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PART A REQUEST FOR INFORMATION(RFI)			
Description of the works/goods/services	The Supply and Specifications for “Matimba Condensate pumps Mechanical Seal”		
Deadline for submission	27 September 2022	At (South African Standard Time)	14:00
Tender Office address	<b>THE TENDER OFFICE MAIN SECURITY GATE, THE TENDER BOX MATIMBA POWER STATION NELSON MANDELA DRIVE LEPHALALE 0555</b>		


Eskom Holdings SOC Ltd (“Eskom”) invites you to submit an:

- **Request for information (RFI)** to submit information for the works/goods/services as stated in the table. This RFI is a stand-alone information-gathering and market-testing exercise, intended only to inform and assist Eskom’s further deliberation and development of a strategy for the Supply and Specifications For “**The Supply and Specifications for “Matimba Condensate pumps Mechanical Seal”** Eskom may request indicative prices if so stated in this RFI.

Eskom has delegated the responsibility for this **RFI** to the signatory of this document, whose details can be found below.

We look forward to receipt of your response.


Yours faithfully

Name	Designation	Signature	Date
Mpho Motshegoa	Senior Advisor Procurement		2022.08.18
Telephone number	014 763 8538	Fax and/or e-mail address	motshemj@eskom.co.za

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<b>PART B</b> <b>RESPONSE SHEET IN TERMS OF A REQUEST FOR INFORMATION</b> <b>To be completed by the supplier</b>			
<b>To</b>	Eskom Holdings SOC Ltd	<b>Date</b>	
<b>Attention</b>			
<b>Tel no</b>		<b>Fax no and /or e-mail address</b>	
<b>From</b>		<b>Address</b>	
<b>Address</b>			
<b>Sender</b>			
<b>Description of the works/goods/services</b>			


Please find below our response to Eskom's questions:

No.	Question	Please indicate your response in this column
1.	<b>Your contact name and contact details</b>	
2.	<b>Company registration number</b>	
3.	<b>Brief description of previous experience and Description of the solution that you can offer</b>	
4	<b>Returnable for this RFI – See Section 4</b>	

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### INTENT OF THIS RFI

The intent of this RFI is strictly an information-gathering and market-testing exercise.

### METHOD OF DELIVERY

This RFI forms part of the formal Eskom tender process and as such must be submitted in the Tender Office address as per above.

### FORMAT OF SUBMISSION

The information must be provided as a hard copy document.


### IMPORTANT NOTES

1. Due to the specific need that this RFI process has to fulfil, Eskom wishes to clarify that this invitation is not intended to impede, amend or replace any current or future procurement process that Eskom has engaged in or will engage in.
2. Eskom reserves the right, in its absolute discretion, at any stage and without notice, to terminate further participation in the process by any Party, to select or disqualify any interested participant from further engagement, to amend and/or terminate this RFI process or any future process pursuant to this process.
3. This RFI is a stand-alone information-gathering and market-testing exercise, intended only to inform and assist Eskom's plans in pursuing solutions to the current issues experienced on the ACC's at Matimba.
4. Any and/or all information submitted by any and/or all respondents may be used without the necessity of acknowledging the source, and without such entity gaining any rights in respect of such a solution, including but not limited to any intellectual property rights.
5. No portion of any of the information submitted will be treated as confidential and respondents should **NOT** submit sensitive or confidential information.
6. Any information provided pursuant to this RFI process and any subsequent processes and/or engagement is not confidential. Through making a submission a respondent accept the terms and conditions which governs this process.
7. All participants responding to this RFI process need to ensure that they have received all information and remain solely responsible for satisfying themselves as to the information required in responding hereto and are fully responsible for all costs incurred in relation hereto and under no circumstances will any resultant cost be borne by Eskom.
8. Where any information or clarification is required, please do not hesitate to send an email to **Mpho Motshegoa** at [MotsheMJ@eskom.co.za](mailto:MotsheMJ@eskom.co.za). Contacting the system engineer is not allowed as all communication must go through the buyer.

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## 1 INTRODUCTION

Matimba power station Condensate Pumps namely Condensate Extraction Pumps (CEP), Condensate Transfer Pumps (CTP) and LP Heater Drain Pumps which are to be covered on this RFI.

