	Works Information	Medupi Power Station
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Title: **Medupi Power Station Works  
Information for the Supply of 22kV  
Export Systems (IPB&GCB) spares  
contract for five years**

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## **1. Introduction**

Medupi Power Station is designed to be a highly efficient and effective coal fired power station in supplying power to the South African National Grid. This should be maintained by ensuring that the plant power output is not negatively impacted by unavailability, inefficiency and unreliability of certain plant equipment or components. The power station is designed to allow a maximum UCLF of 2%. This can be achieved by ensuring that maintenance time is minimized and consequentially minimizing plant time to restoration. One of the ways to minimize maintenance time is to ensure that the inventory has the necessary required minimum stock.

The process of procuring spares, while in compliance to Eskom's Procurement and Supply Chain Management Policy (32-1033 rev 4), would include the requirements for the sourcing and supply of specified spares.

## **2. Supporting Clauses**

### **2.1 Scope**

This Works Information document serves to outline the requirements for the supply of maintenance spares and related documentation for IPB&GCB used in the plant. The scope outlined in this document, shall not substitute nor supersede the Eskom procurement procedures that will be followed during the procurement process.

#### **2.2.1 Purpose**

The purpose of this document is to capture the requirements from all relevant stakeholders and to ensure that the deficiencies in the plant that may be caused by lack of maintenance spares are addressed adequately through procurement of spares and their technical information.

#### **2.2.2 Applicability**

This works information is only applicable to the maintenance spares to be procured for 22kV Export Systems (IPB&GCB) at Medupi Power Station.

#### **2.2.3 Effective date**

This document shall be effective on the authorization date.

## **2.3 Normative/Informative References**

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

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### 2.3.1 Normative

- [1] ISO 9001 Quality Management Systems
- [2] Guideline for Spares Procurement Technical Evaluation and Quality Inspection: 240-76960420
- [3] Eskom Procurement and Supply Chain Management Policy: 32-1033 rev 4
- [4] Eskom Procurement and Supply Chain Management Procedure: 32-1034
- [5] GBE Plant Engineering Baseline Change Management: 474-132
- [6] 240-84856224 Medupi Power Station 22kV GCB IPB Maintenance Strategy Rev.7
- [7] 240-95472870 Medupi Power Station 22 kV GCB and IPB Spares Strategy Rev 5

### 2.3.2 Informative

- [8] 240-56357295: Generation High Current Phase Isolated Generator Busbars used at Thermal Power Generating Plant Standard

## 2.4 Definitions

Definitions	Description
Employer	Company that is a recipient of a good or service provided by a Supplier under a purchase order or contract of sale. For the purpose of this Works Information, the Employer is Eskom Holdings SOC Medupi Power Station or representative thereof.
Supplier	An enterprise that provides goods or services. For the purpose of this Works Information, the Supplier may refer to the OEM, OEM approved distributor or Supplier appointed to implement the works herein.

## 2.5 Abbreviations

Abbreviation	Explanation
DCF	Data Capture Form
EMC	Electromagnetic Compatibility
ECM	Engineering Change Management
Gx	Generation Division
GCB	Generator Circuit Breaker
HV	High Voltage
IPB	Isolated Phase Busbar
KKS	Kraftwerk-Kennzeichen System
kV	Kilo Volt
OEM	Original Equipment Manufacturer
QC	Quality Control
UCLF	Unplanned Capability Loss Factor
WI	Works Information

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## **2.6 Roles and Responsibilities**

### **Supplier**

- a. Provide a quotation for each listed item in Appendix A as part of tender deliverable.
- b. Supply procured spares as requested by the Employer.
- c. Confirm correctness of the supplied spares information
- d. Timeously inform the Employer of any delays or when outstanding or additional information from the Employer is required.
- e. Responsible to ensure that a quality product is delivered.
- f. Responsible to ensure that every effort is made to keep to the agreed program and plan.
- g. As a tender deliverable provide all required technical datasheets and/or product brochures relevant to items to be supplied.
- h. Conform to all the other requirements stipulated in this document.
- i. Supply all the necessary test certificates/results where applicable.

### **Medupi Power Station Electrical Engineering System Engineer**

- a. Provide input and compile this Works Information.
- b. Liaise with all relevant stakeholders for any input.
- c. Ensure that the Works Information is in accordance with Eskom policies and procedures.
- d. Provide all necessary information to assist in spares procurement.
- e. Participate in technical evaluation of the tender documents.
- f. Assist with the preparation of all the reports to different tender committees, where applicable
- g. Provide technical assistance to Materials Management and Procurement Departments during the execution of this Works Information
- h. Perform Quality Checks on procured spares and accompanying documentation.
- i. Provide Materials Management with populated DCFs for cataloguing of spares and record keeping.
- j. Verification and acceptance of all supplied documentation.
- k. Responsible for QC at delivery of procured spares.

