	Work Information	Ingula Pumped Storage Scheme
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Title: **Supply and Delivery of Compression Bellows**

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Area of Applicability: **Ingula Pumped Storage Scheme**




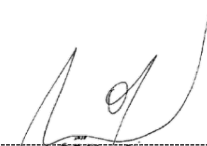
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			 pp
W. Sosibo Acting Electrical Senior Supervisor	M. Jeevaruthnam Electrical System Engineer	S. Nkosi Electrical Maintenance Manager	P. Mhlongo Plant Manager
Date: 10.01.2022	Date: 2021-01-11	Date: 2022-02-28	Date: 2022/03/23

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1. Introduction

Availability of plant spares plays a critical role in maintenance execution and optimizes the time spent on shutdowns, repairs and outages. Ingula Pumped Storage is in the process of procuring maintenance spares since the minimum stock levels have been reached. The procurement and delivery of bellows with clamps locking mechanism will be used in the Generator Circuit Breaker, Generator or Motor Transformer, Electrical Brake Switch and Excitation Transformer systems. Furthermore availability of spares are required to correct the existing defects in the plant, improve response time to breakdowns, prevent dust ingress and protect personnel from coming into direct contact with live HV conductors

2. Supporting Clauses

2.1 Scope

This document outlines the required spares, quantities of spares to be supplied by the Supplier and conditions for acceptance. The scope included here does not substitute procurement procedures that will be followed during the procurement process.

2.1.1 Purpose

The purpose of this document is to formally request the Supplier to supply spares and ensure that all maintenance spares which are being procured by Ingula Pumped Storage Scheme are correct and also to ensure that maintenance requirements are met.

2.1.2 Applicability

This document is applicable to the compression bellows spares procurement of Ingula Pumped Storage Scheme for use in the Generator System including the Generator/Motor Transformer.

2.1.3 Effective date

This document shall be effective from the date of the last signature by authorizer.

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] 240-76960420 Guideline for Spares Procurement Technical Evaluation and Quality Inspection
- [3] 32-1033 Eskom Procurement and Supply Chain Management Policy
- [4] 32-1034 Eskom Procurement and Supply Chain Management Procedure
- [5] 474-132 GBE Plant Engineering Baseline Change Management

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- [6] Public Finance Management Act 1 of 1999.
- [7] The Preferential Procurement Policy Framework Act 5 of 2000.
- [8] 240-62072907 The Eskom Delegation of Authority Policy.
- [9] The Broad-Based Black Economic Empowerment Act 53 of 2003, including the Broad-Based.
- [10] Black Economic Empowerment Regulations, 2016.
- [11] Preferential Procurement Regulations 2017.
- [12] National Treasury Regulations (to the extent as indicated in the regulations).
- [13] National Treasury Standard for Infrastructure Procurement and Delivery Management (NT prescription for Infrastructure Procurement).
- [14] National Treasury Regulations (Contract Management Framework).
- [15] Promotion of Access to Information Act 2 of 2000 (PAIA).
- [16] The Companies Act, 2008 and including the Companies Regulations, 2011.
- [17] 32-173 Conflict of Interest Policy.
- [18] 32-527 The Eskom Code of Ethics Standard.
- [19] 240-81328492 Eskom Value Standardisation and Cataloguing Procedure.
- [20] Prevention and Combating of Corrupt Activities Act 12 of 2004.
- [21] B-BBEE Codes of Good Practice of 2013.
- [22] 240-113650212 Eskom Supplier Integrity Pact.

2.2.2 Informative

- [23] 240-62196227 Eskom Life Saving Rules
- [24] Occupational Health and Safety and Regulation No 85 of 1993
- [25] Directive: Consolidated COVID 19 Direction on Occupational Health and Safety Measures in Certain Workplaces
- [26] 32-225 Declaration of Interest Procedure
- [27] 32-727 SHEQ Policy
- [28] 32-1303 Execute Maintenance Work PCM
- [29] 32-1304 Manage Maintenance Work PCM
- [30] 32-1205 Eskom Maintenance Policy
- [31] 240-53717264 Tender Office Standard;
- [32] Eskom's Integrity Pact with Suppliers

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2.3 Definitions

2.3.1 Data Capturing Forms – an Eskom form used to collect technical data about the specific product and/or item.

2.3.2 Supplier – An approved company with an Eskom vendor number that is registered in an Eskom database to supply goods or services to Eskom

2.3.3 Employer – Eskom Holdings SOC Ltd

2.3.4 Employer's representative (End-User) - The consumer of a material or service. This individual would typically place the reservation or Purchase Requisition for the desired material or service to be consumed/rendered.

