red data species, graves, etc.

3.19.3 Visitors to site induction

1. Visitors to the site shall be required to undergo and comply with the Eskom site-specific safety induction prior to being allowed access to site.
2. All visitors must remain in the care and custody of a person (host) who has been properly inducted. No visitors are permitted to undertake any work onsite, of any nature.
3. Visitors who have completed site induction must be provided with a record of proof of Induction training.

3.20 GENERAL TRAINING

The Main contractor will be required to ensure that before an employee commences work on the project/site, the respective supervisor informs the employee of his scope of authority, the hazards associated with work as well as the control measures to be taken. This will include man-job specifications, the discussion of any task procedures or hazardous operational procedures to be performed by the employee. The Main Contractor is to ensure that the supervisor has satisfied himself that the employee understands the hazards associated with the work to be performed by conducting task/job observations.

3.21 CONTRACTOR SITE ESTABLISHMENT (RISKS ASSOCIATED WITH SITE ESTABLISHMENT AND DE-ESTABLISHMENT SHALL BE ADDRESSED IN THE PROJECT BASELINE RISK ASSESSMENT)

where contractors are providing their own facilities, the following shall apply:

1. Prior to establishing a project site, a site plan is required to be drawn and submitted to the project manager, listing position of all buildings, amenities, storage, stacking areas and temporary electrical installations. The appropriate colour coding and demarcation of storage and stacking areas must be carried out.
2. When compiling the site plan, cognisance must be taken to the establishment of the site camp, ablution facilities and dining area in relation to one another and away from stacking and storage areas.
3. Main contractor's site facilities should be managed and kept hygienically clean.
4. Where the materials are stored at the work sites, proper stacking and storage shall be carried out and maintained in good order at all times.
5. The contractor shall during the enquiry make provision for the Occupational Hygiene Surveys costs in the bill of quantities as per the OHS Act and its regulations and in line with the scope of work. Surveys shall not only focus on office work but the entire scope of work. The client will not bear the costs of such surveys on behalf of the contractor.
6. The site shall have an information board indicating the responsible contractor occupying that site
7. No site shall be handed over/sold to another contractor without seeking approving of the client/contract/project manager. Such approval shall be reduced in writing.

8. It is the responsibility of the site manager to ensure that the facilities are well secured for security reasons. The site shall not be left to be prone to access by criminal elements therefore security measures shall be of such a nature as to be a deterrent to criminals.

9. For equipment that is left in a container, such container doors must be fitted with a heavy-duty bar lock system and windows with heavy duty security burglar proof.
10. For the equipment are kept in a workshop, the workshop door must be fitted with heavy duty bar lock system.
11. The yard may be fitted with security flood lights for sufficient illumination. Taking into consideration the size of the workshop, the contractor must have security beam installed in the workshop.

12. The yard must have security fencing with a lockable gate.

13. Where Eskom is making provision of the facilities to the contractor, the following shall apply:

1. Prior to handing over the site to the contractor, the client (project managers/end users) shall together with the contractor management conduct inspections, draft and sign the service level agreement.
2. Main contractors shall manage and keep the allocated Eskom facility hygienically clean at all times.
3. It is the responsibility of the contractor to maintain and keep the facility in a good condition.
4. It is the contractor's responsibility to immediately report to the Eskom contract manager/project manager the defects incurred.
5. Eskom reserves the right to conduct unannounced site inspections.
6. It is the responsibility of the site manager to ensure that the facilities are well secured for security reasons.
7. For equipment that is left in a container, such container doors must be fitted with a heavy-duty bar lock system and windows with heavy duty security burglar proof.
8. For the equipment are kept in a workshop, the workshop door must be fitted with heavy duty bar lock system.
9. The yard may be fitted with security flood lights for sufficient illumination. Taking into consideration the size of the workshop, the contractor must have security beam installed in the workshop.
10. The yard must have security fencing with a lockable gate.
11. No site shall be handed over/sold to another contractor without seeking approving of the client/contract/project manager. Such approval shall be reduced in writing.

