

	<b>Scope of Work</b>	<b>Kusile Power Station</b>
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Title: **Kusile Power Station Supply and Delivery of ACC Scope of Work**

Document Identifier:

Alternative Reference Number: **Not Applicable**

Area of Applicability: **Kusile Power Station**

Functional Area: **PSCM**

Revision: **1**

Total Pages: **13**

Next Review Date: **Not Applicable**

Disclosure Classification: **Controlled Disclosure**

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**Compiled by**

**Supported by**

**Authorized by**

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Date:16.03.2022  
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Date:16.03.2022  
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Date:17.03.2022  
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## **1. Introduction**

Kusile Power Station management decided to establish a long-term agreement for the supply of some of the power Station's strategic, critical, and operational plant spares. For the plant to operate effectively and efficiently, maintenance must be performed at intervals specified as per plant maintenance strategies. Correct plant spares are required to ensure maintenance is executed as per the maintenance strategy requirements and thus must be always available. The identification of which specific components to be kept as spares as well as the quantities has been done according to the information available at the time of the compilation of this document.

The required information for spares holding has not been adequately detailed enough to enable the full cataloguing of the identified spares into the SAP computer data base. This creates challenges to the current and future procurement processes and may lead to costly delivery of wrongly specified equipment. The works information processes outlined in this document are intended to eliminate or minimize the risk of such occurrences.

## **2. Supporting Clauses**

### **2.1 Scope**

The scope of work (SOW) specifies the required spares to be supplied by the *Supplier* on an as and when required basis 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 provide scope of work and technical information for the purchase of Variable Speed drive Hydraulic coupling and their associated auxiliary equipment Spares and ensure that all maintenance spares, which Kusile Power Station is procuring, are correct.

#### **2.1.2 Applicability**

This document is applicable to Kusile Power Station.

#### **2.1.3 Effective date**

This document will be effective from the date of its authorisation.

### **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] 36-681 Generation Plant Safety Regulations

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- [3] 32-727 SHEQ Policy
- [4] 240-83797737 In- Service monitoring of Lubricating oils and Hydraulic fluids
- [5] 240-84513751: Material Specification and Certification Guideline for Power Generation Plant
- [6] 240-86546783: Procurement Standard for Material Certification Requirements Applicable to Metallic Products Used on Low and Medium Pressure Applications
- [7] 240-54820279: Receive Materials
- [8] BS EN 10204 (2004) - Metallic products -Types of Inspection Documents
- [9] 240-106024999\_Kusile Power Station Feedwater and HP Heating Maintenance Spares Strategy
- [10] Table 1 –Variable Speed drive Hydraulic coupling spares
- [11] Table 2 – List of Standards applicable for use

### **2.2.2 Informative**

N/A

### **2.3 Definitions**

Definition	Explanation
Contractor	Service provider contracted to provide a specific spares & documentation to Kusile Power Station. Referred to as the Supplier on this document.
Employer	Kusile Power Station

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Definition	Explanation
Disclosure Classification	Controlled Disclosure to external parties (either enforced by law, or discretionary).

## **2.4 Abbreviations**

Abbreviation	Description
ISO	International Organisation for Standardisation
KPI	Key Performance Indicator
OEM	Original Equipment Manufacturer
OHS	Occupational Health & Safety
PSR	Plant Safety Regulations
SHEQ	Safety, Health, Environmental & Quality
SOW	Scope Of Work

## **2.5 Roles and Responsibilities**

### **2.5.1 Contractor**

- To Supply and Deliver ACC for Kusile Power Station. , according to the specifications and technical requirements on this document.
- Contractor shall submit all documentation as requested by the Employer.

### **2.5.2 Employer**

- Compiles and submit scope of work with technical specifications.
- Performs Quality Control of all spares on delivery at the Employer premises.

## **2.6 Process for Monitoring**

This document will be a once-off document to state the scope of work to supply and deliver ACC contract.

## **2.7 Related/Supporting Documents**

N/A

## **3. Scope**

To supply and deliver ACC Scope of Work

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#### 4. Description of the works

The works is to Supply and Deliver ACC for Kusile Power Station with technical specification in a spares list. The spares are listed in Table 1.

