Eskom	Work Instruction	Medupi Power Station

.

Title: **Medupi Power Station Clean Drain System Valves Spare Scope of Work**

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1. Introduction

The scope of work for Medupi Power Station clean drain system spares valve is necessary to ensure the reliable operation and maintenance of the clean drain system by highlighting the importance of having critical valve spares readily available. Maintaining an adequate inventory of spares minimizes downtime during repairs, enhances system efficiency, and ensures quick resolution of valve failures. This proactive approach supports uninterrupted operations, reduces the risk of production losses such as unit trip or load loss, and promotes long-term asset sustainability.

2. Supporting Clauses

2.1 Scope

The Scope of Work (SOW) outlines the required spare valves for the turbine section of the clean drains system, specifying the quantities to be supplied, the specific valve types or part numbers, and the conditions for their acceptance. These spare parts will be provided by either the supplier or the Original Equipment Manufacturer (OEM). The acceptance criteria include quality standards, performance specifications, testing requirements, and compliance with regulatory or operational standards to ensure proper functionality and reliability.

2.1.1 Purpose

The purpose of this document is to define the scope of work for procurement of the clean drain system valve spares and three way valves spares.

2.1.2 Applicability

This document shall apply to Medupi Power Station turbine clean drain system valves including the three-way valve.

2.1.3 Effective date

The effective date of this document is the date of authorisation.

2.2 Normative/Informative References

Parties using this document shall apply the most recent edition of the documents.

2.2.1 Normative

N/A.

2.2.2 Informative

N/A

2.3 Definitions

Definition	Explanation
Contractor	Service provider contracted for supplying and delivering clean drain system valves and a three-way valve.
Employer	Eskom Medupi Power Station

2.3.1 Document:

To add more applicable definitions

2.4 Abbreviations.

Abbreviation	Explanation
ACC	Air Cooled Condensate
BOM	Bill of Material
OEM	Original Equipment Manufacturer
RACI	Responsible Accountable Consulted Informed
SOW	Scope of Work

2.5 Roles and Responsibilities

Responsibility and accountability as per RACI

Responsible	Accountable	Consult	Inform
Contract manager.	Contract manager	Buyer	Maintenance, ACC System Engineer
Assurance that all actions listed in this SOW are undertaken (follow up, advice, consultation)	Implementation of this SOW, random reviews and audits for adherence, provide assurance that any deviations will be corrected.	Provide support, advice and communication with outside stakeholders where needed.	Planning and advice

2.6 Process for Monitoring

This document will serve as a one-time statement outlining the scope of work for a spare parts supply and delivery contract

2.7 Related/Supporting Documents

N/A.

3. Clean Drain System Valve and a Three-Way Valve Scope of Work

3.1 Supply and Delivery

The contractor will be responsible for supplying and delivering spare parts for the clean drain system valves, including the three-way valve, at Medupi Power Station. A detailed list of the required items in the bill of materials under Appendix A, Table 1.

The quantities provided are estimates and may vary based on operational breakdowns, stock levels, and Medupi's requirements over a five-year period. These estimated quantities are based on current operational experience and information, and as such, Medupi is not obligated to purchase the full estimated amount. Task orders for specific spares will only be issued as needed, depending on actual requirements.

The spare parts list includes high-turnover items and critical spares, primarily focused on areas such as LCM valves. These spares are essential to maintaining the ongoing operation and reliability of the plant. Regular assessments will be made to ensure that appropriate quantities are available, and the contractor is expected to remain flexible in meeting the evolving needs of Medupi Power Station.

