Eskom	Scope of work	Technology

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1. INTRODUCTION

Duvha unit 1-6 fuel oil pumps must be refurbished to return them to the design base.

2. SUPPORTING CLAUSES

2.1 SCOPE

The document covers the works information for the minimum technical requirements for the stripping, assessment, refurbishment, final assembly, Contractor workshop testing, and delivery of the fuel oil pumps for boilers 1-6 at Duvha Power Station.

2.1.1 Purpose

The purpose of this specification is to achieve a minimum cost refurbishment specification of the fuel oil pumps based on proven technology and good engineering practice while helping to ensure the best fuel oil pumps availability and reliability. The scope also enables replacement of the pumps and pump inserts in cases where inspection reports renders these assets not refurbishable.

2.1.2 Applicability

This document shall apply to Duvha Power Station

2.2 NORMATIVE/INFORMATIVE REFERENCES

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

2.2.1 Normative

[1] ISO 9001 Quality Management Systems.

2.2.2 Informative

2.2.3 Disclosure Classification.

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

2.3 ABBREVIATIONS

Abbreviation	Description
HP	High pressure
KW	Kilo Watt
MPA	Mega Pascal
OEM	Original Equipment Manufacturer
RPM	Revs Per Minute

3. WORKS INFORMATION FOR THE REFURBISHMENT OF DUVHA UNIT 1-6 FUEL OIL PUMPS

3.1 DESCRIPTION OF THE WORKS

The works include the collection, inspection, refurbishment, replacement (depending on inspection report), and delivery to site of:

- SNH 1300 screw type fuel oil off-loading pumps,
- SNH 660 screw type fuel oil booster pumps,
- SMH 440 screw type fuel oil HP pumps,
- screw type fuel oil pump inserts,

3.1.1 Component descriptions

SUBSYSTEM			
№	**REPLACE/ REFURBISH**	**COMPONENT DESCRIPTION**	**STOCK NUMBER**
	Refurbish/ Replace	SNH 660 PUMP TYPE: FUEL OIL BOOSTER SELF PRIMING 3 ROTOR SCREW PUMP; SIZE:125 X 100 MM; CAPACITY: 660 L/MIN; SPEED: 1475 RPM; RATING: 6 BAR; DRIVER: MOTOR; APPLICATION: NORTH FUEL OIL PLANT; WITH FITTED WITH PRESSURE RELIEF DS44A, WITH 1/8 INCH TAPPING ON BEARING HOUSING PART NO: SNH660ER46 D6.7-W1-G1/8",	177461
	Refurbish/ Replace	SNH 1300 OFFLOADING PUMP "PUMP, ROTARY: TYPE: SCREW PORT SIZE: 125 MM CAPACITY: 74.4 M3/HR SPEED: 1450 RPM	177406

		RATING: 6 BAR APPLICATION: FUEL OIL OFFLOADING BAY FITTED WITH PRESSURE RELIEF VALVE DV50D(55BAR)-W132 PART NO: SNH 1300 R46	
	Refurbish/ Replace	ALLWEILER SNH 440 MAIN HP PUMP: PUMP TYPE: SCREW; SIZE: 254 X 273 MM; CAPACITY: 568-622 LPM; SPEED: 1450 RPM; RATING: 55 BAR; HORIZONTAL FOOT PUMP; UNIT DRIVE SPINDLE; SPINDLE PITCH DIRECTION RIGHT (STANDARD); EXTERNAL ANTIFRICTION BEARING, CAPABLE OF RELUBRICATION UNCOOLED, UNHEATED MECHANICAL SEAL; COMPLETE PUMP WITH 1/8 INCH TAPPING ON BEARING HOUSING FOR TEMPERATURE PROBE PART NO: SMH440 ER40E8.9-W33-G1/8" ER40E8.9-W33	187553
	Refurbish/ Replace	MAIN PUMP INSERT: CARTRIDGE: TYPE: ROTOR SCREW PUMP; MATERIAL: SILAFONT INSERT UNIT WITH 1/8 INCH TAPPING ON BEARING HOUSING FOR TEMPERATURE PROBE PART NO: SME440 ER40E8.9 W12E G1/8" ER40E8.9-W12E;	252919
	Refurbish/ Replace	BOOSTER PUMP INSERTS: TYPE: ROTOR SCREW PUMP; DIMENSIONS: 825 MM; MATERIAL: EN-GJL-250; FOR USE ON SNH 660 ER46 D6-7-	557116