**Table 1: Gear Pumps**

Item No:	Material number	Detailed Description	Unit
1	0640160	KIT, VALVE REPAIR: TYPE: GATE VALVE 2 IN FST; APPLICATION: CEP 1/2 DISCHARGE DRAIN ISOLATION VALVE LCA20AA401, QJD01AA501; HOLDING STEAM EJECTOR CONDENSATE DRAIN VALVES; SPECIFICATION: ACC ASME B16.34; COMPRISING: BODY; BONNET; COMPLETE PACKING RING; GASKET; SUPPL P/N: 2IN-800LBS	EA
2	0640162	KIT, VALVE REPAIR: TYPE: GATE VALVE 1 IN FST; APPLICATION: LP HEATERS LEVEL STAND PIPE DRAIN VALVES LCA10AA401, LCC20AA401; SPECIFICATION: ACC ASME B16.34; COMPRISING: BODY; BONNET; COMPLETE PACKING RING; GASKET; SUPPL P/N: 1IN-800LBS	EA
3	0640163	KIT, VALVE REPAIR: TYPE: PARALLEL GATE VALVE 4 IN FORGED STL; APPLICATION: CEP VENT LINE ISOLATING VALVE LCC10AA101-KA01, LCC10AA101-MS01; SPECIFICATION: ACC ASME B16.34; COMPRISING: BODY; BONNET; COMPLETE PACKING RING; GASKET; SUPPL P/N: 4IN-900LBS	EA
4	0640167	KIT, VALVE REPAIR: TYPE: GATE VALVE 2 IN FST; APPLICATION: LP HEATERS VENT VALVES TO LIQUID LCC20AA101-KA01, LCC20AA101-MS01; SPECIFICATION: ACC ASME B16.34; COMPRISING: BODY; BONNET; COMPLETE PACKING RING; GASKET; SUPPL P/N: 2IN-900LBS	EA
5	0640171	KIT, VALVE REPAIR: TYPE: GLOBE VALVE 19.05 MM FST; APPLICATION: LP HEATER LEVELS STAND PIPES VENT VALVE 2 LCC10AA402; SPECIFICATION: ACC ASME B16.34; COMPRISING: BODY; BONNET; COMPLETE PACKING RING; GASKET; SUPPL P/N: LCP10AA406	EA
6	0640173	KIT, VALVE REPAIR: TYPE: GLOBE VALVE 29.9 MM FST; APPLICATION: MAIN CONDENSATE RECIRCULATING LINE DRAIN VALVES; SPECIFICATION: ACC ASME B16.34; COMPRISING: BODY; BONNET; COMPLETE PACKING RING; GASKET; SUPPL P/N: LCA40AA418	EA
7	0640174	KIT, VALVE REPAIR: TYPE: GLOBE VALVE 25.4 MM FST; APPLICATION: LP HEATER WATER SIDE BYPASS LINE VENT VALVE; SPECIFICATION: ACC ASME B16.34; COMPRISING: BODY; BONNET; COMPLETE PACKING RING; GASKET; SUPPL P/N: LCA60AA402	EA

