
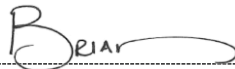

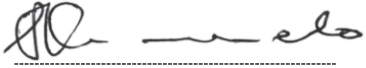

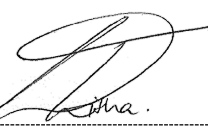
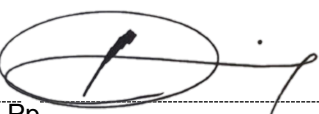
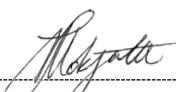


| | | |
|---|---------------|---------------------|
|  Eskom | Scope of Work | Arnot Power Station |
|---|---------------|---------------------|

| | | |
|--|-------------------------------|------------------------------|
| Title: Scope of work and Technical Evaluation | Unique Identifier: | |
| Criteria for Stripping, Assessment and Refurbishment of the following on an | Alternative Reference Number: | N/A |
| “As & When Required Basis”: | Area of Applicability: | Arnot Power Station |
| Submersible Pumps | Documentation Type: | Scope |
| Supply of New Submersible Pumps | Revision: | 2 |
| Supply of New Control Panels | Total Pages: | 9 |
| | Next Review Date: | N/A |
| | Disclosure Classification: | Controlled Disclosure |

| Compiled by | Tech Team Member | Tech Team Member | Reviewed by |
|---|---|---|---|
|  |  |  |  |
| Siphwiwe Nkosi | Brian Mokoena | Sithembiso Sibanyoni | Simon Khumalo |
| Senior Supervisor Technical Electrical | Senior Technician Electrical Engineering | Senior Advisor Technical Support | Manager Electrical Maintenance |
| Date: 05/11/2025 | Date: 04/11/2025 | Date: 04/11/2025 | Date: 04/11/2025 |

| Supported by | Accepted by | Approved by | Authorized by |
|---|---|--|---|
|  |  |  |  |
| Nkosinathi Malinga | Mlungisi Msomi | Bezi Mvula | Tshepo Mokgatle |
| Technical Support Manager | Acting Manager Electrical Engineering | Middle Manager Maintenance | Middle Manager Maintenance |
| Date: 05/11/2025 | Date: 06/11/2025 | Date: 05.11.2025 | Date: 06/11/2025 |

CONTENTS

| | Page |
|---|-------|
| 1. INTRODUCTION..... | 3 |
| 2. SUPPORTING CLAUSES | 3 |
| 2.1.1 Purpose | 5 |
| 2.1.2 Applicability | 5 |
| 2.2 NORMATIVE/INFORMATIVE REFERENCES..... | 6 |
| 2.2.1 Normative..... | 6 |
| 2.3 DEFINITIONS | 6 |
| 2.3.1 Classification | 6 |
| 2.4 ABBREVIATIONS | 6 |
| 2.5 ROLES AND RESPONSIBILITIES | 6 |
| 2.6 PROCESS FOR MONITORING..... | 6 |
| 2.7 RELATED/SUPPORTING DOCUMENTS | 6 |
| MANDATORY EVALUATION CRITERIA | 7 |
| QUALITATIVE TECHNICAL EVALUATION CRITERIA | 8 |

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

1. INTRODUCTION

Complete repair services are required at Arnot Power Station on all in-use submersible Varkie, sewage and flyght pumps. All maintenance and repairs need to be conducted in line with refurbishment standards. Competent and qualified personnel are required to carry out such maintenance and repair activities.

