Project Description:	**Dam safety rope, ladder and buoy supply and installation**	
Project WBS:	**N/A**	
Operating Unit & Project Office:	**GX Coal 2**	**Matimba Power Station**
Project Manager:	**Osmah Raphiri**	
Program Manager:	**Lerato Mthimkhulu**	
Project Sponsor / Client Representative:	**Lerato Mthimkhulu**	
Engineer / Discipline Manager:	**Renè Davel**	
PLCM Phase	**Procurement**	

1. Executive overview

Matimba power station has several dams situated across the station and its ash disposal facility. To ensure the safety of employees working in the area these dams need to be fitted with safety ropes, rope-ladders, and lifebuoys.

2. Employer's objectives and purpose of the *works*

The *Employer's* objective is to improve the safety of personnel working in the vicinity of the station dams by replacing all the damaged dam safety ropes, rope-ladders and lifebuoys and install new, where there are none.

2.1. Scope

The document covers the scope of work for the supply and installation of dam safety ropes, rope-ladders, and lifebuoys at Matimba power station. The *Contractor* is required to supply and install all dam safety equipment as per the scope of work.

2.1.1. Purpose

The purpose of this document is to outline the high-level scope of work requirements for the supply and installation of dam safety ropes, rope-ladders, and lifebuoys at Matimba power station.

2.2. Normative/informative references

Parties using this document shall apply the most recent edition of the following (including but limited to) listed documents:

2.2.2. Normative references

[1] Occupational Health and Safety Act (Act 85 of 1993) with applicable standards and regulations.
[2] Construction Regulations (latest and applicable).
[3] 32-95 OHS Incident Management Procedure Rev 9.
[4] 32-136 Contractor Health and Safety Requirements.
[5] 32- 421 Eskom Life Saving Rules.
[6] 32-726 Standard Contract and Contractor OHS Management Rev. 3

[7] 32-727 - Eskom Safety, Health, Environmental and Quality (SHEQ) Policy.
[8] Eskom Health and Safety Requirement including project specific requirement.
[9] Legislative and regulatory requirements, relevant and applicable.
[10] SANS 1200 series, Standardised specification for Civil Engineering Construction.
[11] SANS 2001 – Construction works (complete series).
[12] National building regulations and building standards act (Act 103 of 1977) including applicable standards.
[13] Safety of Life at Sea (SOLAS) Life Saving Appliance (LSA) Code.
[14] ISO 12402-3: 2006: Personal Floatation Devices Part 3: Lifejackets, performance level 150 - Safety requirements.
[15] SANS 943:2008 – Man-made fibre ropes.

2.2.3. Informative references

[16] ISO 9001 Quality Management System.
[17] 240-48929482: Tender Technical Evaluation Procedure.

3. Scope of works

The *Contractor* shall replace all defective dam safety ropes, rope-ladders and lifebuoys and install new where there are none. This shall be done for all station dams.

3.1. Removal & Disposal

The *Contractor* shall be responsible to remove all defective dam safety ropes, rope-ladders and lifebuoys and dispose of it in a responsible manner at a licenced landfill site. The *Contractor* shall submit landfill site certificate to the *Employer* for approval.

3.2. New safety ropes

New safety ropes to consist of 22mm polypropylene 3-strand Hawser (plain)-laid rope (HR22). Colour: orange. Safety ropes shall be knotted every meter. Where old ropes will be replaced with new ropes, the *Contractor* shall use existing anchor points. Method for fastening rope to the anchor bolt shall match existing.

Where dams have no existing safety ropes the *Contractor* shall be responsible to construct anchorage points as well as supply and install the safety ropes. Anchor points shall be constructed as per Figure 1 below. Note that formwork must be used to ensure neat and square edges.