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8	0640175	KIT, VALVE REPAIR: TYPE: GLOBE VALVE 50.8 MM FST; APPLICATION: LP HEATER 2 LEVEL TRANSMITTER ISOLATING VALVE; SPECIFICATION: ACC ASME B16.34; COMPRISING: BODY; BONNET; COMPLETE PACKING RING; GASKET; SUPPL P/N: LCC30AA305	EA
9	0640176	KIT, VALVE REPAIR: TYPE: 3 WAY GLOBE VALVE 50.8 MM FORGED STL; APPLICATION: LP HEATER 1-2 WATER SIDE PRESSURE RELIEF VALVE INTLK VALVE; SPECIFICATION: ACC ASME B16.34; COMPRISING: BODY; BONNET; COMPLETE PACKING RING; GASKET; SUPPL P/N: LCA51AA501	EA
10	0641926	TRANSMITTER, LEVEL: RANGE: 0-45 M; OUTPUT: 0-20 MA; SUPPLY: 24 VDC; CONNECTION: FLANGE; WORKING PRESSURE: 16 BAR; TYPE: GUIDED LEVEL RADAR; APPLICATION: FLY ASH SILO; SPECIFICATION: FMP52; REFERENCE NO: H700430112D; SUPPL P/N: FMP52-AAACCA0ACHK-JD	EA
11	0643755	ACCUMULATOR, HYDRAULIC: TYPE: BLADDER; SHAPE: CYLINDER; DIAMETER: 229 MM; CAPACITY: 20 L; PRESSURE RATING: 45 BAR; MATERIAL: BLADDER NBR 20; SHELL CS; LENGTH: 1.6 M; SUPPL P/N: SB33032A1/112U-330A; VENDORS ARE RESPONSIBLE FOR ENSURING THAT THEY ARE PERFORMING AGAINST THE CORRECT DRAWING REVISION NUMBER (IF APPLICABLE).	EA
12	0647273	KIT, VALVE REPAIR: TYPE: GLOBE VALVE 2 IN 800 LBS; FST; APPLICATION: MAIN CONDENSATE TO GLAND STEAM CONDENSATE DRAIN VALVES; SPECIFICATION: ACC ASME B16.34; COMPRISING: BODY/BONNET GASKET SET; COMPLETE GLAND PACKING SET; SUPPL P/N: M66-EA-007	EA
13	0647274	KIT, VALVE REPAIR: TYPE: GLOBE VALVE 1 IN 800 LBS; FST; APPLICATION: CEP VENT LINE ISOLATING VALVE; SPECIFICATION: ACC ASME B16.34; COMPRISING: BODY/BONNET GASKET SET; COMPLETE GLAND PACKING SET; SUPPL P/N: M66-EA-024	EA
14	0647275	KIT, VALVE REPAIR: TYPE: GLOBE VALVE 1/2 IN 800 LBS; FST; APPLICATION: CRT NITROGEN SUPPLY PRESSURE INDICATOR ISOLATING VALVE; SPECIFICATION: ACC ASME B16.34; COMPRISING: BODY/BONNET GASKET SET; COMPLETE GLAND PACKING SET; SUPPL P/N: M66-EA-008	EA
15	0647276	KIT, VALVE REPAIR: TYPE: GATE VALVE 1-1/2 IN 800 LBS; FST; APPLICATION: LP HEATER 1 DRAIN LINES VALVES; SPECIFICATION: ACC ASME B16.34; COMPRISING: BODY/BONNET GASKET SET; COMPLETE GLAND PACKING SET; SUPPL P/N: M66-EA-008	EA

