

	Instructions	Hendrina Power Station
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Title: **Scope of Work for the Supply and Delivery of Bearings for the Coal and Sedimentation Plants as and when Required for a Period of 5 Years.**

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1. Introduction

The purpose of the coal plant is to ensure that an adequate amount of coal is always available in the boiler bunkers to ensure continuous generation of steam for power generation purposes. This requires that the coal plant is always available. The availability of the coal plant depends on several things, one of which is the availability of the bearings. Bearings are used in a variety of plants including but not limited to the sedimentation plant. This scope covers the supply and delivery of bearings for the coal and sedimentation plants as and when required for a period of 5 years.

2. Supporting Clauses

2.1 Scope

This document describes the technical requirements for the supply and delivery of bearings for the coal and sedimentation plants for a period of 5 years.

2.2 Purpose

The purpose of the document is to provide guidance and specify the requirement for the sourcing of the of bearings for the coal and sedimentation plants at Hendrina Power Station as and when required for period of 5 years.

2.2.1 Applicability

This document is applicable to Hendrina Power Station.

2.3 Normative and Informative References

2.3.1 Normative

N/A

2.3.2 Informative

[1] 240-150642762, Generation Plant Safety Regulations

[2] 240-56536505, Hazardous Locations Standard

[3] 240-106365693 Standard for the External Corrosion Protection of Plant, Equipment and Associated Piping with Coatings.

[4] ISO 9001 Quality Management Systems.

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2.4 Definitions

Definition	Description
System	An integrated set of constituent pieces that are combined in an operational or support environment to accomplish a defined objective. These pieces include people, hardware, software, firmware, information, procedures, facilities, services and other support facets
Availability	Relates to the ability of the system-of-interest to be accessed and operated when needed.
Maintainability	Relates to the ability of the intended system to be easily serviced or repaired, including the ability to be easily diagnosed. In this context, maintainability is synonymous with 'Repairability' or 'Serviceability'
Reliability	Relates to the ability of the intended system to perform within the specification limits with correct and consistent results over time. This includes the numerical reliability characteristics (with confidence levels, if appropriate).

2.4.1 Classification

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

2.5 Abbreviations

Abbreviation	Description
BMH	Bulk Materials Handling
HPS	Hendrina Power Station
IP	Ingress Protection
ISO	International Standards Organisation
m	Meter(s)
mm	Millimeters
OHS	Occupational Health and Safety
PS	Power Station
QCP/QIP	Quality Control Plan / Quality Inspection Plan
SOW	Scope of Work

2.6 Roles and Responsibilities

System Engineer – Responsible for defining the technical specifications and scope to be executed by the contractor, as well as ensuring that sound engineering practice is followed, and quality work is delivered.

Contract Manager – Responsible for the procurement document(s) required to establish a contract with the contractor deemed capable of executing the scope.

Contractor – Responsible for providing all the services required for the execution of the full scope of work.

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2.7 Process for Monitoring

N/A

2.8 Related/Supporting Documents

N/A

3. Scope of Work

The scope of work covers the supply and delivery of bearings for the coal and sedimentation plants as and when required for a period of 5 years.

The specifications of the bearing are captured in the table below.

Material Number	Short Description	Long Descriptions	Quantities
0631798	Brg:self aligning;id 55 mm;od 100 mm;stl	Bearing: type: self aligning; inside diameter: 55 mm; outside diameter: 100 mm; width: 21 mm; style: open; material: stl; 1211k.	50
631846	Block:pillow;wd 70 mm;lg 255 mm;ht 130	Block: type: pillow; width: 70 mm; length: 255 mm; height: 130 mm; material: ci; must be complete with a grease nipple installed and shaft seals; must be supplied with locating kings.	50
631845	Sleeve:adaptor;id 50 x lg 37 mm;steel	Sleeve: type: adaptor; dimensions: id 50 x lg 37 mm; material: steel; application: conveyor electro magnet; lock nut diameter 75mm; h211.	50
30295	Brg bal:spherical;open;id 75 mm;od 130	Bearing, ball: type: spherical; style: open; inside diameter: 75 mm; outside diameter: 130 mm; width: 25 mm; row: double; suppl p/n: 1215k.	700
34583	Brg pilw blk:id 65 mm;2;m16;80 mm;ci	Bearing, pillow block: inside diameter: 65 mm; bolt mounting: 2; bolt diameter: m16; block size: wd 80 x lg 280 x ht 148 mm; shaft height: 80 mm; rolling element: spherical; housing material: ci; suppl p/n: sn515; self aligning, medium duty, with double lip seal.	700
30231	Sleeve adptr:bearing;63 mm;stl	Sleeve, adaptor: type: bearing; shaft size: 63 mm; material: steel; suppl p/n: he215; size 77 mm od.	700
29823	Brg bal:self aligning;open;id 85 mm	Bearing, ball: type: self aligning; style: open; inside diameter: 85 mm; outside diameter: 150 mm; width: 28 mm; row: double; suppl p/n: 1217k.	500
34578	Housing brg unit:pillow;id 75 mm;ci;2	Housing, bearing unit: type: pillow; bore: id 75 mm; material: ci; bolt mountings: 2; bolt diameter: m24; suppl p/n: sn517; supplier note: the item must be complete with a grease nipple installed and shaft seals.	500
30032	Sleeve adptr:bearing;77 mm;lg 55 mm;stl	Sleeve, adaptor: type: bearing; shaft size: 77 mm; length: 55 mm; material: steel; suppl p/n: he217; reference no: he 217; 85 mm od;	500