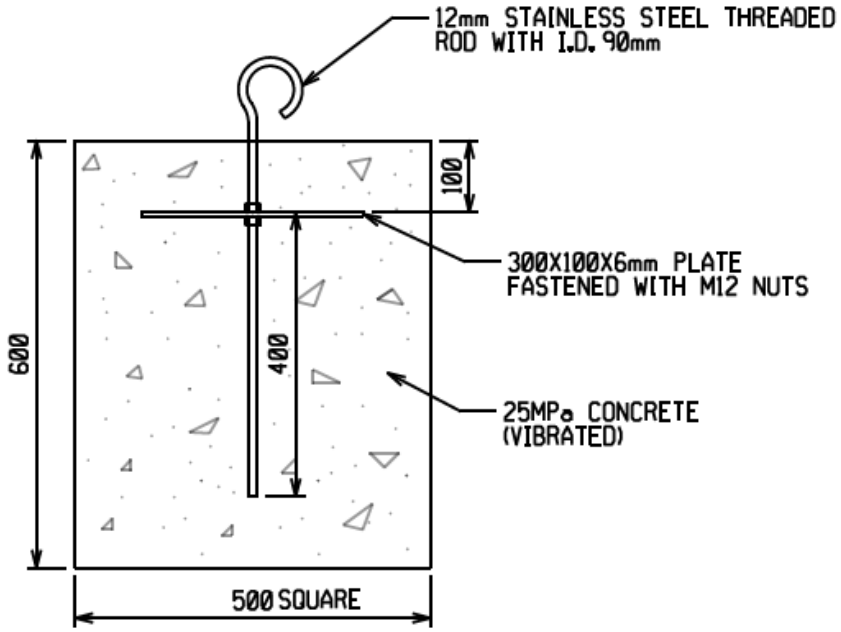

Figure 1: Rope anchor.

The *Contractor* shall reinstate and compact the natural material around the concrete anchor. Safety ropes must be connected to each other by a loop within the centre of each dam. 1000m of 22mm diameter polypropylene rope shall be supplied to be kept as spares.

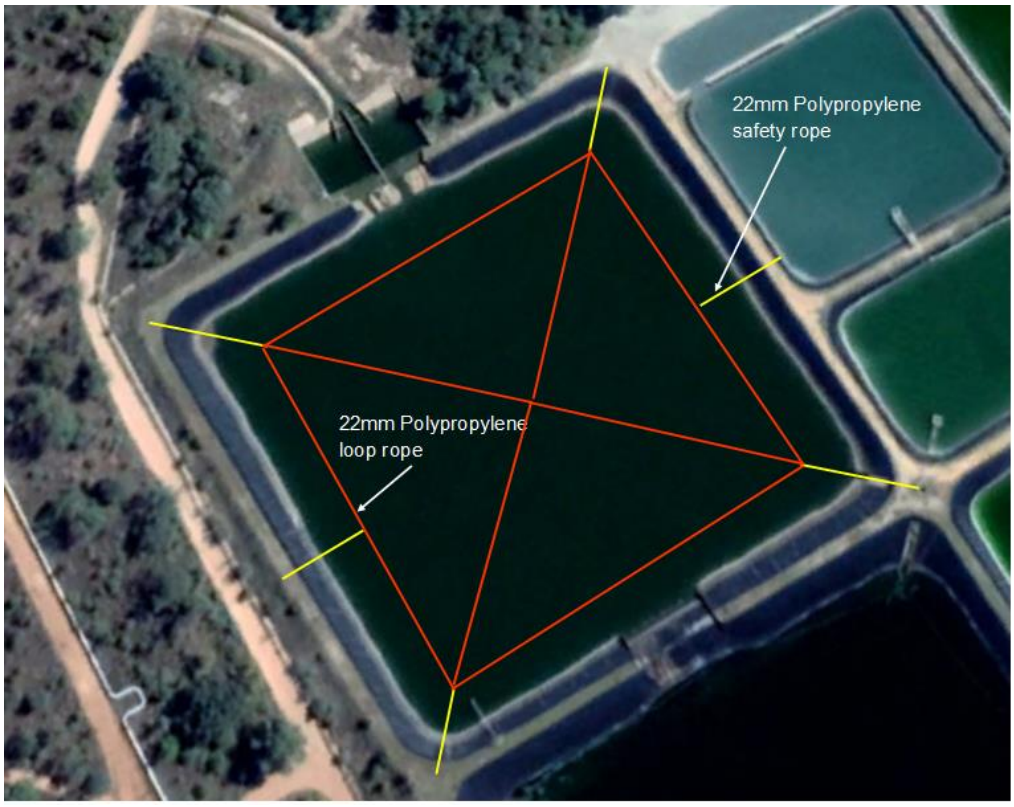

Figure 2: Representation of loop rope.