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16	0647277	KIT, VALVE REPAIR: TYPE: GLOBE VALVE 3/4 IN 800 LBS; FST; APPLICATION: ACCCT LEVEL ONTROL DRAIN VALVE 2; SPECIFICATION: ACC ASME B16.34; COMPRISING: BODY/BONNET GASKET SET; COMPLETE GLAND PACKING SET; DRAWING NO: KUS16M-M66-EA-007 REV 0	EA
17	0647279	KIT, VALVE REPAIR: TYPE: GLOBE VALVE 1 IN 800 LBS; FST; APPLICATION: LP HEATERS LEVEL INDICATOR ISOLATING VALVES 1/2; SPECIFICATION: ACC ASME B16.34; COMPRISING: BODY/BONNET GASKET; COMPLETE PACKING RING; DRAWING NO: KUS16M-M66-EA-006 REV 0	EA
18	0647281	KIT, VALVE REPAIR: TYPE: SAFETY VALVE 4 X 6 IN CL 150 SPRING LOADED; APPLICATION: LP HEATER 2 SHELL SIDE PRESSURE RELIEF VALVE; SPECIFICATION: ACC.ASME SECTION VII; COMPRISING: CAP GASKET SET; GUIDE GASKET SET; PLUG GASKET; SET SCREW GASKET; DRAWING NO: KUS16M-M35-EA-005 REV 0	EA
19	0647282	KIT, VALVE REPAIR: TYPE: SAFETY VALVE 4 X 6 IN CL 150 SPRING LOADED; APPLICATION: LP HEATER 2 SHELL SIDE PRESSURE RELIEF VALVE; SPECIFICATION: ACC.ASME SECTION VII; COMPRISING: CAP GASKET SET; GUIDE GASKET SET; PLUG GASKET; SET SCREW GASKET; DRAWING NO: KUS16M-M35-EA-005 REV 0	EA
20	0655296	BLADDER, ACCUMULATOR: RATED CAPACITY: 20 L; PRESSURE RATING: 45 BAR; MATERIAL: NBR20; SUPPL P/N: SB330-20A1/112U-330A/45BAR; WITH INTEGRATED GAS VALVE INSERT; STANDARD CONNECTION, THREAD WITH INTERNAL SEAL FACE; CARBON STEEL SHELL; 330BAR MAX	
21	0655297	BLADDER, ACCUMULATOR: RATED CAPACITY: 18.5 L; PRESSURE RATING: 20 BAR; MATERIAL: NBR20; SUPPL P/N: SB330-20A1/112U-330A/20BAR; WITH INTEGRATED GAS VALVE INSERT; STANDARD CONNECTION, THREAD WITH INTERNAL SEAL FACE; CARBON STEEL SHELL; 330BAR MAX	
22	0656053	ACCUMULATOR, HYDRAULIC: CAPACITY: 20 L; SUPPL P/N: SP-KUS-F2-05461; VENDORS ARE RESPONSIBLE FOR ENSURING THAT THEY ARE PERFORMING AGAINST THE CORRECT DRAWING REVISION NUMBER (IF APPLICABLE).	
23	0692905	MODULE: TYPE: ACCESSORIES FOR EMAX 2; INPUT: MODBUS; APPLICATION: COMMUNICATION EKIP COM R MODBUS; DIMENSIONS: WD 90 X LG 90 X HT 30 MM; SPECIFICATION: RS-485; COMMERCIAL SIZE: 0.3 KG; SUPPL P/N: 1SDA074157R1	

#### 4.1 Documentation

The following are the *Supplier's* requirements:

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- a) The *Supplier* will ensure proper handling of the spares (from procurement of equipment, storage and transportation).
- b) The spare must be to the exact same specification as installed in the plant and specified on this scope of work document. *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.*
- c) The *Supplier* will supply any additional information such as brochure, general arrangement drawing, certificates, detailed specification, data sheet, Settings Document for programmable electronic cards etc. Check sheets or drawings for quality inspections.
- d) The *Supplier* provides the *Employer* with additional spares information and verifies information required in the attached data capturing forms (DCF).
- e) The *Supplier* shall supply preservation and storage procedure/s, where applicable.
- f) 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*.
- g) The *Supplier* must ensure that all components supplied must be individually packed in such a way as to protect the parts during transport and storage. The packaging must also include the necessary labels to identify the items.

## **4.2 Acceptance of Spares**

### **4.2.1 Spares Identification**

Lists all the spares to be procured under this SOW. This list 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 an Eskom SAP Material number (as is used in the Power Station), part description, OEM and/or OEM part number.

### **4.2.2 Obsolescence**

The Supplier shall inform the Employer immediately where spares are found to be obsolete before the alternative spares is supplied, the Supplier shall indicate this to the Employer and indicate viable alternatives thereof.

### **4.2.3 Packaging**

- I. 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. The contractor's procedure shall be used Transportation and Storage.
- II. 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

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harsh weather conditions during transportation. If that is not possible, then the packaging shall be protected against such conditions.