12. On site clearance after project handover:

- All damage done because of the works is to be reinstated to the satisfaction of the project manager and HSE safety department.
- Disconnect services.
- Before removing any fencing, it must be established if the fence may be removed or whether it is required to be left in place until the end of the maintenance period., where indicated.
- Upon finally leaving site, all advance warning signs must be removed from site together with contract sign boards etc.

3.22 SITE ROADS

1. When planning, sufficient areas must be allocated for parking of vehicles and mobile equipment's as well as roadways for ease of manoeuvrability of these vehicles.
2. Sufficient width roads to be provided and adequate space is to be allowed for large vehicles traversing the sites.
3. Only reverse parking is allowed on site parking areas.
4. Speed limit is 40km/h on site

   b) Speed limit is 10km/h in the plant area with the vehicle lights switched on.

   c) All roads signs and road markings shall be adhered to.
5. Vehicles may only be parked in designated parking areas.
6. Don't use a cell phone or hand held radio when driving. Pull off safely if required.
7. Only persons with valid driver's licenses (for the type of vehicle they are authorized to drive) are allowed to drive on site.

3.23 VEHICLE MANAGEMENT

1. It is the responsibility of the driver to ensure:

   a. Their passengers wear seat belts whilst the vehicle is in motion.
   b. Comply with all traffic road rules, safety, direction and speed signs.
   c. Ensure that vehicle loads are properly secured prior to moving off.
   d. Ensure that vehicles are not overloaded.

2. No persons maybe transported at the back of the bakkie.
3. Drivers are required to conduct the route risk assessment prior to travelling/driving.
4. No drivers or operators may text, talk on cell phones or two-way radios whilst driving.
5. All drivers shall have a valid medical fitness certificate.
6. The First aid box with valid contents and fire extinguishers must be included in the vehicle, be services annually and inspected monthly. Drivers must be trained on how to use the First aid box and fire extinguishers.
7. Two triangles must be included in the vehicle and the emergency number be displayed at the back of the vehicle.
8. Each Project site that is enclosed by demarcation will have system/ process to manage vehicle access to site.
9. Contractor must maintain their vehicles in a roadworthy condition and a vehicle license must be valid at all times and this is applicable to yellow plant.
10. Drivers of light vehicles must avoid stopping or parking in the vicinity of machines. At least 30 (thirty) meters must be left clear between such a vehicle and such a machine.
11. Contractor vehicles can be subject to inspections by the Client/Agent's representative. Vehicles which are not roadworthy will not be permitted to be used on site.

12. Drivers/operators shall be responsible for the travel-worthiness of all loads conveyed by them. Precautions shall be taken to secure all loads properly. Loads projecting from vehicles shall be securely loaded and in daytime a red flag and during darkness a red light or red reflective material shall be attached to the extreme end of such projecting materials.
13. The vehicle inspection checklist must include but not limited to:
    - Reverse alarm / beeper
    - Yellow reflective tape
    - Mud flaps
    - Fire Extinguisher
    - 2 Triangles
    - First Aid Box
    - Safety belts for every seat
    - No fold-up or jockey seat
    - Tyres
    - License disc
    - Yellow reflective tape that must be fitted at a height of between 250mm and 1.5 metres
    - Speed warning sigh (100km/h) at the back of the minibus
    - Driver have a Public Driving Permit

3.24 HOUSEKEEPING AND ORDER

1. All contractors shall maintain a high standard of housekeeping within their sites and vehicles for the duration of the project/contract.
2. Prompt disposal of waste materials, scrap and rubbish is essential and be stored temporarily in a designated waste area, awaiting disposal.
3. Materials/objects shall not be left unsecured in elevated areas – falling objects may cause serious injuries/fatalities.
4. Nails protruding through timber shall be bent over or removed so as not to cause injury.
5. All packaging material including boxes, pallets, crates, etc. to be removed from the work area immediately.
6. On completion of his / her work, the contractor is responsible for clearing his / her work area of all materials, scrap, temporary buildings and building bases to the satisfaction of the client/agent.
7. In cases where an inadequate standard of housekeeping has developed, compromising safety and cleanliness, anyone has the responsibility to bring it to the attention of the Main contractor in the first instance and the Eskom project/contract manager in the second instance.
8. The Eskom project/contract manager has the right to instruct the Main contractor and appointed contractors to cease work until the area has been tidied up and made safe. Neither additional costs nor extension of time to the contract shall be allowed as a result of such a stoppage. Failure to comply with this requirement will result into site cleaning by another cleaning contractor company at the cost of the Main contractor.