2.4 Abbreviations

Abbreviation	Explanation
DCF	Data Capturing Forms
HV	High Voltage
OEM	Original Equipment Manufacturer
SHERQ	Safety, Health, Environment, Risk and Quality

2.5 Roles and Responsibilities

2.5.1 Supplier

The Supplier shall comply with the specification of this Works Information, procurement process and other Eskom regulations.

2.5.2 Maintenance

Maintenance personnel will ensure that this process is initiated followed up and executed at the best of Eskom's interest and will also ensure that the Supplier adheres to the requirement of this Works Information. Moreover, Maintenance personnel will oversee the inspection of spares upon delivery.

2.5.3 Materials Management

Assist Maintenance personnel in procurement and delivering of spares and also management of stock levels after delivery.

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2.5.4 Procurement

Procurement will use the approved Works Information document, and other related procurement or supporting document to manage the procurement and delivery of spares.

2.5.5 System Engineer

Provide technical specifications, evaluations, guidance and support upon procurement and delivery of spares.

2.6 Process for Monitoring

This document will be monitored through Eskom document management process. The documents shall be audited if and when required for relevance.

2.7 Related/Supporting Documents

Not Applicable

3. Work to be Performed by Supplier

The following requirements should be met by the Supplier:

- The *Supplier* will ensure that the correct spare is supplied and will replace or be liable for damage at his/her cost if the incorrect or defective spare/s is supplied. The costs may include, but not limited to, *production loss*, repairs and/or plant downtime as a result of a defective or incorrect spare.
- The *Employer's* (i.e. Eskom Holdings SOC) acceptance of delivered spare/s does not absolve the *Supplier* of the liability to supply the correct and/or defect free spare.
- The *Supplier* may, at the *Employer's* discretion, be given access to the plant to verify the information of the installed spare.
- The spare must be exactly the same (i.e. same Part Number, technical specification) as specified on this works information and the part number will also be used to perform quality control checks. Notwithstanding the stipulated condition that the Supplier is responsible for verifying the correctness of the spares information provided by the Employer in relation to the existing installed spare. This may include the Supplier consulting the original supplier of the spare to ensure correctness of information provided by the Employer.
- The *Employer* may at his/her discretion make the *Employer's* representative available to the *Supplier* for the purpose of soliciting additional information or verifying information as the need arises.
- The *Supplier* will supply any additional information such as brochures, general arrangement drawings, certificates, detailed specifications, etc.
- The *Supplier* provides the *Employer* with additional spares information and verifies information required in the attached data capturing forms (DCF).
- The *Supplier* shall supply preservation and storage procedure/s, where applicable.

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- The *Supplier* may supply and deliver the exact quantity of spares specified by the *Employer*
- If deemed necessary, the *Employer* may subject the *Supplier* to a quality assurance assessment at the *Supplier's* or *sub-Supplier's* premises as part of the technical evaluation or before the contract placement or at any time during the contract period.
- Where the spare requires testing, the *Supplier* will inform the *Employer* to invite or make available the *Employer's* representative to witness the tests.
- Should the *Employer* be dissatisfied with all or certain aspects relating to a specific spare tests (including but not limited to suspected inferior quality or non-compliance) the *Supplier* will make good, rectify the faults or supply a new spare at his/her cost.
- Complete price breakdown must be supplied with the quotation and must include the cost of transport to Ingula Pumped Storage Scheme.
- Spares will be opened for inspection, counting and quality control check at the *Employer's* stores.
- The *Employer* may make clarification sessions available to either prospective *Supplier/s* in order to further assist the prospective *Supplier's* to meet the requirements of the Work to be Performed by the *Supplier*.
- The *Employer* reserves the right to exclude the supply of some spares items included in the contract with the *Supplier* should the *Employer* become aware that the National Supply Contract exists or is placed by the *Employer* with Others in respect to those specific spares items.

4. Specifications of the Compression Bellows

4.1 Spares Identification

- Appendix A lists all the spares to be procured under this works information which corresponds to the provided electronic copy of the DCF's that contain more information about the required spares. Each spare is identifiable by means of a KKS number (as is used in the Power Station), part description, Original Equipment Manufacturer (OEM) and/or OEM part number.

4.2 Replacement Parts Upgraded/Modified

- Where equipment or spares, including the whole assembly, have been upgraded / modified the *Supplier* shall indicate this to the *Employer* as part of the tender. The *Employer* shall be made aware immediately where the upgrade/modification to the component is only identified subsequent to the tender being issued. The detailed compatibility to the existing component shall be indicated.
- If the components to be supplied will be obsolete, or envisaged to be obsolete, in the three years subsequent to tender being issued, the *Supplier* shall indicate this to the *Employer* and indicate viable alternatives thereof.