### **Medupi Power Station Materials Management Department**

- a. Catalogue the spares after completion of DCFs.
- b. Confirm that the information supplied by the engineer is enough for cataloguing.
- c. Perform QC on all submitted DCFs.
- d. Make provision for storage of procured spares.
- e. Work together with engineering when accepting spares into store

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### **Medupi Power Station Procurement Department**

- a. Perform all procurement processes outlined in this Works Information.
- b. Issue invitation to tender to the *Supplier*.
- c. Supply engineering with *Supplier* information for sole source justifications, where applicable.
- d. Set up clarification meetings between *Supplier* and *Employer*
- e. Act as communication link between *Supplier* and *Employer*
- f. Ensure all necessary payments are effected timeously and keep record thereof.
- g. Arrange technical evaluation sessions.
- h. Compile and present mandate to negotiate and arrange negotiation meetings if and when required and give feedback to relevant tender committee.
- i. Keep record of all tender documentation

### **Medupi Power Station Electrical Maintenance Function**

- a. Ensure spare items are stored properly by Materials Management as per relevant storage recommendations by the respective manufacturers.

## **2.7 Process for Monitoring**

This spares procurement works information will form the basis of the spare's procurement contract's scope of work. It will then be monitored using applicable contracts monitoring and auditing processes. It shall remain subjected to an auditable process to ensure full compliance to the procurement policy.

## **2.8 Related/Supporting Documents**

# **3 Work Specification**

## **3.2 Work to be performed by the Supplier**

The following are the Supplier's requirements:

- a. 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, repairs and/or replacement of a defective or incorrect spare.
- b. 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.

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- c. The *Supplier* may, at the Employer's discretion, be given access to the plant to verify the information of the installed spare.
- d. The spare must be exactly the same (e.g. same Part Number) as specified on this works information and the part number will also be used to perform quality control checks.
- e. The Employer may at his/her discretion make the Employer's Engineer or employees or others available to the Supplier for the purpose of soliciting additional information or verifying information as the need arises.
- f. The Supplier will supply any additional information such as brochure, general arrangement drawing, test certificates, detailed specification, etc.
- g. The Supplier shall supply preservation and storage procedure(s) as part of the tender deliverables.
- h. "Estimated Spare Quantities to be Procured over Five-Year Period", indicated by the Employer in the Appendix A as one of the table subheadings, is the estimated number the Employer may require the Supplier to supply over the contract period. The Supplier may only supply the quantity as specified by the Employer in the specific order instruction.
- i. 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.
- j. Complete price breakdown must be supplied with the quotation and must include the cost of transport to Medupi Power Station. The quotation will be based on items listed in Appendix A and there should be a similar one compiled for populating the items' individual DCF's. Methodology use to quote for transportation of procured items should be defined and quantified.
- k. Spares will be opened for inspection, counting and quality control check at the Employer's stores.
- l. The Employer has provided the Bill of Material table and copies of individual spares DCF's to assist the Supplier to meet the requirements of the Work to be performed by the Supplier.
- m. Where the DCF has already been fully or partially populated by the Employer, the Supplier shall verify the correctness of the information and complete partially populated DCF's.
- n. The Employer may make clarification sessions available to either prospective Supplier(s) to further assist the prospective Supplier/s to meet the requirements of the Work to be performed by the Supplier.

Where the Employer has entered into a National Framework agreement for the supply of any listed items in Appendix A before this contract is in place, those items shall not form part of the contract. The following items will be required as tender deliverables and the Supplier shall be evaluated on them:

- a. Use Appendix A to compile a quotation for the tendered items/components. A similar table shall be developed by the Supplier to supply quotation for populating individual DCF's. The quotation should include transportation costs as stipulated above.

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- b. Confirmation that the Supplier is the original manufacturer or approved distributor of the items tendered for. Confirmation should be provided in written correspondence or certification of approval as a distributor.
- c. Confirmation that the items to be supplied will be the same as the items listed in Appendix A. Items different from the required spares will only be accepted where the item is approved similar. The Supplier must inform the Employer in writing as part of the tender deliverables to indicate proposed alternative spares. The Employer to be provided with all technical information on the proposed alternative spare to approve the alternative spare as acceptable. Similar spares to be interchangeable with original spares and any modifications required when installing the alternative spare to be indicated to the Employer.
- d. Confirmation that the Supplier will populate all DCF's for the tendered items. In instances where not all fields of the DCF can be populated, the Supplier shall request the Employer for approval to submit an incomplete DCF. The Employer reserves the right to reject any populated DCF if the information is not deemed sufficient. More details required with the DCF's are outlined in section 4.2 below.
- e. The Supplier shall supply the preservation procedures for all the items tendered for. These shall include handling, storage, and transportation procedures. Group preservation of similar items is acceptable. The procedures may be supplied after order placement. However, confirmation must be provided as a tender deliverable.
- f. The Supplier's proven track record in supplying listed items or similar items shall be sourced to ensure that the Supplier can supply the items.
- g. Supplier to notify the Employer about the warranty periods for all tendered components/items and the time it will take to deliver the items from the date of order placement.
- h. Supplier to provide data sheets for all tendered spares as part of the tender documentation. The data sheets to be comprehensive enough to give all relevant information that describe a product.
- i. The Supplier shall provide shelf-life duration for all tendered items.

