| Eskom | Scope of work | Technology |
|---|---|---|

Title: **Unit 1-6 Fuel Oil Valves Refurbishment Scope Of Work**

| | |
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# 1. INTRODUCTION

Duvha unit 1-6 fuel oil valves must be refurbished on a three yearly basis to ensure that the fuel oil plant operates in accordance to the design base.

# 2. SUPPORTING CLAUSES

## 2.1 SCOPE

The document covers the works information for the minimum technical requirements for the stripping, assessment, refurbishment, final assembly, Contractor workshop testing, and delivery of the fuel oil valves for boilers 1-6 at Duvha Power Station during outages.

### 2.1.1 Purpose

The purpose of this specification is to refurbish the fuel oil valves to OEM specifications and to meet operational requirements.

### 2.1.2 Applicability

This document shall apply to Duvha Power Station

## 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.

### 2.2.2 Informative

### 2.2.3 Disclosure Classification.

**Controlled disclosure:** controlled disclosure to external parties (either enforced by law, or discretionary).

## 2.3 ABBREVIATIONS

| Abbreviation | Description |
|---|---|
| HP | High pressure |
| KW | Kilo Watt |
| MPA | Mega Pascal |
| OEM | Original Equipment Manufacturer |
| | |
| | |
| | |

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# 3. WORKS INFORMATION FOR THE REFURBISHMENT OF DUVHA UNIT 1-6 FUEL OIL VALVES

## 3.1 DESCRIPTION OF THE WORKS

The scope of work includes marking, removing, collection, cleaning, inspection, refurbishment, testing, delivery to site and installation of the fuel oil valves for unit 1 to 6 during Outages at Duvha Power Station for a period of five years.

Pre-outage activities include the following:

1. Contractor must submit QCP's for approval.
2. An RP (Responsible Person) who is authorised in terms of Eskom Plant Safety Regulation for Fuel Oil Plant will take the Permit to Work and the Contractor must get a copy of this Permit to Work in order to start with the works.
3. Contractor must mark/number each valve as per AKZ code and remove valves from plant.
4. Contractor must Transport valves to contractor's works.
5. Valves must be stripped, inspected and refurbished as per inspection scope findings.

6. REFURBISHMENT OF VALVES:

a) Contractor must Transport valves to contractor's works.

b) Valves must be cleaned, stripped, inspected and refurbished as per inspection scope findings.

c) Ensure compliance to Eskom standard 240-84979413: Maintenance and Repair of High Temperature and High Pressure Valves and Fittings Standard.

d) NDT valve bodies and seats for cracks

e) Ensure compliance to Eskom standard 240-83539994: Standard for Non-Destructive Testing (NDT) on Eskom Plant

f) Contact Duvha QC Personnel and the Engineer once all the valves are stripped for inspection

g) Issue inspection and repair recommendation report for approval to Duvha QC and Engineering

h) Repair damage parts on valve if repairable or replace with new OEM spare if not repairable

i) If welding is required, ensure compliance to Eskom standard 240-106628253: Standard for Welding Requirements on Eskom Plant

j) Lap and blue seats

k) Replace gland packing (Chesterton)

l) Do a leak test to prove sealing

m) Leak test to be witnessed by Duvha QC Personnel or the Engineer

7. REFURBISHMENT OF PRESSURE RELIEF AND SAFETY VALVES:

a) Clean, strip and inspect valves

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b) NDT valve bodies and seats for cracks. Ensure compliance to Eskom standard 240-83539994: Standard for Non-Destructive Testing (NDT) on Eskom Plant

c) Ensure compliance to Eskom standard 240-69258336: Pressure Relieving Safety Devices Standard.

d) Once all inspections and measurements are complete, submit detailed reports of defects identified on all valves to client

e) All damaged parts to be replaced with new spare parts. Ensure all replacement spare parts are original OEM spare parts

f) If welding is required, ensure compliance to Eskom standard 240-106628253: Standard for Welding Requirements on Eskom Plant

g) Lap or replace valve seats

h) Replace valve gaskets

i) Replace valve O-rings

j) Replace valve sealing washers

k) Assemble valve

l) Pressure test valves

m) Set valve opening set point value to 52 bar /5.2 MPa or as specified on valve body

n) Generate lifting pressure and flow graphs for each valve.