9. The Main contractor shall carry out regular safety/housekeeping inspections daily to ensure maintenance of satisfactory standards. The Main contractor shall document the results of each inspection and shall maintain records for viewing.

3.25 STACKING AND STORAGE

1. The competent personnel must be appointed in writing to manage and supervise all stacking and storage on site.
2. Before stacking any material, the contractors or their employees must consult the contract manager for authorisation to use such an area for stacking purposes. This is to prevent haphazard arrangements.
3. Adequate care must be taken by the contractor to ensure that storage and stacking is carried out correctly and safely.
4. Correct shelve stacking must be carried out, heavy and bulky on the bottom, light and small on top.

3.26 WORKPLACE SIGNAGE AND COLOUR CODING

1. Symbolic safety signage shall be displayed where it is required by legislation.
2. All symbolic safety signage shall conform to the requirements of SANS standard 1186.
3. Signs shall be positioned to be seen from most positions within the work sites / areas.
4. All signage must be clear at all times and be replaced timeously when worn out.
5. Contractors establishing sites must erect a company sign at their site offices to reflect the name and contact details of the: contractor site/responsible manager; supervisors; Health and Safety Manager/Practitioner; First Aider; Health and Safety Representative and Evacuation warden.
6. The location of every first aid box; fire extinguisher and emergency exit is to be clearly indicated by means of a sign.
7. When using, an explosive power tool the appropriate signage shall be erected, warning people of its use.
8. Contractors shall provide signage where work is conducted and where unauthorised entry is prohibited and/or where alerting and cautioning passers-by to be aware of potential dangers.
9. The meanings of the appropriate symbolic signage must be discussed during induction training and toolbox talks.
10. Where possible, within workshops, work areas and established premises, the appropriate sign indicating the meaning of symbolic safety signs must be displayed.

3.27 TOOLS AND EQUIPMENT (INCLUDES GRINDERS AND POWER GENERATORS)

1. Contractors shall ensure that all tools and equipment are identified, safe to be used and is maintained in a good condition.
2. Contractors shall ensure that all tools and equipment are listed on an inventory list, be regularly inspected at least monthly or as required by legislation and risk assessments. The equipment should be numbered or tagged so that it can be properly monitored and inspected.

3. Where applicable, tools and equipment must have the necessary approved test or calibration documentation prior to being brought onto the project and the records shall form part of the OHS plan. Maintenance calibration shall be undertaken in terms of the manufacturer's requirements.
4. All fuel driven equipment must be properly maintained in accordance with the manufacturer's recommendations and legal requirements.
5. Eskom reserves the right to inspect tools or items of equipment brought to site by contractors for use on this project.
6. Should Eskom personnel find any item that is inadequate, faulty, unsafe or in any other way unsuitable for the safe and satisfactory execution of the work for which it is intended, the Eskom personnel shall advise the contractor in writing and the contractor shall forthwith remove the item from site and replace it with a safe and adequate substitute.

   Note: In such cases, the contractor shall not be entitled to extra payments or extensions of time in respect of delay caused by Eskom's instructions.
7. Where defective tools and equipment's are identified, such tools and equipment shall be removed out of site immediately, locked away to prevent further use until such time as the tool or piece of equipment has been repaired.
8. Contractors shall ensure that the appropriate records are kept for all tools and equipment used on the project. Such tools and equipment's shall be subjected to regular inspections.

3.27.1 Hand tools

1. All hand tools (hammers, chisels, spanners, etc.) must be recorded on a register and inspected by the construction supervisor on a monthly basis as well as by users prior to use.
2. Under no circumstance will the contractors be allowed to use their equipment's with mushroom heads, to be removed at the end or beginning of shift prior to use.
3. Tools with sharp points in toolboxes must be protected with a cover.
4. All files and similar tools must be fitted with handles.
5. No makeshift tools are permissible on the project.