### **3.3 Specification of Spares**

#### **3.3.1 Spares Identification**

Appendix A lists all the spares to be procured under this works information. This list shall correspond to the provided electronic copy DCF's that will contain more information about required spares. Each spare is identifiable by means of a KKS number (as is used in the Power Station), part description, OEM and/or OEM part number. Where the information available on the spares list in Appendix A or that supplied by materials management as catalogued is not sufficient to positively identify the applicable spare, the Supplier shall notify the Employer such that the Employer can assist the Supplier in identifying the correct spare.

The Supplier shall be liable to replace a supplied spare that is found to be defective within the warranty period.

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### **3.3.2 Information to be provided**

Accompanying this Works Information is the DCF's with the information deemed enough to procure the correct spares as required. The DCF is required by the Employer's Material Management System to be able to book the item in the stores and the information should be sufficient to help the Employer keep record and enable proper maintenance on the components. The Supplier is required to completely populate the supplied DCF's for respective spare components. Where a field is populated, the Supplier needs to review and verify/correct the information against the OEM part number for correctness.

The following information to be provided:

- a. Fully populated DCF's
- b. Documentation detailing the technical characteristics of the procured spare item. This may be in the form of data sheet or brochure. The Employer reserves the right to reject the documentation if it is not deemed sufficient
- c. Any other additional information that has not been specified in the DCF / WI but necessary for storage, installation and utilization of spares
- d. Supply preservation and storage procedures of the components
- e. Any spares information which has been omitted which is deemed relevant for spares identification, storage, maintenance, etc.
- f. In instances where the Supplier uses another company, other than the item OEM, to provide required information, this to be declared in advance to the Employer
- g. Shelf life of all spares to be specified as part of the tender documentation information

### **3.3.3 Spares Quantities**

The estimated spares quantities to be provided as stipulated in APPENDIX A.

### **3.3.4 Design, Manufacturing and Testing**

Unless an alternative spare is proposed the required spares shall be the same, in all respects, as the original components. The spares shall also conform to the same specifications as the original components. This includes all aspects such as design, materials and material specifications, manufacturing and manufacturing processes, testing and operating and storage specifications.

### **3.3.5 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 including changes required to fit the upgraded/modified spare. This includes hardware, firmware and software upgrade/modification. Approved alternative components shall be accepted provided they comply to the requirements in section 3.3.4.

If the components to be supplied will be obsolete, or envisaged to be obsolete, in the 5 years after tender being issued, the Supplier shall indicate this to the Employer and indicate viable alternatives thereof.

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### **3.3.6 Packaging**

All supplied spares shall be packaged in such a manner that they may be transported and stored for an extended period without resulting in damage to the packaged components. This includes preventing damage due to moisture ingress, especially for electronic components. Where possible, silica gel/desiccant to be included to ensure protection against moisture for at least 3 months. However, this inclusion should not lead to damage to the component.

Modules / sensitive electronic components shall always be suitably packed in anti-static material and other protective packaging such that it is protected against static, EMC and handling hazards.

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.

The Supplier shall provide the method of storage for any long lead items and indicate any special storage requirements. If any equipment is required for the storage, for example an oil bath for HV bushings, this will also be provided by the Supplier.

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 on it:

3.3.6.1 Order number

3.3.6.2 Physical address of Medupi Power Station

3.3.6.3 Delivery note number

### **3.3.7 Transportation**

Transportation of all spares shall be conducted with due regard of the sensitivity of the units and in such a manner that spares are suitably protected. All possible care must be taken to ensure that the components are not subjected to undue rough handling, vibration, humidity, excessive temperatures, or abuse. When courier service is used for transportation, the courier services service provider shall be alerted to the nature of the content of the packages and instructed to handle with care. Labels shall be used to indicate the fragile nature of the items.

### **3.3.8 Exclusions**

The following shall be noted as exclusions as per this works information:

3.3.8.1 The Supplier is not responsible for offloading facilities during delivery of spares

3.3.8.2 Subcontracting shall not be permitted, unless declared and accepted prior to contract placement

### **3.3.9 Acceptance of Spares**

3.3.9.1 No incorrect, damaged, or faulty spares will be accepted.

3.3.9.2 All the spares will be inspected before payment could be processed.

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3.3.9.3 Where applicable; test certificates, material certificate, calibration certificate, manuals, data sheet and signature shall be provided as required.

3.3.9.4 No spare item will be accepted without its complete DCF being submitted, except in instances where a written agreement between Supplier and Employer not to submit it exists.

### **3.4 Constraints on how the supplier provides the goods**

#### **3.4.1 Work to be done by the delivery date**

A clarification meeting to be held 3 weeks after the issuing of the enquiry to confirm the scope of the Works and to confirm spares identification. 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.

All required spares to be delivered to the Employer 8 weeks from the day the purchase order is placed by the Employer. The Employer may request, in writing, that a spare be expedited quicker if its delivery in 8 weeks may lead to a delay that may result in undesirable consequences (loss of production, loss of revenue and/or safety to personnel or environment) to the Employer. The Supplier to indicate the costs associated in expediting delivery.

#### **3.4.2 Documentation Control**

The information for spares to be provided will either be in electronic format and/or hard copy. Other information provided with each spare to be either in electronic format and/or hard copy. Information provided to be documented in such a manner that the information for each spare will be easily identifiable. All documentation supplied shall bear the OEM's official name and logo. No handwritten DCF's will be accepted and the DCF format shall be word or pdf.