o) Lock valve set screw

p) Sign off QCP's and pressure test certificates

8. Transport valves to Duvha Power Station.

9. Install valves back on plant, ensure correct flow direction

10. Install new gaskets (KLINGER top graph-2000 steel wire) between flanges of valves and pipework

11. Contractor must supply their own packing (Chesterton) and gaskets (KLINGER top graph-2000 steel wire)

12. Inform the RP to clear PTW upon completion of the works

13. Submit detailed data book to Outage controller and Engineer

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### 3.1.1 Fuel oil valves descriptions

| UNIT | AKZX No | DESCRIPTION | PLANT LOCATION | NB | NP | Overall Length | Connection | Number of flange holes | Material | Manufacture | Type | Drive Type | Calculated | | Pipework | | Supplier |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | °C | bar | Size | Material | |
| 6 | XX=04,05,06 | **BOOSTER PUMP AREA** | NORTH FUEL OIL PLANT | | | | | | | | | | | | | | |
| 6 | XXNL00S405 | SUCTION FILTER A DRAIN ISOLATING VALVE | " | 25 | | 155 | | 4 | | | | | | | 1" | | |
| 6 | XXNL00S406 | SUCTION FILTER B DRAIN ISOLATING VALVE | " | 25 | | 80 | Bolted | | | | | | | | 1" | | |
| 6 | XXNL00S301 | SUCTION FILTER A DRAIN ISOLATING VALVE | " | 25 | | 80 | Bolted | | | | | | | | 1" | | |
| 6 | XXNL00S411 | SUCTION FILTER B DRAIN ISOLATING VALVE | " | 25 | | 60 | Bolted | | | | | | | | 1" | | |
| 6 | XXNL00S401 | SUCTION FILTER EQUALIZING VALVE | " | 25 | | 80 | Bolted | | | | | | | | 1" | | |
| 6 | XXNL00S402 | SUCTION FILTER A OVERFLOW ISOLATING VALVE | " | 25 | | 80 | Bolted | | | | | | | | 1" | | |
| 6 | XXNL00S403 | SUCTION OVERFLOW VENT SOLATING VALVE | " | 25 | | 80 | Bolted | | | | | | | | 1" | | |
| 6 | XXNL00S404 | SUCTION FILTER B OVERFLOW ISOLATING VALVE | " | 25 | | 160 | Flange | 4 | | | | | | | 1" | | |
| 6 | XXPE90S101 | SUCTION FILTER B OVERFLOW ISOLATING VALVE | " | 125 | 40 | 345 | Flange | 8 | 10619 | Sempell | Globe 100ND40 | Hand operated | 100 | 64 | 5" | St. 35.8I | Sempell |
| 6 | XXNL71S103 | SUCTION FILTER B OVERFLOW ISOLATING VALVE | " | 100 | 40 | 345 | Flange | 8 | 10619 | Sempell | Globe 100ND40 | Hand operated | 100 | 64 | 4" | St. 35.8I | Sempell |
| 6 | XXNL71S101 | SUCTION FILTER B OVERFLOW ISOLATING VALVE | " | 125 | 40 | 345 | Flange | 8 | 10619 | Sempell | Globe 100ND40 | Hand operated | 100 | 64 | 5" | St. 35.8I | Sempell |
| 6 | XXNL72S103 | SUCTION FILTER B OVERFLOW ISOLATING VALVE | " | 100 | 40 | 345 | Flange | 8 | 10619 | Sempell | Globe 100ND40 | Hand operated | 100 | 64 | 4" | St. 35.8I | Sempell |
| 6 | XXNL72S101 | SUCTION FILTER B OVERFLOW ISOLATING VALVE | " | 100 | 40 | 345 | Flange | 8 | 10619 | Sempell | Globe 100ND40 | Hand operated | 100 | 64 | 4" | St. 35.8I | Sempell |
| 6 | XXPE95S110 | SUCTION FILTER B OVERFLOW ISOLATING VALVE | " | 100 | 40 | 345 | Flange | 8 | 10619 | Sempell | Globe 100ND40 | Hand operated | 100 | 64 | 4" | St. 35.8I | Sempell |
| 6 | XXPE95S111 | SUCTION FILTER B OVERFLOW ISOLATING VALVE | " | 100 | 40 | 345 | Flange | 8 | 10619 | Sempell | Globe 100ND40 | Hand operated | 100 | 64 | 4" | St. 35.8I | Sempell |
| 6 | XXPE95S101 | SUCTION FILTER B OVERFLOW ISOLATING VALVE | " | 100 | 40 | 360 | Flange | 8 | 10619 | Sempell | Relief valve | Spring operated | 100 | 64 | 4" | St. 35.8I | Sempell |
| 6 | XXNL71S102 | SUCTION FILTER B OVERFLOW ISOLATING VALVE | " | 100 | 64 | 345 | Flange | 8 | 1.7357 | Sempell | | Self operated | 100 | 64 | 4" | St. 35.8I | Sempell |
| 6 | XXNL72S102 | SUCTION FILTER B OVERFLOW ISOLATING VALVE | " | 100 | 64 | 345 | Flange | 8 | 1.7357 | Sempell | | Self operated | 100 | 64 | 4" | St. 35.8I | Sempell |
| 6 | XXNL12S101 | SUCTION FILTER B OVERFLOW ISOLATING VALVE | " | 100 | 40 | 345 | Flange | 8 | 10619 | Sempell | Globe 100ND40 | Hand operated | 100 | 64 | 4" | St. 35.8I | Sempell |