1. A detailed inspection of all scaffolding shall be conducted at suitable intervals not exceeding seven days by a competent person and visual inspection shall be done every time prior to climbing by employees using such scaffolding. The inspection check lists must be filed in the site OHS files.
2. Visual inspections must always be carried out prior to every use. No modification of erected scaffolding shall be done except by the authorised scaffolding company.

28 CONSTRUCTION VEHICLES AND MOBILE PLANT

A contractor must ensure that all construction vehicles and mobile plant—

1. are of an acceptable design and construction.
2. are maintained in a good working order.
3. are used in accordance with their design and the intention for which they were designed, having due regard to safety and health.

4. are operated by a person who—

- has received appropriate training, is certified competent and in possession of proof of competency and is authorised in writing to operate those construction vehicles and mobile plant.
- has a medical certificate of fitness to operate those construction vehicles and mobile plant, issued by an occupational health practitioner in the form of Annexure 3.
- have safe and suitable means of access and egress.

5. are properly organized and controlled in any work situation by providing adequate signalling or other control arrangements to guard against the dangers relating to the movement of vehicles and plant, to ensure their continued safe operation.

6. are prevented from falling into excavations, water, or any other area lower than the working surface by installing adequate edge protection, which may include guardrails and crash barriers.

7. are fitted with structures designed to protect the operator from falling material or from being crushed should the vehicle or mobile plant overturn.

8. are equipped with an acoustic warning device which can be activated by the operator.

9. are equipped with an automatic acoustic reversing alarm; and

10. are inspected by the authorised operator or driver daily using a relevant checklist prior to use and that the findings of such inspection are recorded in a register kept in the construction vehicle or mobile plant.

A contractor must ensure that—

- The traffic routes are suitable for the persons, construction vehicles or mobile plant using them, are sufficient in number, in suitable positions and of sufficient size.
- every traffic route is, where necessary, indicated by suitable signs.
- all construction vehicles and mobile plant left unattended at night, adjacent to a public road in normal use or adjacent to construction areas where work is in progress, have appropriate lights or reflectors, or barricades equipped with appropriate lights or reflectors, in order to identify the location of the vehicles or plant.

11. A contractor must ensure that the operation of a bulk mixing plant is supervised by a competent person who has been appointed in writing and is—

- aware of all the dangers involved in the operation thereof; and
  conversant with the precautionary measures to be taken in the interest of health and safety.
- No person supervising or operating a bulk mixing plant may authorize any other person to operate the plant unless that person is competent to operate a bulk mixing plant.
- A contractor must ensure that the placement and erection of a bulk mixing plant complies with the requirements set out by the manufacturer and that such plant is erected as designed.

29. EXCAVATION (REFER CONSTRUCTION REGULATIONS,2014 SECTION 13

A contractor must—

(a) ensure that all excavation work is carried out under the supervision of a competent person who has been appointed in writing for that purpose; and

(b) evaluate, as far as is reasonably practicable, the stability of the ground before excavation work begins.

(2) A contractor who performs excavation work—

(a) must take reasonable and sufficient steps to prevent, as far as is reasonably practicable, any person from being buried or trapped by a fall or dislodgement of material in an excavation.

An Excavation permit shall be obtained from the Client before any excavation work is undertaken.

3.30 AUDITING

3.30.1 Approval and compliance of Main contractor OHS plan

The Contractor's OHS Plan will be audited against compliance checklist so as to verify compliance to the requirements of the Eskom OHS specifications. Once there is compliance only then will the Main contractors OHS plan be approved by the project manager or an appointed Eskom contract custodian. The implementation of the OHS Plan shall be assessed / audited by Eskom personnel on a regular basis. This will include physical conditions evaluation.

3.30.2 Eskom OHS audits

Eskom shall evaluate all contractors' OHS performance 3 monthly against the legal, Eskom requirements, OHS specification and the contractors OHS plans. The auditor will choose which process risk area will be audited.

Note: Eskom reserves the right to conduct unannounced audits on contractors

There will be scheduled audits conducted by Eskom on the Main contractor/s and/or appointed contractors. These audits shall be attended by the contractor's site manager or his representative. When these are to be conducted, service providers will be informed.

If there are any findings / non-compliance identified as serious in these audits, an activity will be stopped for that specific Main Contractor and appointed contractor. Refer to section on "Work Stoppage" in this OHS Specification.