- **The condensate extraction pumps (CEP's)** are arranged in the turbine house underneath the ACCCT at 3.6 meter level. The electric drives are set up on the zero-meter level platform. The condensate extraction pumps are designed as full-load pumps, one of which is on constant standby and each have a maximum capacity of 500 kg/s. The input power is 1150 kW.

These pumps are two-stage pumps of the caisson, or barrel, type. The axial thrust is partly equalised by holes in the impellers. The remaining thrust is taken up by the drive end bearing, which is a Michell vertical thrust and guide bearing with oil lubrication. The lubricating oil is cooled by means of an oil cooler which is an integral part of the bearing housing and is supplied with auxiliary cooling water.

The spider bearing, the 1st stage-bearing sleeve, and 2nd stage-bearing sleeve take the form of plain bearings, which are lubricated by the condensate. The plain bearing incorporated in the suction end is likewise condensate-lubricated. Due to the low pressure existing in this area, the condensate needed for lubrication is extracted after the first pump stage.


A shaft gland is arranged where the drive shaft penetrates the head and enters the motor pedestal. The leak-off bush with allied leak-off pipe is provided ahead of the shaft gland to reduce the pressure to positive suction pressure. The pump is sealed against atmosphere by means of a water-sealed gland packing and lantern ring assembly.

- **LP Heater Drain Pumps:** The two drain pumps are located under the LP heater 1 at level - 2m in the turbine house. Designed as vertical single inlet barrel pumps of the 3-stage segmental type, it is possible to match the barrel length to the specific requirement to ensure reliable and cavitation free operation of the pumps at extremely low NPSH values. The pump is suspended in the barrel on a discharge pipe which is connected at the top to the suction/discharge head. As these pumps operate under vacuum, a seal water barrier has to be provided between the barrel and the suction and discharge head.

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The shaft gland is arranged where the drive shaft leaves the head and enters the motor pedestal. The pump is sealed against atmospheric pressure by means of a gland packing and lantern ring assembly which is supplied with seal water.

The pump shaft runs in water lubricated plain bearings housed in the suction and discharge casings as well as in an intermediate bearing. Since the pressure existing in the suction casing is not sufficient for lubrication, condensate which is extracted after the second stage is used to lubricate the bearing.


- **Condensate Transfer Pumps (20kg/s)** Since the turbine condensate tank operates under vacuum the condensate transfer pumps and the LPH1 drain pumps are designed as segmental type barrel pumps. The 20kg/s pumps transfer water from the TCT to the MUWDA under normal conditions. Due to the MUWDA being restricted to a maximum flow of 28kg/s, the normal make-up supply will have priority over the flow from the 20kg/s transfer pumps. Both sized for a delivery rate of 20 kg/s, the condensate transfer pumps have only two pump stages. Otherwise, the design features are identical to those of the LP heater drain pumps.

The third **Condensate transfer pump CTP (83kg/s)** is designed for a delivery rate of 83 kg/s. It is likewise a segmental-type barrel pump, but with only a single stage. Contrary to the multi-stage pump, the pump shaft in this case runs only in a water-lubricated plain bearing arranged in the discharge casing of the pump. Protective trip of transfer pump C will result from a low level in TCT and from overload protection on the motor. The 83kg/s pump transfers water from the TCT to the ACCCT during emergency conditions or when the 20kg/s