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30048	Sleeve adptr:bearing;75 mm;lg 63 mm;stl	Sleeve, adaptor: type: bearing; shaft size: 75 mm; length: 63 mm; material: steel; suppl p/n: h317; supplier note - the item must be original protective packed and marked; size 110 mm od.	500
30123	Brg bal:spherical;open;id 100 mm;od 180	Bearing, ball: type: spherical; style: open; inside diameter: 100 mm; outside diameter: 180 mm; width: 34 mm; row: double; suppl p/n: 1220k; reference no: 1220k; duty: medium.	400
30033	Sleeve adptr:bearing;89 mm;lg 58 mm;stl	Sleeve, adaptor: type: bearing; shaft size: 89 mm; length: 58 mm; material: steel; suppl p/n: he220; 83.3 taper per metre in mm 1:2 on diameter; 105 mm od, 165 mm od;	400
30050	Sleeve adptr:bearing;90 mm;lg 71 mm;stl	Sleeve, adaptor: type: bearing; shaft size: 90 mm; length: 71 mm; material: steel; suppl p/n: h320; supplier note - the item must be original protective packed and marked; size 130 mm od.	400
30212	Sleeve adptr:bearing;99 mm;lg 71 mm;stl	Sleeve, adaptor: type: bearing; shaft size: 99 mm; length: 71 mm; material: steel; reference no: he320; taper per metre, in mm 1:12 on dia 3500 inch bore diameter, imperial shaft; size 106 mm od.	400
34585	Housing brg unit:pillow;135 mm;ci	Housing, bearing unit: type: pillow; bore: 135 mm; material: ci; suppl p/n: snl520-617; to be supplied complete with a grease nipple installed and shaft seals; sealing arrangement: labyrinth (stl and nbr o-ring; it should take up to 120deg c).	400
221750	Seal rng:split;id 90 mm;od 148 mm;thk 6	Seal, ring: type: split; inside diameter: 90 mm; outside diameter: 148 mm; thickness: 6 mm; material: rubber/stl; reference no: u520	400
30124	Brg bal:spherical;open;id 110 mm;od 200	Bearing, ball: type: spherical; style: open; inside diameter: 110 mm; outside diameter: 200 mm; width: 38 mm; row: double; suppl p/n: 1222k; reference no: 1222k; duty: medium.	300
30202	Brg rlr:self aligning; spherical;id 110	Bearing, roller: type: self aligning; spherical; inside diameter: 110 mm; outside diameter: 200 mm; width: 53 mm; row: double; suppl p/n: 22222cckc3; the reference number must be cast and not engraved on and original packed.	300
30305	Sleeve adptr:bearing;100 mm;lg 77 mm;stl	Sleeve, adaptor: type: bearing; shaft size: 100 mm; length: 77 mm; material: steel; suppl p/n: h322; supplier note - the item must be original protective packed and marked; size 116.5 mm od;	300
222834	Housing brg unit:pillow;id 100 mm;ci	Housing, bearing unit: type: pillow; bore: id 100 mm; material: ci; suppl p/n: snu522-	300