| AKZX No | DESCRIPTION | PLANT LOCATION | NB | NP | Overall Length | Connection | Number of flange holes | Material | Manufacture | Type | Drive Type | Calculated | | Pipework | | Supplier |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | |
| | **HEATER AREA** | " | | | | | | | | | | | | | | |
| XXNL73S114 | FUEL OIL HEATER A DRAIN ISOL V/V | " | 25 | 40 | 155 | Flange | 4 | 10619 | Sempell | Globe 25ND40 | Hand operated | 100 | 64 | 1" | St.35.8I | Sempell |
| XXNL74S114 | FUEL OIL HEATER B DRAIN ISOL V/V | " | 25 | 40 | 155 | Flange | 4 | 10619 | Sempell | Globe 25ND40 | Hand operated | 100 | 64 | 1" | St.35.8I | Sempell |
| XXNL09S101 | FUEL OIL HEATER BYPASS V/V | " | 100 | 40 | 345 | Flange | 8 | 10619 | Sempell | Globe 100ND40 | Hand operated | 100 | 64 | 4" | St.35.8I | Sempell |
| XXNL73S111 | FUEL OIL HEATER A INLET ISOL V/V | " | 100 | 40 | 345 | Flange | 8 | 10619 | Sempell | Globe 100ND40 | Hand operated | 100 | 64 | 4" | St.35.8I | Sempell |
| XXNL74S111 | FUEL OIL HEATER B INLET ISOL V/V | " | 100 | 40 | 345 | Flange | 8 | 10619 | Sempell | Globe 100ND40 | Hand operated | 100 | 64 | 4" | St.35.8I | Sempell |
| XXNL73S113 | FUEL OIL HEATER A OUTLET ISOL V/V | " | 100 | 40 | 345 | Flange | 8 | 10619 | Sempell | Globe 100ND40 | Hand operated | 100 | 64 | 4" | St.35.8I | Sempell |
| XXNL74S113 | FUEL OIL HEATER B OUTLET ISOL V/V | " | 100 | 40 | 345 | Flange | 8 | 10619 | Sempell | Globe 100ND40 | Hand operated | 100 | 64 | 4" | St.35.8I | Sempell |
| XXNL73S115 | FUEL OIL HEATER A PRESS RELIEF V/V | " | 25 | 40 | 430 | Flange | 8 | 10619 | Sempell | | Spring operated | 100 | 64 | | St.35.8I | Sempell |
| | FUEL OIL HEATER A PRESS RELIEF V/V ISOL V/V | " | 50 | 40 | 230 | Flange | 4 | | | Ball valve | Hand operated | 100 | 64 | | St.35.8I | Sempell |
| XXNL74S115 | FUEL OIL HEATER B PRESS RELIEF V/V | " | 25 | 40 | 430 | Flange | 4 | 10619 | Sempell | | Hand operated | 100 | 64 | | St.35.8I | Sempell |
| | FUEL OIL HEATER A PRESS RELIEF V/V ISOL V/V | " | 50 | 40 | 230 | Flange | 4 | | | | Hand operated | 100 | 64 | | St.35.8I | Sempell |
| XXNL73S112 | FUEL OIL HEATER A OUTLET ISOL NRV | " | 100 | 40 | 345 | Flange | 8 | | Gestra | | Hand operated | 100 | 64 | | St.35.8I | Sempell |
| XXNL74S112 | FUEL OIL HEATER B OUTLET ISOL NRV | " | 100 | 40 | 345 | Flange | 8 | | Gestra | | Hand operated | 100 | 64 | | St.35.8I | Sempell |
| XXNL11S101 | FUEL OIL TRANSFER ISOL AFTER HEATERS | " | 100 | 40 | 345 | Flange | 8 | 10619 | Sempell | | Hand operated | 100 | 64 | | St.35.8I | Sempell |
| | | | | | | | | | | | | | | | | |
| | **MAIN PUMPS AREA** | " | | | | | | | | | | | | | | |
| XXPE66S102 | FUEL OIL P/P A SUCTION DRAIN ISOL V/V | " | 25 | | 155 | | 4 | | Sempell | | | 100 | 64 | 1" | | Sempell |
| XXPE66S101 | FUEL OIL P/P B SUCTION DRAIN ISOL V/V | " | 25 | | 155 | | 4 | | Sempell | | | 100 | 64 | 1" | | Sempell |