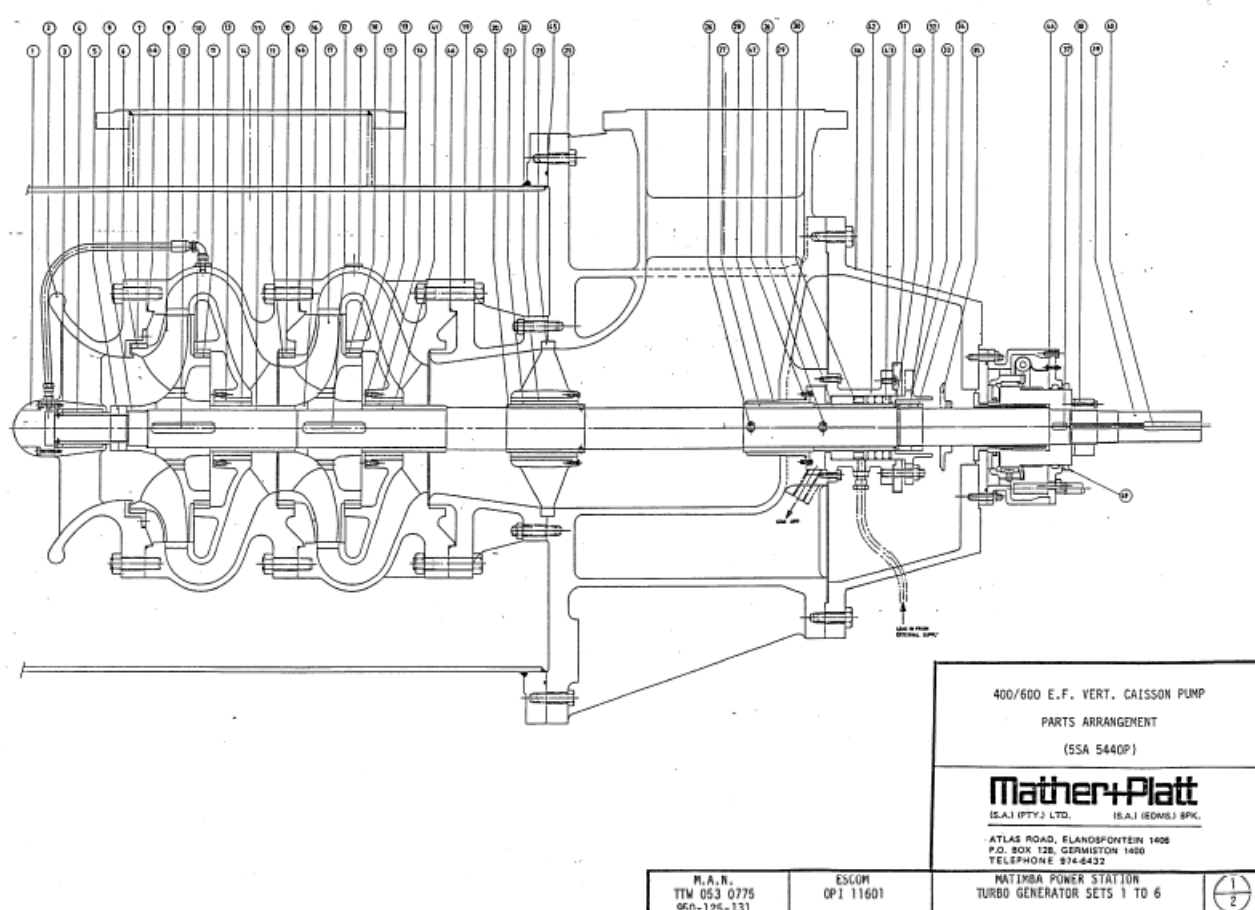
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pumps cannot maintain the TCT level. The pump can also be used to dump water to the BBDV during start-up when the water quality is not within specification.