		W1V PUMP; MANUFACTURER ALLWEILER	

3.1.2 Fuel oil pump Refurbishment Requirements

The fuel oil pumps are to be refurbished as follows:

- Collect fuel oil pump from Duvha Power Station
- In the presence of Eskom Representative, Strip fuel oil pump , inspect all internal components for condition
- Carry out a full engineering inspection and confirm all dimensions are correct. Note the dimensions and clearances are proprietary information from the OEM. The Contractor to demonstrate for each pump that the clearances and dimensions are evaluated against the OEM recommended sizes.
- Submit a comprehensive engineering report on the condition of each fuel oil pump component regarding, but not limited to wear, mechanical damage, overheating, and any out of normal condition observed.
- With the results of the above inspection reports, the Contractor shall prepare a Scope of Work which details the actions required to refurbish the fuel oil pump, ensuring reliable operation when installed on the plant.
- Components that require complete replacement shall be detailed as such in the inspection report and be replaced with OEM original parts in order to maintain the design base. Damaged or Replaced components remain Eskom's assets and shall be delivered together with the refurbished pump unless otherwise permitted by Eskom.
- The Contractor shall prepare and submit an Inspection and Test Plan for acceptance by Eskom Engineering and Maintenance representatives. The Inspection and Test Plan shall be broken down into activities that will ensure the quality of the materials and workmanship regarding the refurbishment of the fuel oil pump.
- Refurbish the pumps in accordance with agreed scope of work
- Re-assemble the fuel oil pump
- In the presence of Eskom Representative, Test run the fuel oil pump to meet requirements as per Section 3.1.1
- Transport to site
- On delivery of the fuel oil pump, submit a complete data pack containing all the relevant documentation pertaining to the refurbishment of the fuel oil pump.

4. WARRANTY PERIOD

Following the delivery of the fuel oil pump, which conforms to the Eskom specification, the warranty period shall extend to a period of 12 months after successful commissioning of the equipment.

The Contractor shall be responsible for making good any defect in or damage to any part of the works that may occur during the warranty period that arises from either:

- Defective material
- Any act or omission of the Contractor during the Defects Liability Period.

The warranty shall be limited to all components and workmanship undertaken by the Contractor during the execution of the refurbishment works. The workmanship warranty shall include the installation of any free-issue components. However, the material warranty period shall not extend to any free-issue components.

5. QUALITY ASSURANCE

The Contractor is responsible for the control of manufacture in accordance with the applicable sections of Eskom Specification 39:60 Contract quality requirements. This includes but is not limited to:

- The implementation of quality management compliant with QM 58
- Submission of Inspection and Test Plans to Eskom and their appointed inspection authorities for review and approval prior to the commencement of any work.
- Giving appropriate advanced notification of inspection and test to the relevant inspection authorities
- Submission of quality records dossier to Eskom upon completion of the refurbishment work
- Obtaining manufacturing release forms from Eskom before related items are delivered to site.

In addition to the requirements of the Eskom Specification, the Contractor shall ensure that concession requests and where required, rework procedures that impact on drawings and design specifications are submitted to Eskom for approval.

The Contractor shall submit a Quality Plan to Eskom within one week of the contract being placed and in advance of commencement of procurement of refurbishment components.

Representatives of Eskom will visit the Contractor's works in accordance with the Quality Plan milestones; sign off hold points and to witness important tests.

6. DOCUMENTATION AND INFORMATION REQUIRED

Below is the list of all documents required:

- Refurbishment report
- Material test certificates
- Refurbishment programme
- Quality plan

7. AUTHORISATION

This document has been seen and accepted by:

Name & Surname	Designation	Signature
Atang Khutoane	Senior Advisor Boiler Maintenance Technical Support	
Peter Simelane	Oil burners Maintenance Supervisor	
Dumisani Thabang	Senior advisor Maintenance Technical Support	
Ivan Hartman	Asset management	

8. REVISIONS

Date	Rev.	Compiler	Remarks
09 July 2020	1	T Ziqubu	1st draft