| XXNL02S101 | FUEL OIL PUMP A SUCTION V/V | " | 125 | 40 | 400 | Flange | 8 | C22 N | Sempell | Globe 125ND40 | Hand operated | 100 | 64 | 5" | St.35.8I | Sempell |
| XXNL01S102 | FUEL OIL PUMP B SUCTION V/V | " | 125 | 40 | 400 | Flange | 8 | C22 N | Sempell | Globe 125ND40 | Hand operated | 100 | 64 | 5" | St.35.8I | Sempell |
| XXNL02S103 | FUEL OIL PUMP A DISCHARGE V/V | " | 100 | 40 | 430 | Flange | 8 | C22 N | Sempell | Globe 100ND40 | Hand operated | 100 | 64 | 4" | St.35.8I | Sempell |
| XXNL01S103 | FUEL OIL PUMP B DISCHARGE V/V | " | 100 | 40 | 430 | Flange | 8 | C22 N | Sempell | Globe 100ND40 | Hand operated | 100 | 64 | 4" | St.35.8I | Sempell |
| XXNL02S102 | FUEL OIL PUMP A NRV | " | 100 | 64 | 155 | Between | 8 | 17 357 | Gestra | Rk4 | Self operated | 100 | 64 | 4" | St.35.8I | Sempell |
| XXNL01S103 | FUEL OIL PUMP B NRV | " | 100 | 64 | 155 | Between | 8 | 17 357 | Gestra | Rk5 | Self operated | 100 | 64 | 4" | St.35.8I | Sempell |
| XXNL02S104 | FUEL OIL PUMP A PRESSURE REL V/V | " | 50 | 64 | 300 | Flange | 4 | St | Allweiler | DV44 | Hand operated | 100 | 64 | 2" | St.35.8I | Sempell |
| XXNL01S104 | FUEL OIL PUMP B PRESSURE REL V/V | " | 50 | 64 | 300 | Flange | 4 | St | Allweiler | DV44 | Hand operated | 100 | 64 | 2" | St.35.8I | Sempell |
| XXNL01S105 | FUEL OIL PUMP A PRESSURE REL V/V ISOL V/V | " | 50 | 64 | 230 | Flange | 4 | C22 N | Sempell | Globe | Hand operated | 100 | 64 | 2" | St.35.8I | Sempell |
| XXNL02S105 | FUEL OIL PUMP B PRESSURE REL V/V ISOL V/V | " | 50 | 64 | 230 | Flange | 4 | C22 N | Sempell | Globe | Hand operated | 100 | 64 | 2" | St.35.8I | Sempell |
| XXNL03S101 | FUEL OIL FILTER A ISOL V/V 1 | " | 80 | 64 | 380 | Flange | 8 | C22 N | Sempell | Globe 80ND64 | Hand operated | 100 | 64 | 3" | St.35.8I | Sempell |
| XXNL03S102 | FUEL OIL FILTER B ISOL V/V 2 | " | 80 | 64 | 380 | Flange | 8 | C22 N | Sempell | Globe 80ND64 | Hand operated | 100 | 64 | 3" | St.35.8I | Sempell |
| XXNL03S103 | FUEL OIL FILTER A BYPASS V/V | " | 80 | 64 | 380 | Flange | 8 | C22 N | Sempell | Globe 80ND64 | Hand operated | 100 | 64 | 3" | St.35.8I | Sempell |
| XXNL05S104 | FUEL OIL SUPPLY FILTER PRESS REL V/V | " | 25 | 64 | 420 from bottom flange to top | Flange | 4 | | Sempell | Relief valve | Self operated | 100 | 64 | 1/2" | St.35.8I | Sempell |
| XXNL05S105 | FUEL OIL ISOL V/V AFTER FILTER A | " | 80 | 64 | 380 | Flange | 8 | C22 N | Sempell | Globe 80ND64 | Hand operated | 100 | 64 | 3" | St.35.8I | Sempell |
| XXNL05S103 | FUEL OIL RETURN ISOL V/V | " | 80 | 64 | 380 | Flange | 8 | C22 N | Sempell | Globe 80ND64 | Hand operated | 100 | 64 | 3" | St.35.8I | Sempell |
| XXNL05S104 | FUEL OIL RETURN FILTER ISOL V/V 1 | " | 80 | 64 | 380 | Flange | 8 | C22 N | Sempell | Globe 80ND64 | Hand operated | 100 | 64 | 3" | St.35.8I | Sempell |