3.30.3 Contractor audits

Main Contractors are required to conduct internal audits on both their employees and their appointed contractors on the implementation of their OHS Plan on scheduled basis or when the scope of work changes. A summary of the findings and the proposed corrective actions shall be submitted to Eskom project manager within one week after completion of the audit. Where appointed contractors are audited by the Main contractor a copy of the audit report shall be submitted to the appointed contractor within 7 days of the audit.

3.31 SMOKING

The national smoking policy must be observed and smoking is permitted in designated areas only (Eskom Smoking Procedure 32-36).

3.32 CELLULAR PHONES

The National Road Traffic Act requirements regarding the use of cellular phones must be observed, when driving and or operating mobile equipment and or machinery. The personal use of cell phones in the plant is prohibited unless it is an emergency or for work purpose. The use of cell phone camera in the plant must be in line with the national key point Act and the Plant safety regulation.

3.33 OCCUPATIONAL HEALTH, HYGIENE AND REHABILITATION

All contractors are required to develop an Occupational Health, Hygiene and Rehabilitation program. The program is intended to ensure that the risks to health are identified and controlled.

3.33.1 Medical Assessments

Note: Eskom will only accept medical surveillances conducted by an Occupational Health/Medical Practitioner who holds a qualification in occupational health medicine.

1. Main contractors must ensure that their employees and their appointed contractor employees have a medical surveillance program whereby their employees undergo entry, periodic and exit medical fitness examinations.
2. The health risk assessment must be used to compile the man job specification and address the hazards that the employees will be exposed to.
3. For the appropriate medical examinations to be conducted, each employee must have a man job specification, which must indicate the description of work, list of hazards and potential occupational exposure limits, physical hazards and required physical attributes.
4. Medical fitness certificates shall be renewed annually for employees who are working on site. This shall be maintained until completion of the contract/project.
5. The Main Contractor must ensure that his / her employees and appointed contractor employees have undergone pre-entry medical examination before starting work on the contract.
6. The Main contractor shall provide a documented process for managing those employees who are issued with a conditional certificate of fitness.
7. The contractor shall include in the OHS file the record of the employees exit medical fitness certificates as and when their employees leave the company.

3.34 ROLES AND RESPONSIBILITIES

All contractors are required to list employee's roles and responsibilities pertaining to the contract.

3.35 WORKING AT HEIGHTS (WHERE APPLICABLE)

3.35.1 General Requirements

Wherever reasonably practicable, preference is given to the performance of work at ground level as opposed to the elevated position. Where work in an elevated position is necessary, preference is given to fall prevention measures such as, but not limited to, effective barricading and the use of work platforms. Persons may only work from a fall risk position if a site-specific fall protection plan developed by the appointed competent person (as per 32-418 procedure) is in place and correctly implemented and consists of the following:

1. All appointments for the fall protection plan developer and implementer are in place.
2. Baseline risk assessment, which is specific and incorporates the working at height risk assessment, as well as the site-specific risk assessment, has been completed for the work to be conducted.
3. Safe working procedure/task analysis and work instructions, approved by a competent person, are in place.
4. A fall rescue plan, along with necessary equipment's and trained rescuers, are in place.
5. Appropriate training, as determined by the risk assessment, has been provided.
6. Appropriate height safety equipment and personal protective equipment have been issued to the individual.
7. There are equipment inspection procedures and up-to-date inspection records.
8. Individuals are medically fit to work at height, and records of this are kept.
9. A site-specific risk assessment is performed.

While work is in progress, adequate warning signs and/or barricades shall be used in all areas where there is a risk of persons being injured by materials or equipment falling from the work area. Barricades should be continuous and easily visible.

A drop zone shall be established with appropriate warning signs and barricading, warning personnel below of workers above and potential falling objects.

Every employer shall ensure that work at height is:

1. properly planned;
2. appropriately supervised; and
3. carried out in a manner that is, as far as is reasonably practicable, safe and that its planning includes the selection of work equipment.

3.36 Permit to Work, Lock-Out Procedures, Safe Work Procedures

A Permit to Work is required before any work is carried out on the plant at Duvha Power Station. A contractor should have positive verification that a valid Permit To Work is in place prior to commencing with any work. It is the right of any contractor to refuse to start work without a valid Permit to Work.