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4.3 Packaging

- All supplied spares shall be packaged in such a manner that they will be transported and stored without damage. This includes preventing damage due to moisture ingress, dust and foreign objects.
- Different spare types shall be packaged separately such that each spare type can be stored separately. Packaging shall be such that the spare can be identified without opening the packaging. Packaging shall be of material that will not be damaged, to an extent possible, by harsh weather conditions during transportation. If that is not possible, then the packaging shall be protected against such conditions.
- Where possible, packaging to be such that procured spares can be positively identified through the packaging. Where this is not possible, the packaging to be such that it allows opening and closing of packaging and still maintain the packaging integrity thereafter.
- Delivery packaging to have the following details:
 - Order number
 - Physical address of Ingula Pumped Storage Scheme and the *Supplier*
 - Contact details of the *Supplier*
 - Delivery note number

4.4 Acceptance of Spares

- No incorrect, damaged or faulty spares will be accepted.
- All the spares will be inspected before payment could be processed.
- Where applicable; test certificates, material certificate, manuals, data sheet and signature shall be provided as required.
- The *Supplier* must provide references of the companies that they have supplied similar spares to, and include the respective supply order/contract value, the contact name, physical address and telephone number.

5. Constraints on how the supplier provides the goods

5.1 Work to be done by the delivery date

- A clarification meeting to be held three weeks subsequent to the issuing of the enquiry to confirm the scope of the Works and to confirm spares identification. Any clarification to be sought at least 5 working days prior to the closing date of the tender. All questions can be forwarded to the *Employer* during this meeting. Where more than one Supplier is available, all responses from the *Employer* will be forwarded to all Suppliers, regardless of which Supplier required the clarification.

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- The delivery date for compression bellows spares shall be agreed upon by the *Supplier* and *Employer* and be presented in the Purchase Order issued to the Supplier. The Employer may request, in writing, that the spare be expedited quicker if the agreed delivery date may lead to undesirable consequences (loss of production, loss of revenue and/or safety to personnel or environment) to the *Employer*.

5.2 Quality Assurance Requirements

The spares to be provided shall conform to all quality assurance requirements that will be defined at contracting phase. The basis of the technical evaluation is done on the returnable received from the tender:

Technical Evaluation Criteria

Technical tender returnable documents for evaluation	NOTES	Weight	Penalties
Prior experience of supply, delivery and installation of compression bellows spares in South Africa with references If not OEM	'Similar' defined as work on Contactable references to be submitted	50%	0: if no similar work done before 100%: if similar services supplied before with contactable references
Datasheet of compression bellows	Datasheet to be provided as per items required	50%	0 if no DATA SHEET Submitted 50% if Supplier submitted DATA SHEET with limited INFORMATION. 100% if Supplier submitted DATA SHEET with all required information.
Percentage		100%	

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6. Acceptance

This document has been seen and accepted by:

Name	Designation
Samkelisiwe Nkosi	Electrical Maintenance Manager
Patrick Mhlongo	Plant Manager
Len Slabbert	Contract Management Manager
Mikaylin Jeevaruthnam	Electrical Engineer

7. Revisions

Date	Rev.	Compiler	Remarks
Dec 2021	01	Supply and Delivery of the bellows with clamp locking mechanism	Document development

8. Development Team

The following people were involved in the development of this document:

- Wiseman Sosibo
- Samkelisiwe Nkosi

9. Acknowledgements

None

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Appendix A: Bill of Material

NB: Each bellow to be supplied shall also be supplied with x2 off screw locks (of the type seen in Figure 1 below) and perforated steel clamp bands (of the type seen in Figure 1 below) that are of suitable length to ensure the that screw locks and clamp bands are able to adequately secure the bellows on both ends.