| XXNL05S105 | FUEL OIL RETURN FILTER ISOL V/V 2 | " | 80 | 64 | 380 | Flange | 8 | C22 N | Sempell | Globe 80ND64 | Hand operated | 100 | 64 | 3" | St.35.8I | Sempell |
| XXNL05S106 | FUEL OIL RETURN FILTER BYPASS V/V | " | 80 | 64 | 380 | Flange | 8 | C22 N | Sempell | Globe 80ND64 | Hand operated | 100 | 64 | 3" | St.35.8I | Sempell |
| XXNL05S107 | FUEL OIL RETURN FILTER PRESSURE REL V/V | " | 25 | 64 | 420 from bottom flange to top | Flange | 4 | | Sempell | Relief valve | Self operated | 100 | | 1" | St.35.8I | Sempell |
| XXNL04S102 | FUEL OIL OUTLET PRESSURE CONTROL FILTER ISOL V/V | " | 80 | 64 | 380 | Flange | 8 | C22 N | Sempell | Globe 80ND64 | Hand operated | 100 | 64 | 3" | St.35.8I | Sempell |
| XXNL04S001 | FUEL OIL OUTLET PRESSURE CONTROL V/V (Askania) | " | 80 | 64 | 380 | Flange | 8 | C22 N | Askania | 19117-19119 | Lever operated | 100 | 64 | 3" | St.35.8I | |
| XXNL04S101 | FUEL OIL OUTLET PRESSURE CONTROL ISOL V/V | " | 80 | 64 | 380 | Flange | 8 | C22 N | Sempell | Globe 80ND64 | Hand operated | 100 | 64 | 3" | St.35.8I | Sempell |
| XXNL04S108 | FUEL OIL OUTLET PRESSURE CONTROL V/V BYPASS V/V | " | 80 | 64 | 380 | Flange | 8 | C22 N | Sempell | Globe 80ND64 | Hand operated | 100 | 64 | 3" | St.35.8I | Sempell |
| XXNL04S104 | FUEL OIL RETURN PRESSURE RELIEF V/V ISOL V/V 1 | " | 50 | 64 | 380 | Flange | 8 | C22 N | Sempell | Globe 80ND64 | Hand operated | 100 | 64 | 3" | St.35.8I | Sempell |
| XXNL04S106 | FUEL OIL RETURN PRESSURE RELIEF V/V (DV44) | " | 50 | 64 | 300 | Flange | 4 | St | Allweiler | DV44 | Hand operated | 100 | 64 | 2" | St.35.8I | Allweiler |
| XXNL04S105 | FUEL OIL RETURN PRESSURE RELIEF V/V (DV44) | " | 50 | 64 | 300 | Flange | 4 | St | Allweiler | DV44 | Hand operated | 100 | 64 | 2" | St.35.8I | Allweiler |
| XXNL04S107 | FUEL OIL RETURN PRESSURE RELIEF V/V ISOL V/V 2 | " | 80 | 64 | 380 | Flange | 8 | C22 N | Sempell | Globe 80ND64 | Hand operated | 100 | 64 | 3" | St.35.8I | Sempell |
| XXNL04S115 | FUEL OIL RETURN COOLER BYPASS V/V | " | 80 | 64 | 380 | Flange | 8 | C22 N | Sempell | Globe 80ND64 | Hand operated | 100 | 64 | 3" | St.35.8I | Sempell |
| XXNL04S110 | FUEL OIL RETURN COOLER ISOL V/V 1 | " | 80 | 64 | 380 | Flange | 8 | C22 N | Sempell | Globe 80ND64 | Hand operated | 100 | 64 | 3" | St.35.8I | Sempell |
| XXNL04S111 | FUEL OIL RETURN COOLER ISOL V/V 2 | " | 80 | 64 | 380 | Flange | 8 | C22 N | Sempell | Globe 80ND64 | Hand operated | 100 | 64 | 3" | St.35.8I | Sempell |
| XXNL04S109 | FUEL OIL RETURN COOLER PRESSURE RELIEF V/V | " | 25 | 64 | 400 | Flange | 4 | | Sempell | | Self operated | 100 | 64 | 1" | St.35.8I | |
| XXNL04S114 | FUEL OIL RETURN COOLER NRV | " | 80 | 64 | 345 | Flange | 8 | | Sempell | | Self operated | 100 | 64 | 3" | St.35.8I | |
| XXNL10S101 | FUEL OIL TRANSFER ISOL V/V AFTER MAIN P/P'S (Interconnector) | " | 80 | 64 | 375 | Flange | 8 | C22 N | Sempell | Globe 80ND64 | Hand operated | 100 | 64 | 3" | St.35.8I | Sempell |