The Responsible Person shall ensure that:

1. The conditions of permits are strictly adhered to.

2. That lock-out procedures, mechanical as well as electrical, are strictly adhered to and any deviations are corrected immediately.

3. That safe work procedure as laid down by Duvha Power Station and as determined by the Risk Assessment shall be followed.

3.37 Lifting gear and lifting machines requirements.(SHOULD THIS BE REQUIRED)

- A competent person must be authorized in writing
- Equipment must be kept on register and inspected by Approved service provider at frequencies determined by the servicing service provider.
- Load testing shall be performed by a registered LME; (Lifting Equipment Entity) proof of registration with Dept. of Labour shall be available on site.
- Lifting equipment shall be inspected by a registered Lifting Equipment Inspector (LMI) registered with the Engineering Council of South Africa

3.38 PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

1. The Main contractor must provide a detailed programme that includes the issuing, maintenance and replacement of PPE for all his employees and appointed contractors on site.
2. All contractors shall comply with the requirements of GSR 2 of the OHS Act and

PPE Specification Standard 240-44175132.

3. The risk based PPE matrix must be compiled detailing the types of PPE that is required to be issued to employees performing the respective tasks.
4. If there are exceptional circumstances in which certain activities necessitate the use of additional PPE, a risk assessment must be done, in which such PPE requirements will be determined and issued.
5. All contractors shall ensure that their visitors wear and use the correct PPE whilst on worksites.
6. Where PPE is required and visitors are not in possession of, then it is the individual contractor's responsibility to provide the PPE.
7. All PPE purchased and used by all contractor employees including visitors must comply with the relevant SANS standards.
8. Where deemed as a requirement (as per risk assessment), then high visibility vests shall be worn.
9. Monthly inspection records of PPE must be kept in the Safety file
10. The contractor shall provide training to his/her employees on the correct use, care and maintenance of PPE and keep the record.

3.39 EMERGENCY MANAGEMENT

The art of emergency preparedness and response is to minimise the effects of any emergency and to restore normal activities as soon as possible. The contractor must develop and align their own Emergency response plan with Eskom's to address any emergency which might arise at any given point in time. The contractor to familiarise themselves with the Eskom emergency response plan

and procedure. Periodic emergency drills must be undertaken to test the effectiveness of their plan. This must be recorded and provided on request.

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3.40 INCIDENT INVESTIGATION

All incidents shall be investigated in terms of OHS Act General Administrative Regulations 8 and 9, using Eskom Procedure 32-95 OHS incident management as a reference, and where injuries as contemplated in sections 24 and 25 have been sustained, be reported to the Department of Employment and Labour.

Contractors shall use the Eskom Flash report to report incidents immediately or before end of shift. The standard General Administrative Regulation Annexure 1 “Recording of an Incident form” for all incident investigation reports. The objective of incident investigation should not only be a legal requirement, but should establish why and how the incident occurred and find out the real root cause of the incident and to decide on precautionary measures that are required to address the root cause to prevent any further recurrences of the same or similar incidents.

3.41 NON-CONFORMANCE AND COMPLIANCE

1. Any non-compliance to any health and safety requirement in this OHS specification is subject to discipline in terms of the Eskom Procurement and Supply Chain Management Procedure.
2. Main contractors are required to implement a non-conformance procedure (if not already in place) for issuing to contractors for transgressions. The procedure can include “quality” related non-conformance issues. Similarly, appointed contractors must implement a non-conformance procedure.
3. The procedure for the issuing and closing off of non-conformance reports shall be strictly adhered to.
4. Contractor project management must monitor the close out of non-conformances issued, in not doing so; any recommendations made may not be implemented.
5. Where non-conformances are issued by Eskom then one of the close-out steps of the procedure will be for the offender to be called by the responsible project manager to explain the non-conformance issued and what plan is in place to prevent a recurrence of the non-conformance.
6. Should the contractor fail to provide adequate PPE (as per PPE standards) to their employees for the tasks being performed and/or to visitors; failure to enforce the wearing of such PPE will be viewed as a transgression of the legislative and Eskom requirements.