3.3. New rope ladders

New rope ladders shall consist of 22mm polypropylene 3-strand Hawser (plain)-laid rope (HR22) Colour: orange. The *Contractor* shall be responsible to design, manufacture, supply and install suitable ladder rungs. Rungs must be water and UV resistant and fit for purpose and shall be spaced 0.5m apart. These ladders shall be used in an emergency event where someone has fallen into a dam or in instances where personnel need to take water samples.

Where old rope ladders will be replaced with new ones, the *Contractor* shall use existing anchor points. Method for fastening rope to the anchor bolt shall match existing. Where dams have no existing rope ladders, the *Contractor* shall be responsible to construct two anchorage points (one for each rope) as well as supply and install the rope ladders. Anchor points shall be constructed as per Figure 1. Rope ladders shall be suited for depth of the dam that they are installed in and must be long enough to reach the bottom of the dam.

3.4. New life buoys and cabinets

New life buoys to comply to the International Safety of Life at Sea (SOLAS) Personal Life Saving Appliances (LSA) code and shall:

- Have a minimum mass of 2.5kg.
- Be constructed to withstand a 45m drop into the water, without impairing its operating capability or that of the attached components.
- Shall be fitted with a 30m braided polypropylene grab line (HR8). Colour: Orange. The grabline shall be secured at four equidistant points around the circumference of the buoy to form four equal loops The rope must be incapsulated in a floating plastic line holder that is UV resistant.

A new cabinet and stand shall be supplied and installed for each lifebuoy. Where there are existing stands, they shall be removed and disposed of at a licensed landfill site. The new cabinet shall be big enough to house the life buoy and encapsulated safety rope and shall consist of heavy duty UV resistant plastic (Orange). The stand shall consist

of galvanised steel, have a length of 1.5m and shall be installed onto a concrete base. The concrete base shall have minimum dimensions of 500x500x600mm deep and consist
of 25MPa concrete. A method statement of how the *Contractor* plans on installing the stand onto the concrete base shall be submitted tot the *Project Manager* for approval. All proposed anchor bolts shall be stainless steel. All consumables required for installation shall be provided by the *Contractor*.

3.5. Life jackets

The *Contractor* shall supply and deliver 2 new life jackets. Life jackets shall comply to ISO 12402-3: 2006: Personal Floatation Devices Part 3: Lifejackets, performance level 150 - Safety requirements. The life jackets shall be suited for persons with a mass exceeding 70kg and shall have a minimum buoyancy of 150N.

4. Activities

Dam	Activities
Maturation Pond 1	1) Supply and install 8 new safety ropes with loop rope and concrete anchor points. 2) Supply and install two new safety buoys with cabinet and grab line, including concrete base. 3) Supply 2 new life jackets.
Maturation Pond 2	1) Supply and install 8 new safety ropes with loop rope and concrete anchor points. 2) Supply and install new safety buoy with cabinet and grab line, including concrete base.
Ash Irrigation Pond	1) Remove and dispose of existing safety ropes, rope ladder and safety buoy and stand. 2) Supply and install new safety ropes and loop rope using existing anchor points. 3) Supply and install new rope ladder using existing anchor points. 4) Supply and install new safety buoy with cabinet and grab line, including concrete base.
Storm Water North	1) Remove and dispose of existing rope ladder and safety buoy and stand. 2) Supply and install new rope ladder using existing anchor points. 3) Supply and install new safety buoy with cabinet and grab line, including concrete base.
Storm Water South	1) Remove and dispose of existing rope ladder and safety buoy and stand. 2) Supply and install new rope ladder using existing anchor points. 3) Supply and install new safety buoy with cabinet and grab line, including concrete base.
Metsimaholo	1) Supply and install new rope ladder including concrete anchor points. 2) Supply and install new safety buoy with cabinet and grab line, including concrete base.
Evaporation Dam East	1) Supply and install 18 new safety ropes with loop rope and concrete anchor points. 2) Supply and install new rope ladder including concrete anchor points. 3) Supply and install new safety buoy with cabinet and grab line, including concrete base.
Evaporation Dam West	1) Supply and install 18 new safety ropes with loop rope and concrete anchor points. 2) Supply and install new rope ladder including concrete anchor points. 3) Supply and install new safety buoy with cabinet and grab line, including concrete base.
Dirty Recovery Dam	1) Supply and install new rope ladder including concrete anchor points. 2) Supply and install new safety buoy with cabinet and grab line, including concrete base.
Clean Recovery Dam	1) Remove and dispose of existing rope ladder and safety buoy and stand. 2) Supply and install new rope ladder using existing anchor points. 3) Supply and install new safety buoy with cabinet and grab line, including concrete base.
Mixed Recovery Dam	1) Remove and dispose of existing rope ladder and safety buoy and stand. 2) Supply and install new rope ladder using existing anchor points. 3) Supply and install new safety buoy with cabinet and grab line, including