| AKZX No | DESCRIPTION | PLANT LOCATION | NB | NP | Overall Length | Connection | Number of flange holes | Material | Manufacture | Type | Drive Type | Calculated | | Pipework | | Supplier |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | |
| | **BOILER SIDE** | | | | | | | | | | | | | | | |
| XXNL08S101 | FUEL OIL TO FRONT WALL TOP BURNERS BYP V/V | 33ML next to burner D2 | 50 | 64 | 230 | Flange | 4 | C22 N | Persta | 200 BE21.1 | Hand operated | 100 | 64 | 1" | St.35.8I | Babcock |
| XXNL08S102 | FUEL OIL TO FRONT WALL TOP BURNERS BYP V/V 2 | 33ML next to burner D4 | 50 | 64 | 230 | Flange | 4 | C22 N | Persta | 200 BE21.1 | Hand operated | 100 | 64 | 1" | St.35.8I | Babcock |
| XXNL07S101 | FUEL OIL TO FRONT WALL MIDDLE BURNERS BYP V/V 1 | 26 ML next to burner F2 | 50 | 64 | 230 | Flange | 4 | C22 N | Persta | 200 BE21.1 | Hand operated | 100 | 64 | 1" | St.35.8I | Babcock |
| XXNL07S102 | FUEL OIL TO REAR WALL MIDDLE BURNERS BYP V/V 2 | 26 ML next to burner F4 | 50 | 64 | 230 | Flange | 4 | C22 N | Persta | 200 BE21.1 | Hand operated | 100 | 64 | 1" | St.35.8I | Babcock |
| XXNL03S110 | FUEL OIL SUP RTN RECIRC V/V | 26 ML between gun blower no. 13 and 11 | 40 | 64 | 260 | Flange | 4 | C22 N | Persta | 200 BE21.1 | Hand operated | 100 | 64 | 1/2" | St.35.8I | Babcock |
| XXNL06S101 | FUEL OIL TO FRONT WALL BOTTOM BURNERS BYP V/V 1 | 18ML next to burner E2 | 50 | 64 | 230 | Flange | 4 | C22 N | Persta | 200 BE21.1 | Hand operated | 100 | 64 | 1" | St.35.8I | Babcock |
| XXNL06S102 | FUEL OIL TO REAR WALL BOTTOM BURNERS BYP V/V 2 | 18ML next to burner E4 | 50 | 64 | 230 | Flange | 4 | C22 N | Persta | 200 BE21.1 | Hand operated | 100 | 64 | 1" | St.35.8I | Babcock |
| XXNL03S502 | FUEL OIL SUPPLY FLOW METER ISOL V/V 2 | 16ML Left hand side of boiler | 80 | 64 | 280 | Flange | 8 | WCB | Crane | Wedge gate | Hand operated | 100 | 64 | 3" | St.35.8I | |
| XXNL03S503 | FUEL OIL SUPPLY FLOW METER BYP V/V | 16ML Left hand side of boiler | 80 | 64 | 280 | Flange | 8 | WCB | Crane | Wedge gate | Hand operated | 100 | 64 | 3" | St.35.8I | |
| XXNL03S501 | FUEL OIL SUPPLY FLOW METER ISOL V/V 1 | 16ML Left hand side of boiler | 80 | 64 | 280 | Flange | 8 | WCB | Crane | Wedge gate | Hand operated | 100 | 64 | 3" | St.35.8I | |
| XXNL05S501 | FUEL OIL RTN FLOW METER ISOL V/V 1 | 16ML Left hand side of boiler | 80 | 64 | 280 | Flange | 8 | WCB | Crane | Wedge gate | Hand operated | 100 | 64 | 3" | St.35.8I | |
| XXNL05S503 | FUEL OIL RTN FLOW METER BYPASS V/V | 16ML Left hand side of boiler | 80 | 64 | 280 | Flange | 8 | WCB | Crane | Wedge gate | Hand operated | 100 | 64 | 3" | St.35.8I | |
| XXNL05S502 | FUEL OIL RTN FLOW METER ISOL V/V 2 | 16ML Left hand side of boiler | 80 | 64 | 280 | Flange | 8 | WCB | Crane | Wedge gate | Hand operated | 100 | 64 | 3" | St.35.8I | |