#### **3.4.3 Quality Assurance Requirements**

The spares to be provided shall conform to all quality assurance requirements that will be defined at contracting phase.

#### **3.4.4 Program Constraints**

The following shall be included in the *Supplier's* program:

3.4.4.1 The Supplier to indicate standing time and storage costs should the Employer delay the delivery date. Proof of actual costs to be provided.

#### **3.4.5 Guarantee of delivered spares**

All delivered spares shall come with an at least 12-months guarantee period starting from the *delivery date*.

#### **3.4.6 Insurance of the Goods**

Insurance to be the responsibility of the *Supplier* until *delivery*.

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## **4 Acceptance of Document**

This document has been seen and accepted by:

<b>Name</b>	<b>Designation</b>
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## **5 Revisions**

<b>Date</b>	<b>Rev.</b>	<b>Compiler</b>	<b>Remarks</b>
November 2024	1	L. Mokoka	First Issue

## **6 Development Team**

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

- N/A

## **7 Acknowledgements**

Acknowledgements go out to the following people:

- N/A

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## 8 Appendix A: Bill of Materials

Short Description	Cataloguing Equipment 'Descriptor'	Applicable KKS number/S	Material Item Characteristics (Detail Description with Defining Design Characteristics)	OEM	OEM Part No	No. of Units in Plant	Quantity required for 5 years on as when required.	SAP Material number
22 kV Gen Circuit Breaker , HEC 8B	GAUGE, PRESSURE	10/20/30/40/50/60 BAC 10(20)(30)	SF6 pressure gauge	ABB Switzerland Ltd	1HC0023263R0001	6	3	655318
22 kV Gen Circuit Breaker , HEC 8B	COOLER	10/20/30/40/50/60 BAC 10(20)(30)	Cooling unit, type TMR 150/601N and TML 150/601N	LTG Incorporated	TMR 150/601N and TML 150/601N	36	4	579898
22 kV Gen Circuit Breaker , HEC 8B	COIL, ELECTRIC	10/20/30/40/50/60 BAC 10(20)(30)	Main drive pilot valve: HMB 8.2 trip/open coil Coil 300W, 220-250VDC, 154 Ohm	ABB Switzerland Ltd	GPFX730259P0001 (old part number) 1HDH111350R0004 (new part number)	12	4	
22 kV Gen Circuit Breaker , HEC 8B	COIL, ELECTRIC	10/20/30/40/50/60 BAC 10(20)(30)	Main drive pilot valve: HMB 8.2 close coil Coil 300W, 220 - 250VDC, 154 Ohm	ABB Switzerland Ltd	GPFX730094P0001 (old part number) 1HDH111350R0002 (new part number)	6	4	
22 kV Gen Circuit Breaker , HEC 8B	BREAKER, CIRCUIT	10/20/30/40/50/60 BAC 10(20)(30)	SF6 density monitor, Type 8730.20.2001.K6	ABB Switzerland Ltd	8730.20.2001.K6	6	3	641119
22 kV Gen Circuit Breaker , HEC 8B	MOTOR,ELECTRIC	10/20/30/40/50/60 BAW 10(20)(30)	Earth Switch & Disconnecter motor: MEC 80/B T6 / F / S / 1.13kW, 400V, 50Hz	ABB Switzerland Ltd	1HC0005396K0001	6	3	