	concrete base.
Primary oil settling pond A	1) Remove and dispose of existing rope ladder and safety buoy and stand. 2) Supply and install new rope ladder using existing anchor points. 3) Supply and install new safety buoy with cabinet and grab line, including concrete base.
Primary oil settling pond B	1) Remove and dispose of existing rope ladder and safety buoy and stand. 2) Supply and install new rope ladder using existing anchor points. 3) Supply and install new safety buoy with cabinet and grab line, including concrete base
Secondary oil settling pond A	1) Remove and dispose of existing rope ladder and safety buoy and stand. 2) Supply and install new rope ladder using existing anchor points. 3) Supply and install new safety buoy with cabinet and grab line, including concrete base
Secondary oil settling pond B	1) Remove and dispose of existing rope ladder and safety buoy and stand. 2) Supply and install new rope ladder using existing anchor points. 3) Supply and install new safety buoy with cabinet and grab line, including concrete base
Raw Water Dam	1) Remove and dispose of existing safety and loop ropes. 2) Supply and install 12 new safety ropes and loop rope using existing anchor points. 3) Supply and install new rope ladder including concrete anchor points. 4) Supply and install new safety buoy with cabinet and grab line, including concrete base. 5) Construction of 2 additional concrete anchor points for loop rope connection.

5. Quality asurance and control tests

5.1. Safety ropes and rope ladders

Safety ropes and rope ladders shall comply to SANS 943:2008. Delivery of ropes shall be accompanied by SABS certification.

5.2. Lifebuoys

Lifebuoys shall be in accordance with the SOLAS LSA code and shall have the following branded on the product:

- SOLAS LSA code.
- Drop height.
- Weight.

5.3. Lifejackets

Lifejackets shall comply to ISO 12402-3: 2006: Personal Floatation Devices Part 3: Lifejackets, performance level 150.

6. Defects period

Defects period shall be 24 months from the date of completion, or as stated in the Contract.

7. Environmental Requirements:

The *Contractor* shall ensure compliance to *Employer's* environmental requirements including but not limited to Matimba Environmental Management Plan, and other [relevant and applicable] Acts, regulations and standards.

8. Safety Requirements

The *Contractor* shall ensure compliance to *Employer's* safety requirements including but not limited to Construction Regulations, Occupational Health and Safety Act (Act 85 of 1993) and other [relevant and applicable] Acts, regulations, and standards.

9. Deliverables:

The Contractor shall provide the following deliverables including but not limited to:

- Quality Assurance and Control Data Books
- Construction methods statements with task specific risk assessments
- Construction Quality Control Plan (ITP)
- Material approvals for each material type. Proposed materials shall be pre-approved by the Project Manager/Designer.
- Safety File
- Execution plan and project programme

10. Housekeeping

The *Contractor* will ensure that the area of work is kept clean on a continuous basis. This will include the removal of existing debris and litter.

11. Additional requirements

- Tender must be submitted in the form of the Activity Schedule attached and prices given must be inclusive of all material costs, labour cost, management costs, overhead costs and the cost of all consumables required to do the work.
- The appointed *Contractor* shall be responsible to supply all PPE required to do the work.
- No power and water supply will be available at the area of work and the *Contractor* will be responsible to supply his own.
- The *Contractor* shall be responsible for the implementation of the entire SOW.
- The *Contractor* shall ensure compliance to Occupational Health and Safety Act (Act 85 of 1993), Construction Regulations and Employers safety requirements.

12. Seen and accepted by

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	:	**Signature**	:	
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Accepted by:	:	**Name**	:	Osmah Raphiri
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Accepted by:	:	**Name**	:	Sikhulile Tshabalala
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	:	**Date**	:	20/06/2023

13. Document approval

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