3.42 Environmental Requirements

Duvha Power Station is ISO 14001 compliant and management would not like anything to jeopardize this achievement

Contractors are required to develop and maintain their Environment Management Plans. The basic elements of an EMS complying with ISO 14001 are:

- A list of potential environmental aspects and impacts;

- Set of operational procedures for monitoring, controlling and reducing impacts, and recording the results; and
- Procedure for internal audits of the procedures.

Environmental Management Plans (EMP's) should contain the following components:

a. Summary of Impacts: The predicted negative environmental impacts for which mitigation is required and should be summarized.

b. Description of mitigation measures: The EMP identifies feasible and cost effective mitigation measures to reduce significant negative environmental impacts to acceptable and legal levels. Mitigation measures should be described in detail and be accompanied by designs, equipment descriptions, and operating procedures.

c. The technical aspects of implementing the mitigation measures should be described.

d. A monitoring program should be highlighted to ensure compliance to plans. Regular reviews of the company's environmental performance are necessary during the operational phases of a project to ensure procedures are appropriate, and to ensure that environmental objectives and targets are being achieved.

e. Employees should undergo environmental awareness training. This should be in addition to any specific detailed training they may require to conduct monitoring. Environmental awareness training is critical for the employees to understand how they can play a role in achieving the objectives specified in the EMP.

f. Non-compliance to the Duvha environmental requirements or the National Environmental Management Act may have negative contractual consequences as determined by the Client/Project Manager Agent and contract conditions

g. Waste should be disposed of only in the correct waste containers as per Duvha requirement.

h. Hazardous waste should be disposed of in the correct way at a licensed disposal site. A copy of the hazardous waste disposal certificate must be submitted to the Client/Project Manager Agent. Contents of the OHS Plan shall include provision and maintenance of portable ablution facilities, related documents for this facility shall be in place with regards to regards to maintenance and disposal of human excreta.

Below is a guide in terms of how different type of waste should be disposed at Duvha Power Station:

Colour (Bins & Skips)	Waste Type
Red	Hazardous waste (which includes sulphur, soiled PPE, FFB's, fluorescent tubes, asbestos)

White	Domestic (which includes office waste)
Yellow	Coal & Ash discards
Maroon	Scrap Metal
Brown	Oil rags / absorbent

3.43 OHS FILES

1. OHS file means documents or records in permanent form, containing the information about the safety and health management system from inception, execution to completion of works.
2. All contractors are required to keep the OHS file on every project site. If there is more than one site per project, a file per site shall be kept at that site. Contractors may keep additional files at their head office as additional records. The OHS file shall be maintained by all the contractors on their project sites and shall be available on request for audit and inspection purposes.
3. The OHS file shall consist of the OHS documentation/information in line with the OHS requirements/specification, legal and other requirements.
4. The sequence of filing the documentation must be kept in the same sequence as listed in this OHS requirements /specification and the OHS plan.
5. Each record shall be separated by partitions to afford easy identification and access. Each partition must be labelled.
6. On completion of the work/project, the main contractor must hand over a consolidated health and safety file to the project manager.
7. In case where the project is extended, should the documentation in the OHS files become cumbersome, the older documentation must be archived in boxes which shall be correctly labelled and be available for auditing purposes. The archived documentation must be handed over at the completion of the project.
8. Should there be a need to extend the SHE File expiry period for any reason the Contractor SHE FILE Assessment Form – SAS0012-2, it is the responsibility of the project manager to request for the extension by completing the Contractor SHE File Date Extension Request Form SAS0012-10. The contractor still needs to present the previously approved SHE File to Safety Risk Management to verify if there are:
    - No expired records.
    - Changes to the previously appointed individuals.
    - Addition or changes to the previous scope of work that was approved, should there be changes the applicable risk assessment will be revisited to include hazards and risks brought by the additional scope of work.

Should there be any other significant changes identified then the SHE File will be re-evaluated .