22 kV Gen Circuit Breaker , HEC 8B	Switch, Limit	10/20/30/40/50/60 BAW 10(20)(30)	Earth Switch & Disconnecter limit switch: 1NC contact	Honeywell	BZ-2RW822-A2 (Honeywell) HZN 452874P0001 (ABB)	6	4	
22 kV Gen Circuit Breaker , HEC 8B	Contact, Auxiliary	10/20/30/40/50/60 BAW 10(20)(30)	Earth Switch & Disconnecter auxiliary contacts: 16 contacts, silver plated contacts	GESSMANN AG	HAMT301634P0001	6	4	
22 kV Gen Circuit Breaker , HEC 8B	Contact	10/20/30/40/50/60 BAW 10(20)(30)	Contact (Earth Switch & Disconnecter limit status): 220VDC coil, 16A (7.5kW), 1NO aux contact	Rockwell Automation Allen Bradley	100-C16-ZA-10	12	4	
22 kV Gen Circuit Breaker , HEC 8B	Breaker, Circuit, Low Voltage	10/20/30/40/50/60 BAW 10(20)(30)	Earth switch & Disconnecter motor circuit breaker: 3 pole, 690VAC, 7.5kW, Range 12.5-16A	ABB	1SAM150000R1012	6	4	
22 kV Gen Circuit Breaker , HEC 8B	Contact, Auxiliary	10/20/30/40/50/60 BAW 10(20)(30)	Earth switch & Disconnecter motor circuit breaker auxiliary contact: 2NC contacts	ABB	1SAM101901R0003	6	4	
23 kV Gen Circuit Breaker , HEC 8B	Motor, Electric	10/20/30/40/50/60 BAW 10(20)(30)	Main drive mechanism motor: HMB 8.2 220-250VDC, 1.1kW, 9.2A nominal, 60A startup	ABB	GPFX052220R0008	6	4	
24 kV Gen Circuit Breaker , HEC 8B	Contact, Auxiliary	10/20/30/40/50/60 BAW 10(20)(30)	Main drive auxiliary contacts: 25 contacts, silver plated	ABB	GPFX730247P0001	12	4	
25 kV Gen Circuit Breaker , HEC 8B	Gear, Bevel	10/20/30/40/50/60 BAW 10(20)(30)	Main drive motor straight bevel gear: ID = 12mm 30 teeth	ABB	1HDH111018P0001	6	3	
26 kV Gen Circuit Breaker , HEC 8B	Heater	10/20/30/40/50/60 BAW 10(20)(30)	Main drive space heater: 220-250V 70W 691Ω	Horn	GPFX730173P0002	6	3	
29 kV Gen Circuit Breaker , HEC 8B	Motor, Electric	10/20/30/40/50/60 BAW 10(20)(30)	Cooling fan motor: 1.1kW, 2.6A, 400V, 1415rpm, IE1, 50Hz, Class F	Siemens	1LA7090-4AA13	72	12	579899
30 kV Gen Circuit Breaker , HEC 8B	Transformer, Current	10/20/30/40/50/60 BAW 10(20)(30)	Current transformer: 27000/10A, Class 0.1, 60VA	ABB	1HC0081960M0001	18	4	
31 kV Gen Circuit Breaker , HEC 8B	Transformer, Voltage	10/20/30/40/50/60 BAW 10(20)(30)	Voltage transformer (AVR, Protection and Sync) 22000/√3 // 110V/√3 & 110V/√3 15VA, Class 0.5 & 3P, 30VA, Class 0.2	ABB	TJC7.0-G P/N: 1HC0070488M0011 S/N: 1VLT5210010608 - 1VLT5210010616 (Unit 1)	54	6	
32 kV Gen Circuit Breaker , HEC 8B	Transformer, Voltage	10/20/30/40/50/60 BAW 10(20)(30)	Voltage Transformer (AVR, Protection and Sync) 30VA, Class 0.2	ABB	1VLT5210010608	2	3	
33 kV Gen Circuit Breaker , HEC 8B	Surge Arrestor	10/20/30/40/50/60 BAW 10(20)(30)	Surge arrestor Type POLIM-H 27N 20KA	ABB	HAGG200722R0127	18	3	