The following are the Supplier's obligations:

a) The Supplier shall ensure that the correct spares are supplied. If incorrect or defective spares are delivered, the Supplier will be liable for replacing them or covering the associated costs.

b) The Employer (Eskom Holdings SOC) acceptance of delivered spares does not release the Supplier from responsibility for supplying the correct or defect-free spares.

c) At the Employer's discretion, the Supplier may be granted access to the plant to verify the details of the installed spares.

d) The spares must meet the exact specifications of the installed items and those outlined in the works information. The Supplier is responsible for verifying the accuracy of the spares information provided by the Employer, which may include consulting the original spares supplier. Additionally, the Supplier must account for potential changes in the design basis, ensuring that all procured spares remain compatible with any updated system requirements

e) The Employer may, at their discretion, make the Employer's Engineer, employees, or other personnel available to the Supplier for the purpose of obtaining additional information or verifying details as needed.

f) The Supplier shall provide any additional documentation such as brochures, general arrangement drawings, certificates, or detailed specifications as required.

g) The Supplier must provide the Employer with the required spare parts information and verify the details needed for data capturing forms (DCF) at least three months after the contract conclusion, or, if the lead time is less than three months, a week before the respective spare parts are delivered.

h) The Supplier must provide preservation and storage procedures where applicable.

i) The Spares Procurement Limit, as indicated by the Employer in the bill of materials under Appendix A, is an estimate of the spares the Employer may require over the contract period. However, the Supplier shall only supply the quantities specified in individual order instructions, and the Spares Procurement Limit does not guarantee or entitle the Supplier to deliver the total estimated quantity.

j) If Eskom has entered into National Framework agreements with Suppliers after this agreement has been established, the Employer will not be obligated to purchase those items under this agreement, as it is an 'as-and-when-required' agreement and the quantity of items to be supplied is not fixed.

k). If testing is required for the spare parts, the Supplier must notify the Employer, who will arrange for the Employer's representative to witness the tests in the event that the System Engineer is unavailable.

l) If the Employer is dissatisfied with any aspect of the spare part tests (including but not limited to suspected poor quality or non-compliance), the Supplier will be required to correct the issues, repair the faults, or replace the spare at their own cost.

m) A complete price breakdown must accompany the quotation and include the cost of transportation to Medupi Power Station. However, the Employer reserves the right to use its own transportation.

n) Spares will be subject to inspection, counting, and quality control checks at the Employer's stores.

o) The Employer may offer clarification sessions to prospective Suppliers to assist them in meeting the requirements of the work to be performed.

p) The Supplier must provide the lead time for all required items in the tender for the contract.

q) The Supplier must ensure that all parts are individually packed in a manner that protects them during transport and storage. The packaging must also include proper labels to identify the items.

3.2 Acceptance of Spares

3.2.1 Spare Part Classification

The Bill of Materials outlines a detailed inventory of all spares to be procured under this SOW. This inventory is in correspondence with the electronic version of the DCFs, which provide additional specifics on the required spares. Each spare part is distinctly identified by its KKS number (used within the Power Station), part description, OEM, and/or the OEM part number or drawing number, along with position numbers where available. This method ensures clear identification and traceability, allowing for precise ordering, timely delivery, and efficient maintenance tracking

3.2.2 Replacement Parts Modifications

I. If any equipment or spare parts, including entire assemblies, have been upgraded or modified, the Supplier must notify the Employer of this as part of the tender submission. In the event that the upgrade or modification is identified after the tender has been issued, the Supplier must immediately inform the Employer. The Supplier should also provide detailed information regarding the compatibility of the upgraded or modified component with the existing system.

II. If the components to be supplied are, or are expected to be, obsolete within three years of the tender submission, the Supplier must notify the Employer and propose viable alternatives. This should include options that meet the same specifications and functionality to ensure continued operational efficiency and minimize the risk of future supply issues. Additionally, the Supplier should outline any potential impacts on maintenance and support for the proposed alternatives.

3.2.3 Packaging

I. All supplied spares must be packaged to ensure full protection from damage during transportation and storage. This includes preventing moisture, dust, and contamination from foreign objects. The packaging should also be strong enough to withstand physical impact and external pressure, preventing damage from rough handling during transit.

II. Each type of spare part should be packaged separately to allow for efficient storage and retrieval. The packaging must enable easy identification of each spare without needing to open it, using clear labels and markings. The materials used for packaging should be durable enough to endure harsh weather conditions during transport. If this is not possible, additional protective layers should be applied to safeguard the spares from environmental factors, ensuring they reach their destination in the same condition as when they left the Supplier.