3.44 WORK STOPPAGE

1. Any person may stop any activity where an unsafe act or unsafe condition that poses or may pose an imminent threat to the safety and health of an individual or create a risk of degradation of the environment. This includes any unauthorised work or service performed by, or legally or contractually non-compliant acts or omissions by, any contractor contracted to work at that site.
2. Work stoppages that are initiated due to OHS concerns, non-compliance, or poor performance related to the contractor's works or services shall not warrant any financial compensation claim lodged against Eskom where the contractor has not met the requirements defined legally or contractually.
3. Where stoppages are carried out, the required non-conformance report shall be raised.
4. All work stoppages ideally should be investigated and documented by contract custodians.

3.45 HOURS OF WORK

The requirements of the Basic Conditions of Employment Act, Chapter Two "Regulation of Working Time" must be adhered to. All contractors are required to maintain an accurate record of time worked by each employee.

3.45.1 Normal work

All work conducted on site shall fall within the legal requirements in accordance with the Basic Conditions of Employment Act. Contractors will notify their Eskom Supervisor or project manager of any work that needs to be performed after hours according to the agreed arrangements. (The application needs to be submitted timeously). Where applicable, the notification should include proof of application, for overtime, to the Department of Employment and Labour and /or the letter of approval from the Department of Employment and Labour.

3.45.2 Night work

When night work is to be performed, the baseline risk assessment must be reviewed to include the management of night work. Contractors shall provide sufficient lighting to enable the entire work site to be illuminated to a degree that employees will not work in dark (un-illuminated) or dimly lit areas. Care must be exercised as not to use few lights with high light intensives as this will cause night blindness.

If work is continuing from day light into night, at dusk, a tool box talk must be held where all employees will be advised of the hazards of night work and the extra precautions which require to be taken, i.e. poor housekeeping, stepping on uneven ground, stepping on uneven gratings ,etc.

3.45.3 Overtime

When overtime is required to be performed, the appointed contractors shall inform the Main contractor of such action. The Main contractor shall inform the Eskom project manager of such function and provide proof of exemption from the Department of Employment and labour. Contractors shall be aware of the effects of human fatigue and regulate overtime accordingly. The baseline risk assessment must be reviewed to include the management of overtime work.

3.46 OMISSIONS FROM SAFETY AND HEALTH REQUIREMENTS SPECIFICATION

By drawing up this OHS specification Eskom has endeavoured to address the most critical aspects relating to OHS issues in order to assist the contractor to adequately provide for the health and safety of employees on site.

Should Eskom not have addressed all OHS aspects pertaining to the work that is tendered for, the contractor needs to include it in the OHS plan and inform Eskom of such issues when signing the contract.

3.47 CONTRACTOR PERFORMANCE MONITORING

Contractor management is required to do the following as part of the continuous improvement initiatives:

- Visible Felt leadership by top management
- Identify critical tasks and monitor by conducting Job Observations
- Contractor Chief Executive or Managing Director shall present the lost time incidents at Business Unit Power Station General Managers meeting

3.48 CONTRACT SIGN OFF

On completion of the project, all Eskom team must conduct the final audit, inspections, and housekeeping to identify defects, outstanding actions, and open incident cases, and present their findings to the contractor and Eskom contract manager, who must facilitate the closeout. Once the contractor has closed all findings the Eskom's team will verify and sign off prior to issuing a completion certificate and final payment.

3.49 ESKOM'S RIGHT TO TERMINATE THE CONTRACT

The contractor/supplier shall at all times comply with Eskom's occupational health and safety (OHS), legal and other requirements as amended for the duration of the contract/project. In addition, the contractor shall comply with the requirements contained in the SHE Specification. Eskom reserves the right to terminate the contract in the event that the contractor has built up a history of poor performance or non-conformance in relation to matters of Eskom OHS and legal compliance. No work may commence until the health and safety file has been approved by Eskom OHS personnel.

4. AUTHORIZATION

The OHS Manager & Contracts Manager to authorise, include their names

- S.Matsebe
- Nokwazi Base

5. REVISIONS

Date	Rev.	Compiler	Remarks
May 2022	1	F Pooe	This provides the initial OHS specification requirements that must be met by the relevant contractors who have been awarded a contract for the work to be performed for Eskom Generation.
August 2015	0	F Pooe	This provides the initial OHS specification requirements that must be met by the relevant contractors who have been awarded a contract for the work to be performed for Eskom.