Short Description	Cataloguing Equipment 'Descriptor'	Applicable KKS number/S	Material Item Characteristics (Detail Description With Defining Design Characteristics)	Eskom Material Number	OEM	Spare to be supplied (Quantity)
Compression Bellows	BELLOWS PRESS:COMPRESSION;6.5 MPA	Generator/Motor Transformer 10BT10	BELLOWS, PRESSURE: TYPE: COMPRESSION; PRESSURE RANGE: 6.5 MPA; MATERIAL: SILICON; HARDNESS SCHORE A 40; TENSILE STRENGTH MINIMUM 6.5 N/MM2; BREAKING ELONGATION 500 %, FIRE RESISTANCE UL 94 HB; OPERATING TEMPERATURE -40 TO 180 DEC C; OPERATING VOLTAGE 1 KV / 1 MM, DIA 990 X LG 250 MMVENDORS ARE RESPONSIBLE FOR ENSURING THAT THEY ARE PERFORMING AGAINST THE CORRECT DRAWING REVISION NUMBER (IF APPLICABLE).	0704513	VOITH	6
Compression Bellows	BELLOWS PRESS:COMPRESSION;6.5 MPA	Generator 10 MLA	BELLOWS, PRESSURE: TYPE: COMPRESSION; PRESSURE RANGE: 6.5 MPA; MATERIAL: SILICON; HARDNESS SCHORE A 40; TENSILE STRENGTH MINIMUM 6.5 N/MM2; BREAKING ELONGATION 500 PCT; FIRE RESISTANCE UL 94 HB; OPERATING TEMPERATURE -40 TO 180 DEG C; OPERATING VOLTAGE 1 KV / 1 MM DIA 990 MM; LG 250 MMVENDORS ARE RESPONSIBLE FOR ENSURING THAT THEY ARE PERFORMING AGAINST THE CORRECT DRAWING REVISION NUMBER (IF APPLICABLE).	0703566	VOITH	6
Compression Bellows	BELLOWS PRESS:COMPRESSIONS; 6.5 MEG-PA	Electrical Brake Switch 10MLC20GS200	BELLOWS, PRESSURE: TYPE: COMPRESSIONS; PRESSURE RANGE: 6.5 MEG-PA; MATERIAL: SILICON; HARDNESS SCHORE A 40; TENSILE STRENGTH MINIMUM 6.5 N/MM2; BREAKING ELONGATION 500 PCT; FIRE RESISTANCE UL 94 HB; OPERATING TEMPERATURE -40 TO 180 DEG C; OPERATING VOLTAGE 1 KV / 1 MM DIA 770MM; LG 250 MMVENDORS ARE RESPONSIBLE FOR ENSURING THAT THEY ARE PERFORMING AGAINST THE CORRECT DRAWING REVISION NUMBER (IF APPLICABLE).	0703459	VOITH	6

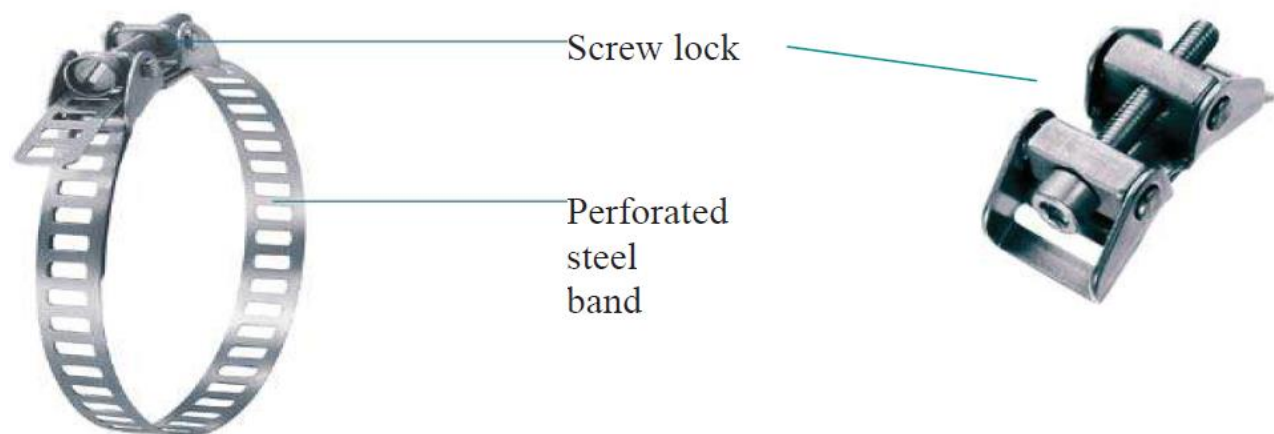
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Short Description	Cataloguing Equipment 'Descriptor'	Applicable KKS number/S	Material Item Characteristics (Detail Description With Defining Design Characteristics)	Eskom Material Number	OEM	Spare to be supplied (Quantity)
Compression Bellows	BELLOWS PRESS:COMPRESSION;6.5 MPA	Excitation Transformer 10MLC10	BELLOWS, PRESSURE: TYPE: COMPRESSION; PRESSURE RANGE: 6.5 MPA; MATERIAL: SILICON; HARDNESS SCHORE A 40; TENSILE STRENGTH MINIMUM 6.5 N/MM2; BREAKING ELONGATION 500 PCT; FIRE RESISTANCE UL 94 HB; OPERATING TEMPERATURE -40 TO 180 DEG C; OPERATING VOLTAGE 1 KV / 1 MM DIA 580 MM; LG 450 MMVENDORS ARE RESPONSIBLE FOR ENSURING THAT THEY ARE PERFORMING AGAINST THE CORRECT DRAWING REVISION NUMBER (IF APPLICABLE).	0703563	VOITH	6

Figure 1: Screw lock perforated steel clamp band to be supplied with each bellow



Size for the perforated steel band is

- Width = 17mm
- Thickness = 1mm
- Length = 200m

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