**Figure 1: Matimba CEP Sectional Drawing**

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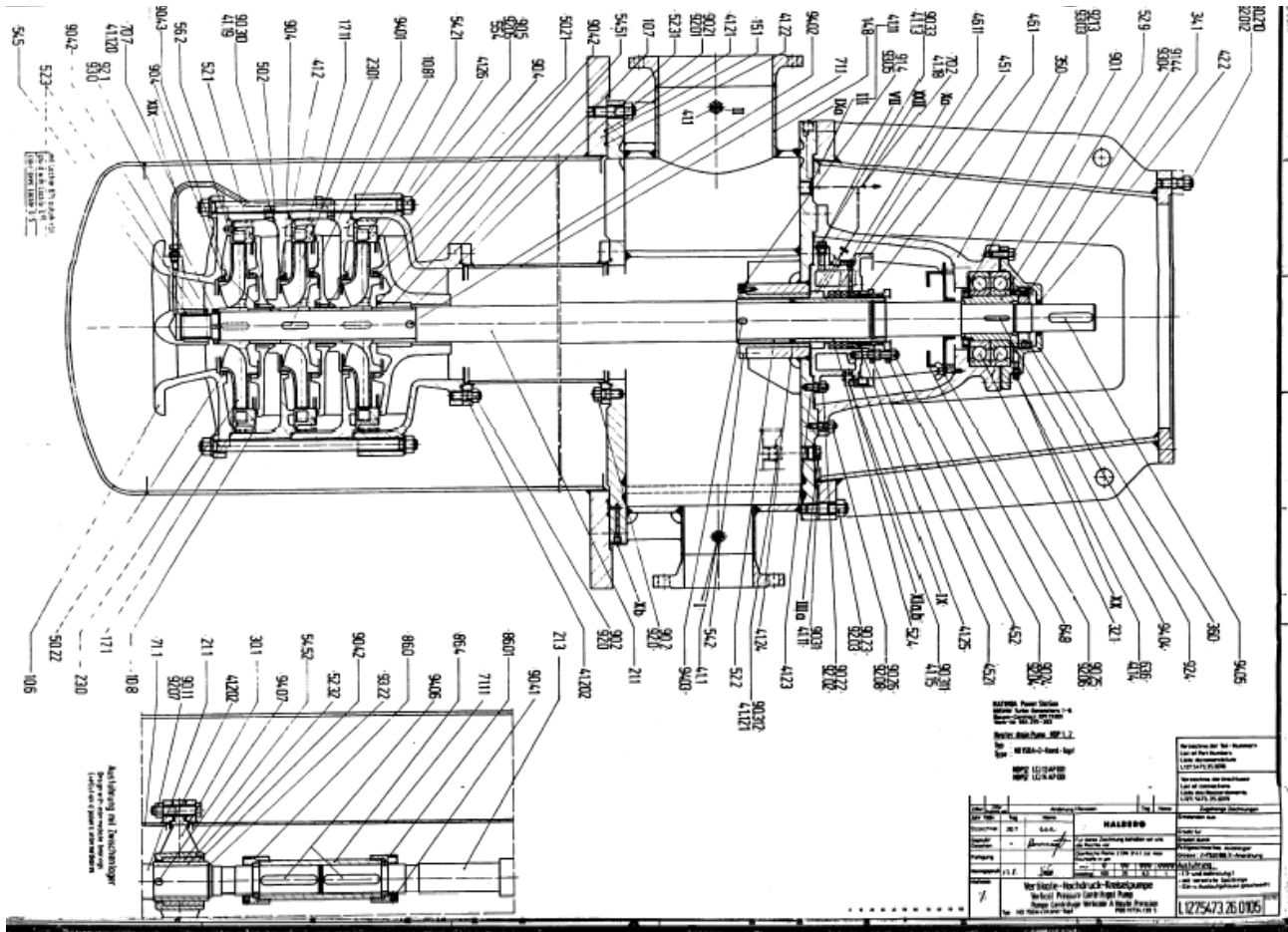