- III. 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.
- IV. Delivery packaging shall include as a minimum the following details:
  - a) Purchase Order Number
  - b) Part Description
  - c) Part number
  - d) Eskom SAP Material number
  - e) Drawing number, where applicable
  - f) Physical address of Kusile Power Station and the *Supplier*
  - g) Contact details of the *Supplier*
  - h) Delivery note number

#### **4.2.4 Acceptance of spares**

- a) No incorrect, damaged or faulty spares will be accepted.
- b) All the spares will be inspected and accepted by Engineering and/or OEM Technician before payment could be processed.
- c) Data capturing forms information must be supplied and must meet an acceptable level.
- d) The Supplier must ensure that the supply and preservation of spares is done in compliance with preservation specifications and good engineering practice.
- e) The Supplier to advise the Purchasers warehouse/stores on effective storage of spares and preservation.
- f) Upon delivery of the goods at the Eskom stores, an inspection of goods and the receipt must be conducted by the End-user and the Supplier with 48 hours of delivery. There must be an approved list of appointed quality inspectors available with specimen signatures and this must be updated annually. As per Work Instruction, Receive Materials – 240-54820279.
- g) The Supplier must supply the Purchaser with warrantee certificates, test certificates and the complete data book of spares at the time of delivery which shall be uploaded into the SAP system Goods Receipt document as per Work Instruction, Receive Materials - 240-54820279.
- h) The Supplier must deliver the goods as per the agreed to delivery times.
- i) The Supplier to provide 3.1 Material certificates as a minimum, where applicable.

#### **4.2.5 Information to be provided to the Supplier**

The *Supplier* is provided with electronic Data Capture Form (DCF) for each spare required. The *Supplier* is required to ensure that the correct information is captured on the DCF's. The DCF's are required by the *Purchaser's* Material Management System to be able to book the item in the store

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and the information should also be sufficient to procure the correct spares in future. Most of the DCF's have been populated by the *Purchaser* where information was available. This information may not be correct and needs to be reviewed and verified/corrected as part of the *Services*.

The DCF's are provided in Microsoft Word format. The *Supplier* needs to ensure the 'Track Changes' function is selected 'on' so that any changes to the existing information as well as inserted information can easily be identified and tracked. The following information needs to be provided as detailed as possible on the DCF's.

- a) Verify the existing information that is already populated on the DCF's and make changes where required. Ensure the 'track changes' function is on.
- b) Populate/verify all fields highlighted in 'yellow' on the DCF's, in the electronic format provided.
- c) Supply additional information in the field "Free Format Text" or "Purchase order text" on the DCF's. This includes:
  - The standards or specification that the product has to conform to.
  - Add any spares information which has been omitted, which is deemed relevant for spares identification, packaging and protection requirements during transportation and storage.
  - The Quality Control requirements for manufacturing and testing of the product to ensure that the spares conform to the correct specifications or standards, including certificates and test results, that is required with delivery of the goods.
- d) Supply any other additional information that has not been specified on the DCF's but necessary for storage, preservation, installation and utilisation of spares where applicable. Such information includes brochures, technical data, etc. These DCF's with the added information needs to be made available electronically to the employer.
- e) Supply any other additional information that has not been specified on the DCF's but necessary for storage, preservation, installation and utilisation of spares where applicable. Such information includes brochures, technical data, etc.

### **4.3 Spares Management**

The Purchaser may request the Supplier to provide accurate description of all spare parts included in the spares list.

### **4.4 Equipment Required**

The Supplier and his sub-suppliers must possess the tools and equipment to satisfy the requirements for the scope.

### **4.5 Consumables Required**

The Supplier must supply his own consumables to satisfy the requirements for scope.

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#### **4.6 Workshop**

The Supplier and his sub-suppliers are required to have suitable premises with the required tools and equipment to be able to conduct the scope of work. Eskom reserves the right to inspect the workshop premises to make sure that it is kept up to standard.

#### **4.7 Planned KEY PERFORMANCE INDICATORS (KPI)**

- a) The KPI's will be used to determine the successful performance of the scope. The Supplier is required to perform in order to meet these targets. The KPI's are to be agreed to between parties and are subject to change on an annual basis, based on the need.
  - o First committed delivery date
  - o Quality
  - o Non-compliance to the agreed Scope of Work, hold points and Quality Control Plans

### **5. Acceptance**

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