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**Medupi Power Station Works Information  
for 22kV Export Systems (IPB&GCB) supply  
spares contract**

Unique Identifier: **241-20221042**

Revision: **1**

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Short Description	Cataloguing Equipment 'Descriptor'	Applicable KKS number/S	Material Item Characteristics (Detail Description with Defining Design Characteristics)	OEM	OEM Part No	No. of Units in Plant	Quantity required for 5 years on as when required.	SAP Material number
34 kV Gen Circuit Breaker , HEC 8B	Capacitor	10/20/30/40/50/60 BAW 10(20)(30)	Capacitor: 0.26uF, insulation level: 80/150kV, Rated Voltage: 36kV, Casing: Stainless steel EN 144,04	ABB	2GHV016770A0002	18	3	
35 kV Gen Circuit Breaker , HEC 8B	Capacitor	10/20/30/40/50/60 BAW 10(20)(30)	Capacitor: 0.13uF, insulation level: 80/150kV, Rated Voltage: 36kV, Casing: Stainless steel EN 144,04	ABB	2GHV016770A0001	18	3	
36 kV Gen Circuit Breaker , HEC 8B	Thermostat	10/20/30/40/50/60 BAW 10(20)(30)	Panel hygrostat: Temperature range 0-60 Deg C Humidity range 50-90% 100-240VAC	Stego	01230.0-00	6	4	
37 kV Gen Circuit Breaker , HEC 8B	Heater, Space	10/20/30/40/50/60 BAW 10(20)(30)	Panel heater: 100W 120-240VAC	Stego	14007.0-00	12	4	
38 kV Gen Circuit Breaker , HEC 8B	Breaker, Circuit, Low Voltage	10/20/30/40/50/60 BAW 10(20)(30)	Mimic MCB: 1 Pole, 0.5A, Z curve S281 UC-Z0.5	ABB	GHS2810164R0158	6	4	
39 kV Gen Circuit Breaker , HEC 8B	Breaker, Circuit, Low Voltage	10/20/30/40/50/60 BAW 10(20)(30)	Internal VT (400/230VAC) MCB, 230VAC side: 1 Pole, 1A, C curve S201 P-C1	ABB	2CDS281001R0014	12	4	
40 kV Gen Circuit Breaker , HEC 8B	Breaker, Circuit, Low Voltage	10/20/30/40/50/60 BAW 10(20)(30)	Internal VT (400/230VAC) MCB, 400VAC side: 2 Pole, 1A, K curve S282UC-K1	ABB	GHS2820164R0217	6	4	
41 kV Gen Circuit Breaker , HEC 8B	Breaker, Circuit, Low Voltage	10/20/30/40/50/60 BAW 10(20)(30)	Trip 1 & 2, close & mimic MCB: 2 Pole, 4A, K curve S282 UC-K4	ABB	GHS2820164R0337	18	4	
42 kV Gen Circuit Breaker , HEC 8B	Breaker, Circuit, Low Voltage	10/20/30/40/50/60 BAW 10(20)(30)	Main pump motor MCB: 2 Pole, 16A, K curve S282 UC-K16	ABB	GHS2820164R0467 2CDS272061R0467	6	4	
43 kV Gen Circuit Breaker , HEC 8B	Breaker, Circuit, Low Voltage	10/20/30/40/50/60 BAW 10(20)(30)	Phase sequence relay MCB: 3 Pole, 0.5A, K curve S203-K0,5	ABB	2CDS253001R0157	12	4	
44 kV Gen Circuit Breaker , HEC 8B	Breaker, Circuit, Low Voltage	10/20/30/40/50/60 BAW 10(20)(30)	VT MCBs: 3 Pole, 2A, Z curve S203P-Z2	ABB	2CDS283001R0278	104	6	
45 kV Gen Circuit Breaker , HEC 8B	Contact, Auxiliary	10/20/30/40/50/60 BAW 10(20)(30)	Auxiliary contact block (VT MCB): 1NO & 1NC contact, lateral mount S2C-H11L	ABB	2CDS200936R0001	12	4	
46 kV Gen Circuit Breaker , HEC 8B	Switch, Disconnect	10/20/30/40/50/60 BAW 10(20)(30)	Switch disconnector (400V Standby BD supply): 4 Pole, 40A	ABB	OT40F4N2 1SCA104932R1001	12	4	
47 kV Gen Circuit Breaker , HEC 8B	Contact, Auxiliary	10/20/30/40/50/60 BAW 10(20)(30)	Aux contact: 1NO & 1 NC	ABB	OA2G11 1SCA022379R8100	24	4	
48 kV Gen Circuit Breaker , HEC 8B	Breaker, Circuit, Low Voltage	10/20/30/40/50/60 BAW 10(20)(30)	Panel heating & lighting RCBO: 2 Pole (L-N), 16A, 30mA, 230VAC DS201 B16 A30	ABB	2CSR255140R1165	6	4	
49 kV Gen Circuit Breaker , HEC 8B	Relay, Control	10/20/30/40/50/60 BAW 10(20)(30)	Control relay: 220VDC coil, 2NO & 2NC contacts 700-K22Z-ZA	Rockwell Automation Allen Bradley	700-K22Z-ZA	30	6	
50 kV Gen Circuit Breaker , HEC 8B	Contact, Auxiliary	10/20/30/40/50/60 BAW 10(20)(30)	Long time pump running control relay: 4NO contacts,	ABB	MG40EG (old) AF26-40-00-13 (new) 1SBL237201R1300	6	4	
51 kV Gen Circuit Breaker , HEC 8B	Relay, Time	10/20/30/40/50/60 BAW 10(20)(30)	Time delay relay (long time pump running & fan changeover): 24 - 220VAC or VDC coil, DPDT, 2CO contacts, 0.05 seconds to 60 hours.	Rockwell Automation Allen Bradley	700-FSM4UU18 (drawings) 700-FSM4UU23 (new)	48	6	
52 kV Gen Circuit Breaker , HEC 8B	Relay	10/20/30/40/50/60 BAW 10(20)(30)	Auxiliary relay: 11 pin (round), 220VDC coil, 3CO, 10A contact rating @ 250VAC	Finder	60.13.9.220.0040	42	4	
53 kV Gen Circuit Breaker , HEC 8B	Relay	10/20/30/40/50/60 BAW 10(20)(30)	Auxiliary relay: 11 pin (round), 230VAC coil, 3CO, 10A contact rating @ 250VAC	Finder	60.13.8.230.0040	54	4	
54 kV Gen Circuit Breaker , HEC 8B	Base, Relay	10/20/30/40/50/60 BAW 10(20)(30)	Relay base (Finder Series 60 auxiliary relays): 11 pin (round), DIN rail mount	Finder	90.03.SMA	90	4	
55 kV Gen Circuit Breaker , HEC 8B	Relay	10/20/30/40/50/60 BAW 10(20)(30)	Auxiliary relay: 11 pin (flat), 220VDC coil, 3CO, 16A contact rating @ 250VAC	Finder	62.33.9.220.0300	12	4	

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**Medupi Power Station Works Information  
for 22kV Export Systems (IPB&GCB) supply  
spares contract**