III. Whenever feasible, packaging should be designed to allow for immediate identification of the spare parts without the need to open the package. If this is not practical, the packaging should be designed to allow it to be opened and resealed while maintaining its integrity and protective qualities, ensuring the parts remain safely enclosed during storage and handling.

IV. To facilitate proper identification and tracking of the spares, the delivery packaging must clearly display the following details:

- Order number for quick reference and tracking
- Physical addresses of both Medupi Power Station and the Supplier to ensure accurate delivery
- Supplier’s contact details for addressing any inquiries or issues during delivery
- Delivery note number for proper documentation and verification upon receipt

Additionally, the Supplier is encouraged to use sustainable and eco-friendly packaging materials where possible, without compromising the strength and durability of the packaging. Proper labelling and clear documentation will help streamline the receiving process and reduce the chances of errors or delays.

3.2.3 Acceptance of Spares

a) No spares that are incorrect, damaged, or defective will be accepted under any circumstances.

b) All spares must undergo a comprehensive inspection prior to the processing of any payments. This inspection ensures that the spares meet the agreed-upon quality standards and specifications.

c) The Supplier must provide completed data capturing forms, and the information provided must meet the required standards of accuracy and completeness.

d) Where applicable, the Supplier must supply any relevant documentation, such as test certificates, material certificates, manuals, data sheets, and signatures, as per the specific requirements.

e) The Supplier is required to provide references from other companies to whom similar spares have been supplied. This should include supply order/contract value, contact names, physical addresses, and telephone numbers for verification.

f) The Supplier is responsible for ensuring that all spares provided adhere to the required specifications. All necessary documentation must be complete and accurate. Any discrepancies or issues discovered during inspection must be addressed promptly at the Supplier's expense.

g) Ongoing communication between the Supplier and Employer is crucial to address any potential issues or discrepancies swiftly, ensuring a smooth acceptance and delivery process. The Employer reserves the right to request further clarifications or corrective actions if necessary.

3.2.4 Required Documentation and Details

The Supplier will receive an electronic Data Capture Form (DCF) for each required spare. It is the Supplier's responsibility to ensure the information provided on the DCFs is accurate and complete. These forms are essential for the Purchaser's Material Management System, which relies on the data to effectively store and manage items. The details provided must also be sufficient to facilitate the correct procurement of spares in the future. While most DCFs have already been pre-filled by the Purchaser based on available information, it is important to note that this data may not be entirely accurate. Therefore, the Supplier is required to review, verify, and correct any discrepancies as part of their service.

The following details must be provided in the DCFs with as much precision as possible:

a) The Supplier must carefully review and verify the existing data already populated on the DCFs. If necessary, the Supplier should make amendments, ensuring that the 'Track Changes' function remains active to highlight any alterations.

b) The Supplier must include further details in the "Free Format Text" or "Purchase Order Text" sections of the DCFs. This should include:

- The applicable standards or specifications that the spare must adhere to.
- Any missing information related to spare part identification, packaging, and protection requirements during transport and storage.
- The necessary quality control measures for manufacturing and testing, ensuring that the spares meet the specified standards or requirements. This may include test certificates and other relevant documentation that must accompany the delivery.

c) The Supplier must provide any other pertinent information not explicitly requested on the DCFs but necessary for the storage, preservation, installation, or use of the spares. This may include technical brochures, data sheets, assembly instructions, and other documentation that could assist in proper handling and operation of the spares.

d) The completed DCFs, along with the additional information, must be submitted electronically to the Employer for review and record-keeping.

e) Any other relevant information that is not specified on the DCFs but is critical for the safe storage, preservation, installation, and use of the spares should be included. This may encompass operating manuals, installation guides, and any other technical specifications that are necessary for ensuring the effective use of the supplied spares.

Additionally, the Supplier is encouraged to provide any recommendations based on their experience with similar parts and their use in the field. This can include suggestions for storage best practices, potential concerns regarding part compatibility, or any other relevant observations that may help maintain operational efficiency and safety.