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		619btc; u lock kit u522, closed cover 522a, labyrinth seal ts522-u, closed v ring kit ata522;	
34586	Housing brg unit:pillow;id 102 mm;ci;2	Housing, bearing unit: type: pillow; bore: id 102 mm; material: ci; bolt mountings: 2; bolt diameter: m24; suppl p/n: sn522; supplier note: the item must be complete with a grease nipple installed and shaft seals; sealing arrangement: labyrinth (stl and nbr o-ring, it can take up to 120deg c).	300
30204	Brg rlr:self aligning;id 130 mm;od 230	Bearing, roller: type: self aligning; inside diameter: 130 mm; outside diameter: 230 mm; width: 64 mm; row: double; bore shape: taper; suppl p/n: 22226cck w33c3; note - the reference number must be cast and not engraved on and must be original protective packed.	300
34588	Brg pilw blk:id 115 mm;2;m25;150 mm;ci	Bearing, pillow block: inside diameter: 115 mm; bolt mounting: 2; bolt diameter: m25; block size: wd 125 x lg 445 mm; shaft height: 150 mm; rolling element: roller; housing material: ci; suppl p/n: sn526; spherical self aligning, complete with double lip seals; sealing arrangement: labyrinth (stl and nbr o-ring, it can take up to 120deg c).	300
222835	Housing brg unit:pillow;115 mm;ci	Housing, bearing unit: type: pillow; bore: 115 mm; material: ci; suppl p/n: snu526btc; u-lock kit u526, closed cover 526a, labyrinth seal ts526-u, closed v ring kit ata526.	300
30175	Sleeve adptr:bearing;114 mm;lg 93 mm;stl	Sleeve, adaptor: type: bearing; shaft size: 114 mm; length: 93 mm; material: steel; suppl p/n: he3126; 134 mm od.	300
222842	Sleeve adptr:bearing;115 mm;lg 121 mm	Sleeve, adaptor: type: bearing; shaft size: 115 mm; length: 121 mm; material: steel; suppl p/n: h2326; 165 mm od.	300
222837	Housing brg unit:pillow;id 45 mm;ci	Housing, bearing unit: type: pillow; bore: id 45 mm; material: ci; suppl p/n: ucf209tr; 209; rolling element: bushing, shape: square, housing , mass: 220 kg.	300
32273	Brg rlr:self aligning;id 140 mm;od 250	Bearing, roller: type: self aligning; inside diameter: 140 mm; outside diameter: 250 .mm; width: 68 mm; row: double; suppl p/n: 22228cc/w33; cylindrical bore.	200
222836	Housing brg unit:pillow;id 125 mm;ci	Housing, bearing unit: type: pillow; bore: id 125 mm; material: ci; suppl p/n: snu528btc; u lock kit u528, closed cover 528a, labyrinth seal ts528-u, closed v ring kit ata528.	200
34589	Brg pilw blk:id 130 mm;2;m34;150 mm;ci	Bearing, pillow block: inside diameter: 130 mm; bolt mounting: 2; bolt diameter: m34; block size: wd 140 x lg 500 x ht 290 mm;	400

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		shaft height: 150 mm; housing material: ci; suppl p/n: sn528; barrel.	
30041	Sleeve adptr:bearing;125 mm;lg 132 mm	Sleeve, adaptor: type: bearing; shaft size: 125 mm; length: 132 mm; material: steel; suppl p/n: h2328; 148 mm od; supplier note - the item must be original protective packed and marked.	200
30088	Brg rlr:self aligning;id 160 mm;od 290	Bearing, roller: type: self aligning; inside diameter: 160 mm; outside diameter: 290 mm; width: 104 mm; row: double; suppl p/n: 23232cc3.	50
34590	Brg pilw blk:id 202 mm;4;m36;170 mm;ci	Bearing, pillow block: inside diameter: 202 mm; bolt mounting: 4; bolt diameter: m36; block size: wd 130 x lg 540 x ht 345 mm; shaft height: 170 mm; housing material: ci; suppl p/n: sn532; for shaft 140mm diameter; barrel.	50
30258	Brg rlr:self aligning; spherical;id 85	Bearing, roller: type: self aligning; spherical; inside diameter: 85 mm; outside diameter: 150 mm; width: 36 mm; row: double; suppl p/n: 22217ck.	200
30048	Sleeve adptr:bearing;75 mm;lg 63 mm;stl	Sleeve, adaptor: type: bearing; shaft size: 75 mm; length: 63 mm; material: steel; suppl p/n: h317; supplier note - the item must be original protective packed and marked; size 110 mm od.	200

3.1 Effective Date

This document will be effective from the date that the contract is authorised.

3.2 Handling and Transportation

The *contractor* is expected to practice safe handling techniques during the onloading, offloading, and throughout the transportation of the spares, if necessary. The *Employer's* representative will not accept any damaged items upon delivery.

Should the delivered spares be found to be defective or non-functional during or after delivery, the contractor remains responsible for the handling and transportation in the replacement process of the item(s).

3.3 Safety Requirements

The Contractor is to comply with the latest revision of the Eskom Generation Plant Safety Regulations, site specific procedures, and stipulations of the OHS Act.

3.4 Documentation to be Submitted by the Contractor

The contractor is required to submit the following documents for every delivery:

- Operating and maintenance manuals.
- Data book/sheet.
- Material certificates.
- QCP (which must be approved by eskom QC and Engineer prior to delivery)

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3.5 Quality Assurance Requirements

The Contractor is to be responsible to record and archive all off-site, factory tests and on-site tests for Plant, Equipment and Material

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