2. SUPPORTING CLAUSES

SCOPE

- All pumps to be cleaned properly, shot blasting are preferred.
- The Contractor to utilized skilled personnel for the refurbishment of the submersible pumps, CV's and qualifications of the following skills, electrician, winder and fitter to be submitted to the service manager prior to commencement of the contract.
- The Contractor shall repair all submersible pumps covered on the following plant, Water plant, SED plant South, Slurry, Trench, Terrace, Sewage, Raw sewage A & B, maturation pond 3, AWR, seepage, AWR pump house, Schoemanns dam, Recovery A & B, Station drains, Ash plant, pump side, Coal staith 4 and 5
- Removal of the windings is to be carried out strictly in accordance with SABS specifications (only burn out oven to be used).
- Method of varnishing is to be double dipped and bake.
- Paint work is to be done as per SABS 064 for the type of paint and method of application
 - Spray paint pump with (Dark Admiralty Grey SANS 1091 G12).
- Shaft journals, which are to be micro welded and where new shafts are to be provided shall be in accordance with SABS 0242
- Terminal leads must be clearly marked and of 15 metres of length to enable connections to be carried out.
- Ensure that stators removed from the casing are replaced in the original position
- Normal: Item in normal production line delivery within 14 working days, if delivery cannot be met in 14 days, Service Manager to be notified.
- Supply and deliver submersible /flyght pumps
 - The contractor shall notify the *Service Manager* when it is no longer viable to repair a submersible pump, proof of the above to be supplied. The *Service Manager* will notify the Contractor in writing if a new submersible pump must be supplied. Where the repair cost exceeds 70 % of the cost of a submersible pump the Service Manager is to be notified, upon which approval will be given to either continue with such repairs or supply a new replica. Where a replica is not available approval shall also be obtained from the *Service Manager* for the supply of a different type.
- Supply and deliver control panels as per sump pumps kilowatts
 - Supply direct online, start and stop control panels, with dry run protection to detect and stop the pump when the sump water level drops.
 - Panels with a minimum of 300mm width, 445mm height and 200mm depth (inside of the panel) dimensions, and must be painted orange.
 - Overload protection to protect the pump from overcurrent
 - Three (3) phase earth leakage to safeguard people and the circuit against faults
 - Amp and voltage indication to be installed to indicate if there's current or voltage on the circuit.
 - Control and power fuses to isolate and protect the two circuits
 - Use standards panel wiring for power SANS and control circuits
 - All panels to be delivered with an electrical drawing
- The correct PPE must be worn when performing work.
- Pump stator rewind/bake depending on the scope given and failure report
- Fit new drive end bearing (DE)
- Fit new drive non end bearing (NDE)

CONTROLLED DISCLOSURE

**Assessment and Refurbishment of the following on an
“As & When Required Basis”: Submersible Pumps, Supply of
New Submersible Pumps and Supply of New Control Panel**

Unique Identifier: **Identifier**

Revision: **2**

Page: **4 of 9**

- Fit new O-ring
- Fit new upper and lower seals
- Replace suction cover if damaged
- Replace impeller if damaged
- Replace or repair damaged cable terminal boxes
- Replace 15metre cable
- Recast cable with resin
- Test pump into water and let it run for about 20 minutes while monitoring amps and pressure
- Spray paint pump with Dark Admiralty Grey SANS 1091 G12)
- Signed off quality control report/ checklist
- Prepare pump for delivery

| 1. MACHINE DETAILS | | | |
|--------------------|---|--------------|---------|
| MAKE | ASHLEY / AMANDLA VARKIE SLURRY SUBMERSIBLE PUMP | VOLTAGE (kV) | 380V AC |
| RATING (kW) | 5.2 - 5.5KW | CURRENT (A) | 12.1 A |
| LOCATION | ASH PLANT | SPEED (rpm) | 1450rpm |

| 2. MACHINE DETAILS | | | |
|--------------------|---|-------------|----------|
| MAKE | ASHLEY / AMANDLA VARKIE SLURRY SUBMERSIBLE PUMP | VOLTAGE (V) | 380V AC |
| RATING (kW) | 7.5KW | CURRENT (A) | 16.2A |
| LOCATION | ASH PLANT | SPEED (rpm) | 1450 rpm |

| 3. MACHINE DETAILS | | | |
|--------------------|---|--------------|----------|
| MAKE | ASHLEY / AMANDLA VARKIE SLURRY SUBMERSIBLE PUMP | VOLTAGE (kV) | 380V AC |
| RATING (kW) | 8 - 11KW | CURRENT (A) | 22A |
| LOCATION | Various plant | SPEED (rpm) | 2900 rpm |