| AKZX No | DESCRIPTION | PLANT LOCATION | NB | NP | Overall Length | Connection | Number of flange holes | Material | Manufacture | Type | Drive Type | Calculated | | Pipework | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | °C | Bar | Size | Material |
| XX=01,02 | SOUTH PUMP HOUSE | SOUTH FUEL OIL PLANT | | | | | | | | | | | | | |
| 00PE10S103/ 00PE10S104 /00PE10S105/00PE10S102 | SUCTION FILTERS ISOLATING VALVE (INLET AND OUTLET) | " | 250 | PN6 | 240 | Flange | 12 | | VAG JKO | | | 80 | 40 | 10" | St.35.8I |
| 00PE10S411/S412 | SUCTION FILTER VENTS ISOLATING VALVE | " | 15 | | 100 | Bolted (BSPP) | N/A | A105 | | 213SGS Class 900LBS | | 80 | 64 | | St.35.8I |
| 00PE10S4113/S414 | SUCTION FILTERS DRAIN VALVES | " | 25 | 40 | 100 | Bolted | N/A | | | | | | | 1" | St.35.8I |
| XXNL01S101, XXNL02S101 | HP PUMPS SUCTION ISOLATING VALVE | " | 125 | 64 | 400 | Bolted | 8 | C22 N | Babcock | 200 AE 11.1 | | | 40 | 5" | St.35.8I |
| XXNL01S001, XXNL02S001 | HP PUMPS RELIEF VALVES (DV44) | " | 50 | 64 | 300 | Flange | 4 | St | Allweiller | DV44 | Hand operated | 100 | 64 | 2" | St.35.8I |
| XXNL01S102, XXNL02S102 | HP PUMPS RELIEF VALVES ISOL VALVES | " | 50 | 64 | 300 | Flange | 4 | C22 N | Persta | 200 AE | Hand operated | 100 | 64 | 2" | St.35.8I |
| XXNL01S104, XXNL02S104 | HP PUMPS DISCHARGE NRVS | " | 100 | 64 | 145 | Flange | 8 | 1.7357 | Gestra | Rk 4 | Hand operated | 100 | 64 | 4" | St.35.8I |
| XXNL01S105, XXNL02S105 | HP PUMPS DISCHARGE ISOLATING VALVES | " | 100 | 64 | 430 | Flange | 8 | C22 N | Persta | 200 AE | Hand operated | 100 | 64 | 4" | St.35.8I |
| XXNL09S101 | HP PUMPS FUEL OIL INTERCONNECTORS ISOL VALVE | " | 100 | 64 | 345 | Flange | 8 | C22 N | Persta | 200 AE | Hand operated | 100 | 64 | 4" | St.35.8I |
| XXNL03S105 | FUEL OIL FILTERS INLET ISOL VALVE | " | 80 | 64 | 380 | Flange | 8 | C22 N | Persta | 200 AE | Hand operated | 100 | 64 | 3" | St.35.8I |
| XXNL03S402 | FUEL OIL FILTERS OUTLET ISOL VALVE | " | 80 | 64 | 380 | Between | 8 | C22 N | Persta | 200 AE | Self operated | 100 | 64 | 3" | St.35.8I |
| XXNL04S101 | FUEL OIL FLOW METER BYPASS VALVE (flow meter removed) | " | 80 | 64 | 380 | Between | 8 | C22 N | Persta | 200 AE | Self operated | 100 | 64 | 3" | St.35.8I |
| XXNL03S501 | UNITS FUEL OIL SUPPLY MAIN ISOL VALVE | " | 80 | 64 | 380 | Flange | 8 | C22 N | Persta | DV44 | Hand operated | 100 | 64 | 3" | St.35.8I |
| XXNL04S105 | UNITS OUTLET PRESSURE CONTROL VALVE BYPASS VALVE | " | 80 | 64 | 380 | Flange | 8 | C22 N | Persta | DV44 | Hand operated | 100 | 64 | 3" | St.35.8I |
| XXNL04S103, XXNL04S104 | UNITS OUTLET PRESSURE CONTROL VALVE ISOL VALVE (Inlet and Outlet) | " | 80 | 64 | 380 | Flange | 8 | C22 N | Persta | Globe | Hand operated | 100 | 64 | 3" | St.35.8I |
| XXNL04S001 | UNITS OUTLET PRESSURE CONTROL VALVES | " | 80 | 64 | 380 | Flange | 8 | C22 N | Askania | Globe | Hydraulic | 100 | 64 | 3" | St.35.8I |
| XXNL04S106, XXNL04S107 | UNITS FUEL OIL RETURN PRESSURE RELIEF VALVES ISOL VALVES | | 80 | 64 | 380 | Flange | 8 | C22 N | Babcock | Babcock | Hand operated | 100 | 64 | 3" | |
| XXNL04S002, XXNL04S003 | UNITS FUEL OIL RETURN PRESSURE RELIEF VALVES (DV44) | " | 80 | 64 | 300 | Flange | 4 | St | Allweiller | DV44 | Hand operated | 100 | 64 | 2" | St.35.8I |
| XXNL05S107 | (Flow meter removed) | " | 80 | 64 | 380 | Flange | 8 | C22 N | Sempell | Globe 80ND64 | Hand operated | 100 | 64 | 3" | St.35.8I |
| XXNL05S501 | UNITS FUEL OIL RETURN MAIN ISOL VALVES | " | 80 | 64 | 380 | Flange | 8 | C22 N | Sempell | Globe 80ND64 | Hand operated | 100 | 64 | 3" | St.35.8I |