Figure 2: Matimba LP Heater Drain Pump Sectional Drawing

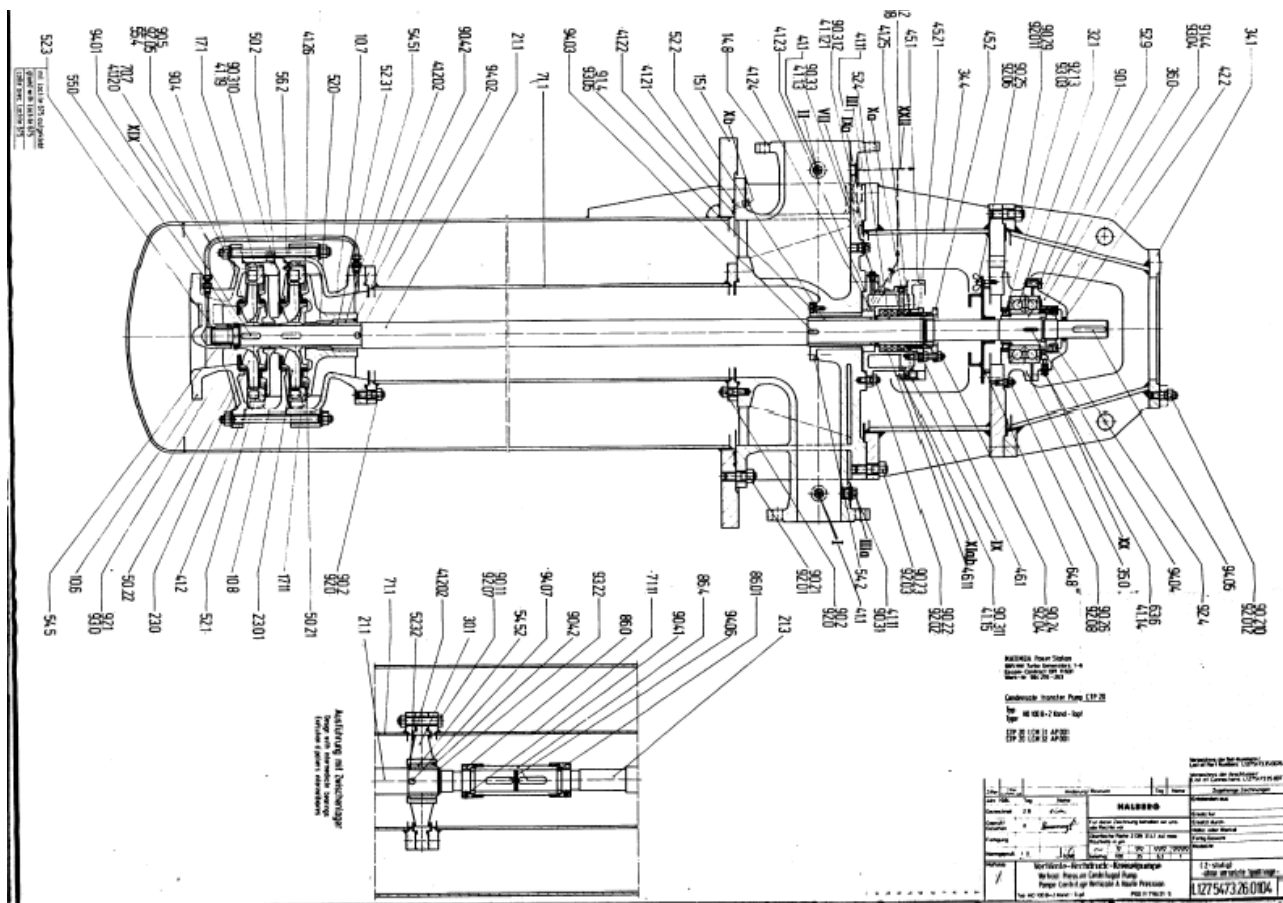
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### Figure 3: CTP 20kg/s Sectional Drawing