| 4. MACHINE DETAILS | | | |
|--------------------|---|--------------|----------|
| MAKE | ASHLEY / AMANDLA VARKIE SLURRY SUBMERSIBLE PUMP | VOLTAGE (kV) | 380V AC |
| RATING (kW) | 22KW | CURRENT (A) | |
| LOCATION | ASH PLANT | SPEED (rpm) | 1450 rpm |

| 5. MACHINE DETAILS | | | |
|--------------------|---|--------------|----------|
| MAKE | ASHLEY / AMANDLA VARKIE SLURRY SUBMERSIBLE PUMP | VOLTAGE (kV) | 380V AC |
| RATING (kW) | 37KW | CURRENT (A) | |
| LOCATION | ASH PLANT | SPEED (rpm) | 1450 rpm |

| 6. MACHINE DETAILS | | | |
|--------------------|--------------------------------|--------------|---------|
| MAKE | CRI FLYGHT SUBMERSIBLE PUMP | VOLTAGE (kV) | 380V AC |

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| | | | |
|---------------------------|-------------------------|--------------|----------|
| RATING (kW) | 2.2- 2.6KW | CURRENT (A) | 5.5A |
| LOCATION | Various plants | SPEED (rpm) | 2850 rpm |
| 7. MACHINE DETAILS | | | |
| MAKE | FLYGHT SUBMERSIBLE PUMP | VOLTAGE (kV) | 380V AC |
| RATING (kW) | 5.2 - 5.5KW | CURRENT (A) | 12.1A |
| LOCATION | Various plants | SPEED (rpm) | 1450 rpm |

| | | | |
|---------------------------|-----------------------------|--------------|----------|
| 8. MACHINE DETAILS | | | |
| MAKE | ABS FLYGHT SUBMERSIBLE PUMP | VOLTAGE (kV) | 380V AC |
| RATING (kW) | 11KW | CURRENT (A) | 22A |
| LOCATION | Various plants | SPEED (rpm) | 1450 rpm |

| | | | |
|---------------------------|-------------------------|--------------|----------|
| 9. MACHINE DETAILS | | | |
| MAKE | SEWAGE SUBMERSIBLE PUMP | VOLTAGE (kV) | 380V AC |
| RATING (kW) | 13.5KW | CURRENT (A) | 28A |
| LOCATION | SEWAGE PLANT | SPEED (rpm) | 1450 rpm |

| | | | |
|----------------------------|-------------------------|--------------|----------|
| 10. MACHINE DETAILS | | | |
| MAKE | FLYGHT SUBMERSIBLE PUMP | VOLTAGE (kV) | 380V AC |
| RATING (kW) | 37KW | CURRENT (A) | |
| LOCATION | | SPEED (rpm) | 1450 rpm |

| | | | |
|----------------------------|-----------------------------------|--------------|----------|
| 11. MACHINE DETAILS | | | |
| MAKE | FLYGHT SUBMERSIBLE PUMP - JST220S | VOLTAGE (kV) | 380V AC |
| RATING (kW) | 22KW | CURRENT (A) | 18A |
| LOCATION | SEWAGE PLANT | SPEED (rpm) | 1450 rpm |

| | | | |
|----------------------------|---|--------------|----------|
| 12. MACHINE DETAILS | | | |
| MAKE | WEIR WARMAN TWIN VOLUTE FLYGHT SUBMERSIBLE PUMP (WP 20) | VOLTAGE (kV) | 380V AC |
| RATING (kW) | 30KW | CURRENT (A) | 60A |
| LOCATION | Various plants | SPEED (rpm) | 1450 rpm |

2.1.1 Purpose

The purpose for this Scope & Technical Evaluation Criteria is for input into the commercial package for tendering for the submersible pumps contract.

2.1.2 Applicability

Applicable to Arnot Power station.

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2.2 NORMATIVE/INFORMATIVE REFERENCES

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

2.2.1 Normative

- [1] Strip, assess and refurbishment of submersible pumps and to supply and deliver new pumps and control panels on an “as and when required basis”

2.3 DEFINITIONS

| Definition | Description |
|------------|--|
| Critical | Refers to equipment whose failure in service would have an appreciable probability of causing loss of availability of generating plant and or of causing unsafe conditions for personnel or both |

2.3.1 Classification

Controlled Disclosure: Controlled Disclosure to external parties (either enforced by law, or discretionary).