By providing comprehensive and accurate information, the Supplier helps ensure smooth procurement, storage, and future utilization of the spares, which ultimately contributes to the ongoing reliability and success of the project. Regular communication and updates to the DCFs will be necessary to address any discrepancies and ensure that the information remains current and accurate throughout the procurement process

4. Acceptance

This document has been seen and accepted by:

Full Name and Surname	Designation
Dipolelo Matjipa	System Engineer
Lwazi Mohoto	Senior Technician
Siphesihle Noguda	Senior Supervisor Technician

5. Revisions

Date	Rev.	Compiler	Remarks
February 2025	1	Kalaba Karabo Mankge	Having spares for clean drain system valves is essential to prevent downtime, minimize repair time, ensure system efficiency and safety, reduce costs, optimize maintenance schedules, extend equipment lifespan, and comply with industry regulations. Spares allow for quick replacements, preventing leaks and accidents, avoiding expensive emergency repairs, and maintaining smooth operations.

6. Development Team

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

Name	Designation
Kalaba Karabo Mankge	Engineer in Training

7. Acknowledgements(if applicable)

N/A

8. Appendix A

Table 1: Bill of Material for Clean Drain System (LCM)

KKS	Type Of Spare	Description	Material number	Quantity for 5 years
LCM20 AA301 302	Globe Valve	DN15		10
LCM20 AA301 302	Globe Valve Repair kit	DN15		18
LCM41 AA102	Valve butterfly	DN80, Process Conditions: Flow: 305m3/h, T =1200C, at 750 kPa, Output signal type: 4 -20mA, Manifold / Valve Material: 1.4571, Rack mounting type , Mounting Bracket Material		8
LCM41 AA102	Valve butterfly Repair kit	DN80, Process Conditions: Flow: 305m3/h, T =1200C, at 750 kPa, Output signal type: 4 -20mA, Manifold / Valve Material: 1.4571, Rack mounting type , Mounting Bracket Material		15

KKS	Type Of Spare	Description	Material number	Quantity for 5 years
LCM45 AA601	Minimum flow valve	Recirculation valve, 8"inlet, 8"outlet, 150#, horizontal	0581716	10
LCM45 AA601	Minimum flow valve Repair Kit	Recirculation valve, 8"inlet, 8"outlet, 150#, horizontal		10
LCM41 AA601, LCM42 AA601	Minimum flow valve	Recirculation valve, 6"inlet, 6"outlet, 150#, horizontal	0581717	10
LCM41 AA601, LCM42 AA601	Minimum flow valve Repair Kit	Recirculation valve, 6"inlet, 6"outlet, 150#, horizontal		10
LCM52 AA001 LCM51 AA002 LCM51 AA501 LCM51 AA502 LCM51 AA503	Valve Ball	DN300		4
LCM52 AA001 LCM51 AA002 LCM51 AA501 LCM51 AA502 LCM51 AA503	Valve Ball Repair Kit	DN300		10
LCM51 AA504	Valve	Butterfly valve PN16 DN 350	0653967	10
LCM51 AA504	Valve Repair Kit	Butterfly valve PN16 DN 350		10

KKS	Type Of Spare	Description	Material number	Quantity for 5 years
LCM41-42/45 AA403	Valve	BALL VALVE; 15 kPa; DN25. Welded	0656215	10
LCM41-42/45 AA403	Valve Repair Kit	BALL VALVE; 15 kPa; DN25. Welded		15
LCM30 AA301 302 306 – 10 MAG95 AA 301 302 305 – 310	Valve	ALVE, BALL:DN50;15 KPA;FLANGE;PTFE	0656218	15
LCM30 AA301 302 306 – 10 MAG95 AA 301 302 305 – 310	Valve Repair Kit	ALVE, BALL:DN50;15 KPA;FLANGE;PTFE		20
LCM30 AA303 304 403 404 MAG95 AA 303 304 404 405	Valve	DN25, Flanged		16
LCM30 AA303 304 403 404 MAG95 AA 303 304 404 405	Valve Repair Kit	DN25, Flanged		20