Unique Identifier: **241-20221042**

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Short Description	Cataloguing Equipment 'Descriptor'	Applicable KKS number/S	Material Item Characteristics (Detail Description with Defining Design Characteristics)	OEM	OEM Part No	No. of Units in Plant	Quantity required for 5 years on as when required.	SAP Material number
56 kV Gen Circuit Breaker , HEC 8B	Relay	10/20/30/40/50/60 BAW 10(20)(30)	Auxiliary relay: 11 pin (flat), 230VAC coil, 3CO, 16A contact rating @ 250VAC	Finder	62.33.8.230.0040	18	4	
57 kV Gen Circuit Breaker , HEC 8B	Base, Relay	10/20/30/40/50/60 BAW 10(20)(30)	Relay base (Finder Series 62 auxiliary relays): 11 pin (flat), DIN rail mount, with clip	Finder	92.03.SMA	18	4	
58 kV Gen Circuit Breaker , HEC 8B	Transformer	10/20/30/40/50/60 BAW 10(20)(30)	Panel Internal VT: 1 phase, 400VAC/230VAC, 250VA	Riedel	RSTN 250	12	4	
59 kV Gen Circuit Breaker , HEC 8B	Contact, Block	10/20/30/40/50/60 BAW 10(20)(30)	Auxiliary Contact Block (contactor limit switch): Front mount, 2NO & 2NC contacts	Rockwell Automation Allen Bradley	100-FC22	24	4	
60 kV Gen Circuit Breaker , HEC 8B	Module	10/20/30/40/50/60 BAW 10(20)(30)	Surge suppression module (contactor limit switch):	Rockwell Automation Allen Bradley	100-FSV277	24	4	
61 kV Gen Circuit Breaker , HEC 8B	Contactor	10/20/30/40/50/60 BAW 10(20)(30)	Contactor (Control voltage indication): 230VAC coil, 16A (7.5kW), 1NC aux contact	Rockwell Automation Allen Bradley	100-C16-KF-01	24	5	
62 kV Gen Circuit Breaker , HEC 8B	Relay	10/20/30/40/50/60 BAW 10(20)(30)	Current relay (cooler change over relay): 230VAC coil	Dold	SP9271.12	36	5	
63 kV Gen Circuit Breaker , HEC 8B	Contactor	10/20/30/40/50/60 BAW 10(20)(30)	Cooling Fan Contactor: 230VAC coil, 9A (4kW), 1NO aux contact	Rockwell Automation Allen Bradley	100-K09-KF-10	36	5	
64 kV Gen Circuit Breaker , HEC 8B	Relay	10/20/30/40/50/60 BAW 10(20)(30)	Phase sequence relay: 400VAC	Dold	BD9080.12/3AC400	12	4	
65 kV Gen Circuit Breaker , HEC 8B	Counter	10/20/30/40/50/60 BAW 10(20)(30)	Number of operations counter: 6 digit, 220VDC	Hengstler	0 464 181 / 220VDC SR	12	3	
66 kV Gen Circuit Breaker , HEC 8B	Switch	10/20/30/40/50/60 BAW 10(20)(30)	Cooling change-over switch timer:	Legrand	D22 A4 41 92	6	4	
67 kV Gen Circuit Breaker , HEC 8B	Breaker, Circuit, Low Voltage	10/20/30/40/50/60 BAW 10(20)(30)	Cooling fan motor circuit breaker: 3 pole, 690VAC, 4kW, Range 6.3-9A	ABB	1SAM150000R1010	36	6	
68 kV Gen Circuit Breaker , HEC 8B	Contact, Auxiliary	10/20/30/40/50/60 BAW 10(20)(30)	Cooling fan motor circuit breaker auxiliary contact: 1NO & 1NC contacts	ABB	1SAM101928R0001	36	3	
69 kV Gen Circuit Breaker , HEC 8B	Switch, Key	10/20/30/40/50/60 BAW 10(20)(30)	Local, Lamp Test, Remote key switch: 3 position	Ghielmetti Schaltgeräte	1HC0004369P0002	6	3	684858
70 kV Gen Circuit Breaker , HEC 8B	Pushbutton	10/20/30/40/50/60 BAW 10(20)(30)	Ventilation system reset pushbutton: Red, flat, 22.5mm	EAO AG	704.210.2	6	3	
71 kV Gen Circuit Breaker , HEC 8B	Pushbutton	10/20/30/40/50/60 BAW 10(20)(30)	Ventilation system reset pushbutton: Actuating mechanism, 500VAC, 10A, 2NC contacts	EAO	704.910.4	6	3	
72 kV Gen Circuit Breaker , HEC 8B	Convertor	10/20/30/40/50/60 BAW 10(20)(30)	Power supply module (24VDC internal): 220VDC to 24VDC, 1.5A output	Mean Well	S25-24	6	3	
73 kV Gen Circuit Breaker , HEC 8B		10/20/30/40/50/60 BAW 10(20)(30)	On/Off illuminated pushbutton actuator element: 16mm diameter, 250VAC, 5A, 1NO & 1NC contact	EAO	01-151.022	36	6	
74 kV Gen Circuit Breaker , HEC 8B	Terminal	10/20/30/40/50/60 BAW 10(20)(30)	Terminal (orange connector block): WAGO 231-324/026-000	WAGO	231-324/026-000	24	6	
75 kV Gen Circuit Breaker , HEC 8B	Terminal	10/20/30/40/50/60 BAW 10(20)(30)	Terminal (orange connector block): WAGO 231-320/026-000	WAGO	231-320/026-000	6	6	
Isolated phase Busbar (IPB)	INSULATOR	10/20/30/40/50/60 BAA 10(20)(30)	Sets of IPB Insulators (side insulator, synthetic rubber, insulator fixed thrust, insulator for tube, enclosure bellows)	ABB Switzerland Ltd	1180G511 1180G512 1180G515 1180G516	18 sets	3 sets	644800
Isolated phase Busbar (IPB)	CONNECTOR, ELECTRICAL	10/20/30/40/50/60 BAA 10(20)(30)	41 Copper (Cu) Flexibles per phase per side (528 laminated flexible), transformer and generator side connection of a breaker.) M12X90.	ABB Switzerland Ltd	Same as utilized on GCB, Serial no 1HC210178656-10	24 sets	6 sets	6549443
Isolated phase Busbar (IPB)	CONNECTOR, ELECTRICAL	10/20/30/40/50/60 BAA 10(20)(30)	1536 Cu Flexibles per Generator trfr connections and 768 Cu flexibles per Unit trfr connections (900 laminated flexible), M12X100.	ABB Switzerland Ltd	No info	288 sets	6 sets	