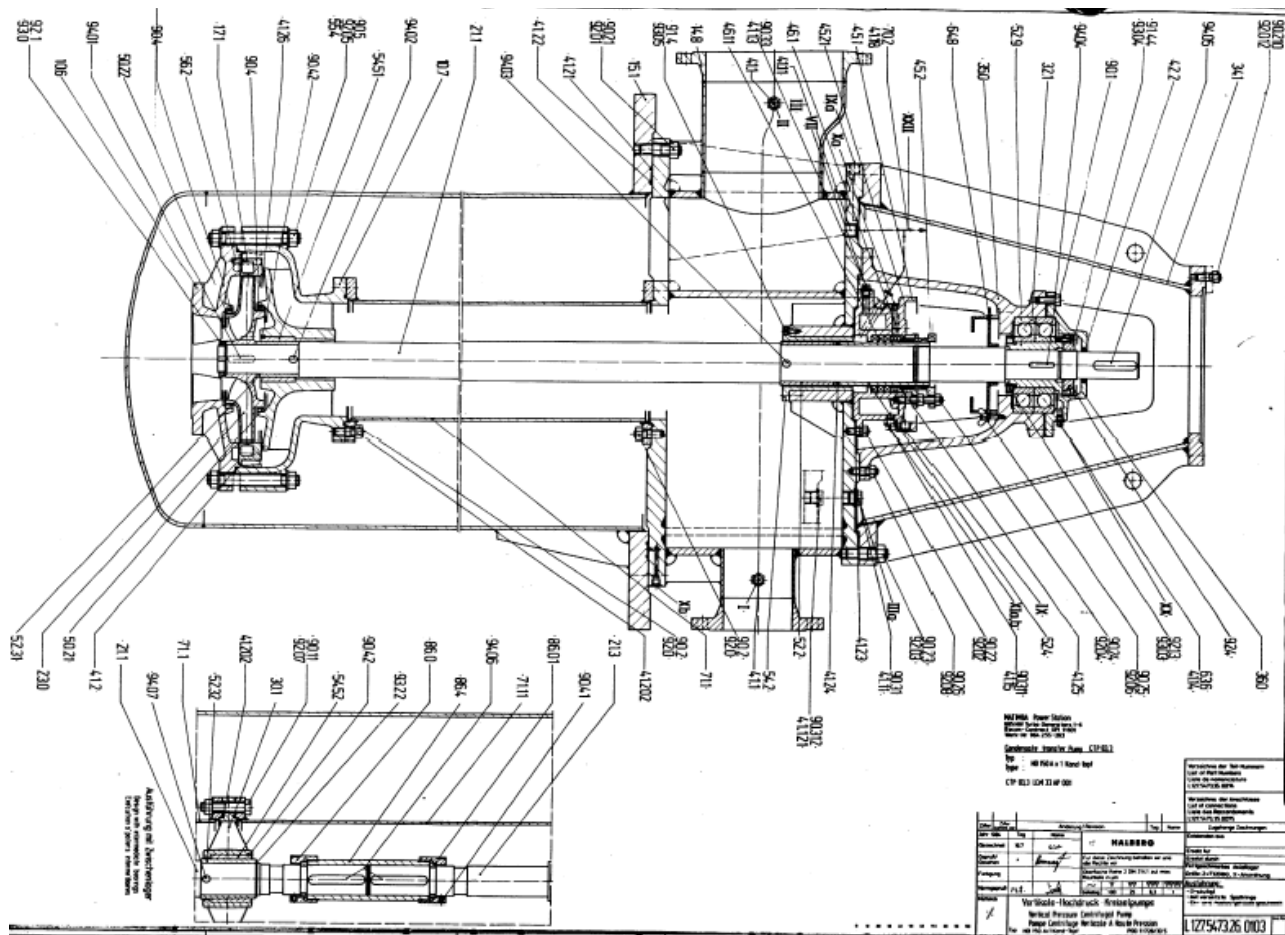
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**Figure 4: CTP 83 kg/s Sectional Drawing**

## 2 SUPPORTING CLAUSES

## 2.1 SCOPE

This document covers the technical specification for the design, supply and installation intended to ensure reliable and adequate Mechanical Seals on Condensate Pumps. This solution is applicable to the 21 Condensate Pumps Unit 1 to Unit 3 at Matimba.


### 2.1.1 PURPOSE

The purpose of the document is to provide technical requirements for the scope of work w.r.t. the design, supply, and installation and commissioning of the proposed solution for Matimba's Condensate pumps mechanical seals.

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## 2.2 DEFINITIONS

- Pump – A mechanical device using suction or pressure to raise or move liquids.
- Mechanical Seals - are devices that are used to provide a seal at the point of entry or exit of a rotating shaft. Typically it is used to prevent the leakage of one high pressure fluid into a lower pressure fluid.

## 2.3 ABBREVIATIONS

CTP's	Condensate Transfer Pumps
CEP's	Condensate Extraction Pumps
LP	Low Pressure

### 2.3.1 DISCLOSURE CLASSIFICATION

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

## 3 THE WORKS

### 3.1 BACKGROUND

As described in Section 1, a solution is required that will be installed to ensure adequate and reliable mechanical seals on the condensate pumps.

### 3.2 EXISTING SYSTEM

Matimba has the Glands packing in place. It is necessary to install the Mechanical Seals on this pumps to ensure that the Loss of water and high maintenance on the glands is reduced by introducing the mechanical seals on the Condensate Pumps.


### 3.3 DESIGN REQUIREMENTS

- Split Mechanical Seal
- Complete Mechanical Seal of any type.

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#### 4 SUBMISSION FOR THIS RFI

A Mechanical Seal, as described above, for each one of the 21 Condensate Pumps is necessary. The Supplier shall provide the following information as part of this RFI:

- Type of Mechanical Seals.
- Life span of the Seal.
- Specifications.

Yours faithfully

Name	Designation	Signature	Date
Telephone number		Fax and/or e-mail address	

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