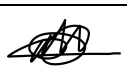
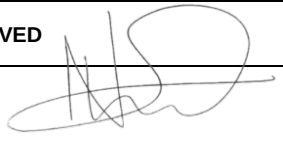
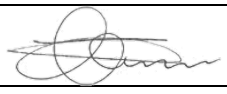
Eskom Generation	**Scope of Work** **Change the hollow shaft configuration**	**Doc. no. : N/A** **Rev.: 0** **Total pages: 1 of 3**
Matimba Power Station		**Reference Document: PS/290/003**

System	**System Engineer**		**Date**
Ash Handling Plant/ Mechanical	Shandukani Manena		2024/11/20
	APPROVED		**Date**
Auxiliary Engineering H.O.F	Gift Nkuna		2024/11/20
Engineering Manager	Jacky Mathobela		2024/11/20

1. Background

Matimba Power Station ash conveyor belt drive systems make use of hollow shaft low-speed couplings, the major issue is the locking mechanism that requires 24 hours to tighten and another 24 hours loosen. This increases plant down time and delay the plant return to service. One viable solution is to change low-speed coupling configuration from hollow shaft to solid flange coupling. This new configuration would require introducing a stub shaft to transfer output torque from gearbox, which means the drive train will have to move outwards to create space for the stub shaft also changing the overall length of the drive pulley. The new configuration's locking mechanism reduces the time require for tightening and loosening to less than 1 hour. This document entails the scope of work for this plant modification.

2. Plant description

2.1. General layout

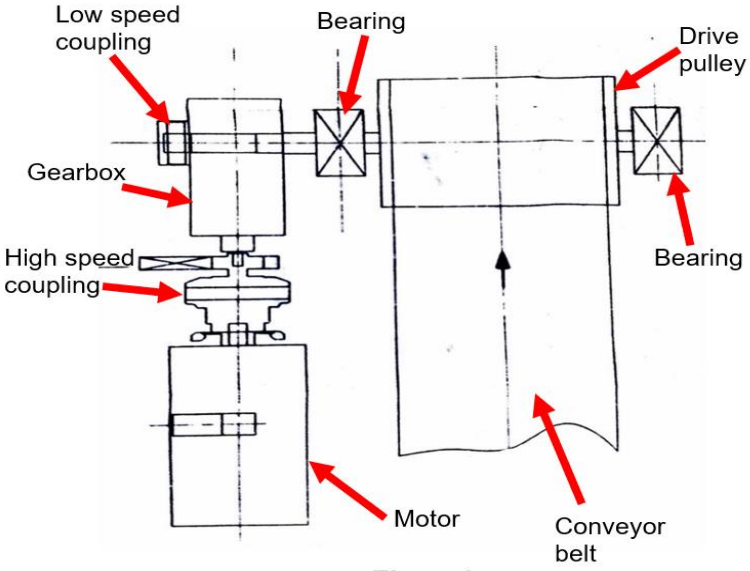


Figure1

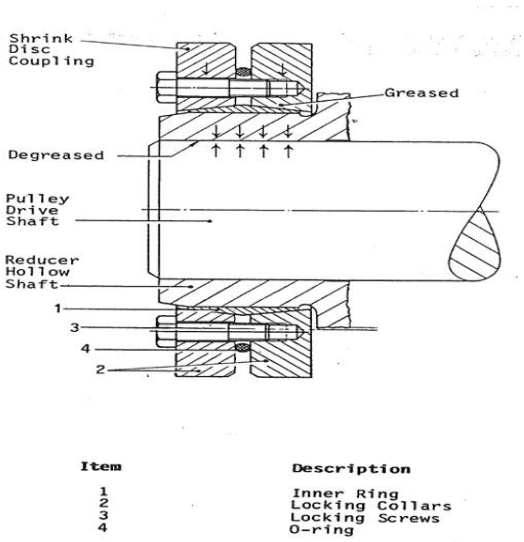


Figure 2

The ash handling plant is responsible for discharging ash from the power station to the ash dump through a series of conveyor belts. These conveyor belts are driven by a motor and gearbox drive train connected to the drive pulley of the specific conveyor belt. Figure 1 above shows the general layout of the conveyor drive arrangement. Couplings are used to join two components together, in this case to also transfer torque from a driving component to a driven component. There are two types of couplings on the drive setup, the high-speed coupling that connects the motor and gearbox, secondly the low-speed coupling that connects the gearbox and pulley shaft. The low-speed coupling which transfers torque from the gearbox to the pulley shaft, Figure 2 shows a detailed overview of the hollow shaft configuration which is installed currently on the drives. One of the main elements of a coupling configuration is the locking mechanism to ensure the components are joined and secured, in this instance, the hollow shaft coupling employs reducer hollow shaft secured by two locking collars that shrink over the hollow shaft to secure it. Screws are inserted to join the two locking collars with an o-ring in between.

3. Purpose

The purpose of the document Is to provide a scope of work to be carried out when changing hollow shaft low speed coupling to solid flange couplings.

4. Scope of work

	Scope of work
1.	Supply and install selected solid couplings
2.	Manufacture and install pulley shafts
3.	Manufacture and install stub shafts
4.	Design and install torque arms to accommodate the new plant configuration
5.	Commission the belts

5. Additional Requirements:

- N/A