2.4 ABBREVIATIONS

| Abbreviation | Description |
|--------------|-------------------------------|
| QC | Quality Check |
| SAP | Systems Application Programme |

2.5 ROLES AND RESPONSIBILITIES

Technical Support Services is responsible for Quality Checks on all delivered goods.

2.6 PROCESS FOR MONITORING

Follow materials management goods receipt process for QC

2.7 RELATED/SUPPORTING DOCUMENTS

NEC TSC - Service information

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MANDATORY TECHNICAL EVALUATION CRITERIA

| | Mandatory Criteria Description | Reference to Tender Returnable | Motivation for use of Criteria | Yes/No |
|----|---|---|--|---------------|
| 1. | Workshop test bay facility compliance | Attach pictures of testing facility and a tanker (for testing the pumps) large enough to accommodate submersible pumps up to 50kW | To ensure suppliers have a workshop that is compliance for repairing submersible pumps | Yes / No |
| 2. | Compliance to ISO 9001:2015 Standard for rewinding & refurbishment of Submersible pumps | Submit proof of ISO 9001:2015 accreditation for rewinding & refurbishment of Submersible pumps | To ensure suppliers have a workshop that is compliance for repairing submersible pumps | Yes / No |

If mandatory criteria 1 & 2 are met, a qualitative assessment will be done and if the service provider successfully meets the threshold, a factory assessment will be done to verify all the information provided. If the information provided at tendering stage is a negative misrepresentation of the company, the tenderer will be technically disqualified through this criterion.

QUALITATIVE TECHNICAL EVALUATION CRITERIA

| | Qualitative Technical Criteria Description | Reference to Technical Specification / Tender Returnable | Weight (%) | Total Weight (%) |
|----|--|---|------------|------------------|
| 1. | Data pack for previous repairs completed and Quality Control Checklist, in line with the scope: | QCP's to be submitted, QCP's to include procedural steps that will be followed and have space for recordings where needed together with completed data pack for repairs previous completed | | 30 |
| | | QCP's submitted, clear procedural steps with space for recordings and complete data pack | 30 | |
| | | QCP's submitted, clear procedural steps with no space for recordings and complete data pack | 15 | |
| | | QCP's submitted, no clear procedural steps or no space for recordings and no data pack | 5 | |
| | | No submission | 0 | |
| 2. | Testing equipment's calibration certificates issued by an accredited body | Submit calibration certificates of the following testing equipment's | | 20 |
| | | 380V-690VAC Test-bay Facility Calibration Certificate, Insulation Resistance Tester, Multi-meter, Flow Meters & Pressure Gauges | 20 | |
| | | Insulation Resistance Tester, Multi-meter, Flow Meters & Pressure Gauges | 10 | |
| | | Only one of each i.e. multi-meter or pressure gauges or flow meters | 5 | |
| | | No Submission | 0 | |
| 3. | Technical data sheets | Submit data sheets for different types of submersible pumps (2.2kW – 50kW) as per the pricelist | | 20 |
| | | 4 x Datasheets for various submersible pump designs submitted | 20 | |
| | | 2 x Datasheets for various submersible pump designs submitted | 10 | |
| | | 1 x Datasheet submitted | 5 | |
| | | No Submission | 0 | |

**Assessment and Refurbishment of the following on an
“As & When Required Basis”: Submersible Pumps, Supply of
New Submersible Pumps and Supply of New Control Panel**

Unique Identifier: **Identifier**
Revision: **2**
Page: **9 of 9**

| | | | | |
|----|--|--|----|----|
| 4. | Previous work completed on submersible pumps | Submit a copy of an order or contract of similar work completed: Note: Orders should clearly indicate the different types of pumps repaired, sizes in kilowatts and the description of the scope of work carried out. | | |
| | | 3 x Orders or Contracts | 30 | 30 |
| | | 2 x Orders or Contracts | 20 | |
| | | 1 x Order or Contract | 10 | |
| | | No order or contract | 0 | |
| | | TOTAL | | |

The Threshold for the Technical Evaluation is 75%