KKS	Type Of Spare	Description	Material number	Quantity for 5 years
LCM30 AA402 MAG95 AA402 403	Valve, Ball	VALVE, BALL:DN100;15 KPA;FLANGE;PTFE	0656219	10
LCM30 AA402 MAG95 AA402 403	Valve, Ball Repair Kit	VALVE, BALL:DN100;15 KPA;FLANGE;PTFE		14
LCM52 AA101	Valve butterfly	DN150		5
LCM52 AA101	Valve butterfly Repair Kit	DN150		15
LCM52 AA601	Valve Check	DN150		8
LCM52 AA601	Valve Check Repair Kit	DN150		15
LCM45 AA501	Valve	Butterfly valve ; PN16; DN 100	0653977	4
LCM45 AA501	Valve Repair Kit	Butterfly valve ; PN16; DN 100		15
LCM41 AA501 LCM42 AA501	Valve	Butterfly valve; PN16; DN80	0653973	4

KKS	Type Of Spare	Description	Material number	Quantity for 5 years
LCM41 AA501 LCM42 AA501	Valve Repair Kit	Butterfly valve; PN16; DN80		12
LCM45 AA102	Valve	Butterfly valve PN16 DN 350	0653967	6
LCM45 AA102	Valve Repair Kit	Butterfly valve PN16 DN 350		12
LCM45 AA101	Valve	Butterfly valve; PN16; DN500	0653964	4
LCM45 AA101	Valve Repair Kit	Butterfly valve; PN16; DN500		10
LCM41 42 AA101	Valve	Butterfly valve; PN16; DN350 120 degC	0634022	4
LCM41 42 AA101	Valve Repair Kit	Butterfly valve; PN16; DN350 120 degC		10
LCM41 42 45 AA302 401 402 404/ LCM50 AA 301 – 309 MAJ 20 AA301	Valve Globe	DN15 Globe valve		10

KKS	Type Of Spare	Description	Material number	Quantity for 5 years
LCM41 42 45 AA302 401 402 404/ LCM50 AA 301 – 309 MAJ 20 AA301	Valve Globe Repair Kit	DN15 Globe valve		18
LCM41/42 AA301 303-304 MAG95 AA311 LCM30 AA311 MAG01 -02 AA301 302 303 304	Valve	BALL VALVE; 15 kPa; DN25. Flanged	0656209	8
LCM41/42 AA301 303-304 MAG95 AA311 LCM30 AA311 MAG01 -02 AA301 302 303 304	Valve Repair Kit	BALL VALVE; 15 kPa; DN25. Flanged		18
LCM45 AA302 LCM45 AA301 LCM45 AA304 LCM45 AA303 LCM50 AA301-309	Valve	Globe VALVE; PN20; DN15	0659220	15
LCM45 AA302 LCM45 AA301 LCM45 AA304 LCM45 AA303 LCM50 AA301-309	Valve Repair Kit	Globe VALVE; PN20; DN15		20

KKS	Type Of Spare	Description	Material number	Quantity for 5 years
LCM 41 42 45 AA403	Valve	Ball Valve; PN20; DN25 , Welded	0656215	8
LCM 41 42 45 AA403	Valve Repair Kit	Ball Valve; PN20; DN25 , Welded		16
LCM41 AA102 LCM42 AA102	Butterfly Valve	Butterfly valve PN16 DN 250	0653957	6
LCM41 AA102 LCM42 AA102	Butterfly Valve Repair Kit	Butterfly valve PN16 DN 250		15
LCM 10 AA301 AA302	Globe valve	Globe valve, welded, DN 15 class 800		6
LCM 10 AA301 AA302	Globe valve, Repair kit	Globe valve, welded, DN 15 class 800		15
MAJ 25 AA501	Globe Valve, Flanged	Globe valve (control cone) DN50		4
MAJ 25 AA501	Globe Valve, Flanged Repair Kit	Globe valve (control cone) DN50		10

KKS	Type Of Spare	Description	Material number	Quantity for 5 years
MAG95 AA 303 304 404 405	Ball Valve	DN25, flanged ball valve		5
MAG95 AA 303 304 404 405	Ball Valve Repair Kit	DN25, flanged ball valve		10
LCW41 42 45 AA501	Globe valve	Globe valve (control cone), DN15		5
LCW41 42 45 AA501	Globe valve Repair Kit	Globe valve (control cone), DN15		12