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**Medupi Power Station Works Information  
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Short Description	Cataloguing Equipment 'Descriptor'	Applicable KKS number/S	Material Item Characteristics (Detail Description with Defining Design Characteristics)	OEM	OEM Part No	No. of Units in Plant	Quantity required for 5 years on as when required.	SAP Material number
Isolated phase Busbar (IPB)	CONDUCTOR, ELECTRICAL	10/20/30/40/50/60 BAA 10(20)(30)	IPB 80 sheets (100kg) each x 10mm enclosure Aluminium 1050	ABB Switzerland Ltd	E1700G100	18	4	644213
Isolated phase Busbar (IPB)	CONDUCTOR, ELECTRICAL	10/20/30/40/50/60 BAA 10(20)(30)	IPB 160 sheets (160kg) x 16mm conductor Aluminium 1050	ABB Switzerland Ltd	C1000G154	18	4	644212
Isolated phase Busbar (IPB)	TRANSFORMER, CURRENT	10/20/30/40/50/60 BAA60CE600	Current Transformer, Ratio 27000/10A, Class-X, V <sub>k</sub> >800V	Phoenix	Class-X	54	3	648405
Isolated phase Busbar (IPB)	TRANSFORMER, CURRENT	10/20/30/40/50/60 BAA60CE500	Current Transformer, Ratio 27000/10A, Class-5P40, 60VA	Phoenix	Class-5P40	36	3	645092
Isolated phase Busbar (IPB)	TRANSFORMER, CURRENT	10/20/30/40/50/60 BAA60CE500	Current Transformer, Ratio 3000/1A, Class-X, 50VA	Phoenix	Class-X	36	3	
Isolated phase Busbar (IPB)	TRANSFORMER, CURRENT	10/20/30/40/50/60 BAA60	Auxiliary Cubicle Equipment (Secondary CT's )	Phoenix	No info	126	3	
Isolated phase Busbar (IPB)	TRANSFORMER, CURRENT	10/20/30/40/50/60 BAA61	Auxiliary Cubicle Equipment (Secondary CT's )	Phoenix	No info	90	3	
Isolated phase Busbar (IPB)	TRANSFORMER, CURRENT	10/20/30/40/50/60 BAA62GH002	Auxiliary Cubicle Equipment (Secondary CT's )	Phoenix	No info	36	3	
Isolated phase Busbar (IPB)	CAPACITOR	10/20/30/40/50/60 BAA (10)(20)	Capacitor, Type BIORIPHASO/TFAT/S 0.26/36/C	Phoenix	BIORIPHASO/TFAT/S 0.26/36/C	36	3	648400
Isolated phase Busbar (IPB)	ARRESTER, ELECTRICAL	10/20/30/40/50/60 BAA (10)(20)	Surge Arrestor, Type POLIM-H 27N 20KA	ABB Switzerland Ltd	POLIM-H 27N 20KA	36	3	579900
Isolated phase Busbar (IPB)	TRANSFORMER, POTENTIAL	10/20/30/40/50/60 BAA (10)(20)	VOLTAGE TRANSFORMER, EPR30Z	RIEDEL	Same as utilized on VT's, Serial no 1833100018, EPR30Z	72	3 set	631210
Isolated phase Busbar (IPB)	TRANSFORMER, POTENTIAL	10/20/30/40/50/60 BAA (10)(20)	MV Fuse for Voltage Transformer(11 kV), EPR30Z	RIEDEL	Same as utilized on VT's, Serial no 1833100018, EPR30Z	72	3 set	
Isolated phase Busbar (IPB)	VALVE,GATE	10/20/30/40/50/60 BAA (10)(20)	Pressure Reduction Valve	ABB Switzerland Ltd	FISHER type S402 13,7 to 20 mbar	18	4	647406
Isolated phase Busbar (IPB)	VALVE,GATE	10/20/30/40/50/60 BAA (10)(20)	Rotary Plug valve	ABB Switzerland Ltd	1/4" male and female ref 0401,07,13	18	4	647406
Isolated phase Busbar (IPB)	VALVE,GATE	10/20/30/40/50/60 BAA (10)(20)	Safety Valve	ABB Switzerland Ltd	CIRCLE SEAL serial 500 ref. 559,B,8M1 35mbars	18	4	67730

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