| AKZX No | DESCRIPTION | PLANT LOCATION | NB | NP | Overall Length | Connection | Number of flange holes | Material | Manufacture | Type | Drive Type | Calculated | | Pipework | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | °C | Bar | Size | Material |
| XX=01,02 | **SOUTH PUMP HOUSE** | **SOUTH FUEL OIL PLANT** | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | **BOILER SIDE** | | | | | | | | | | | | | | |
| XXNL05S001 | FUEL OIL RETURN PRESSURE SUSTAINING VALVES | 16ML Left hand side of the boiler | 50 | 64 | | | | | | | | | | | St.35.8I |
| XXNL05S002 | FUEL OIL RETURN PRESSURE RELIEF VALVES | 16ML Left hand side of the boiler | 50 | 64 | | | | | | | | | | | St.35.8I |
| XXNL08S101 | FUEL OIL TO FRONT WALL TOP BURNERS BYP V/V | 33ML next to burner D2 | 50 | 64 | 230 | Flange | 4 | C22 N | Persta | 200 BE21.1 | Hand operated | 100 | 64 | 1" | St.35.8I |
| XXNL08S102 | FUEL OIL TO FRONT WALL TOP BURNERS BYP V/V 2 | 33ML next to burner D4 | 50 | 64 | 230 | Flange | 4 | C22 N | Persta | 200 BE21.1 | Hand operated | 100 | 64 | 1" | St.35.8I |
| XXNL07S101 | FUEL OIL TO FRONT WALL MIDDLE BURNERS BYP V/V 1 | 26 ML next to burner F2 | 50 | 64 | 230 | Flange | 4 | C22 N | Persta | 200 BE21.1 | Hand operated | 100 | 64 | 1" | St.35.8I |
| XXNL07S102 | FUEL OIL TO REAR WALL MIDDLE BURNERS BYP V/V 2 | 26 ML next to burner F4 | 50 | 64 | 230 | Flange | 4 | C22 N | Persta | 200 BE21.1 | Hand operated | 100 | 64 | 1" | St.35.8I |
| XXNL03S110 | FUEL OIL SUP RTN RECIRC V/V | 26 ML between gun blower no. 13 and 11 | 40 | 64 | 260 | Flange | 4 | C22 N | Persta | 200 BE21.1 | Hand operated | 100 | 64 | 1/2" | St.35.8I |
| XXNL06S101 | FUEL OIL TO FRONT WALL BOTTOM BURNERS BYP V/V 1 | 18ML next to burner E2 | 50 | 64 | 230 | Flange | 4 | C22 N | Persta | 200 BE21.1 | Hand operated | 100 | 64 | 1" | St.35.8I |
| XXNL06S102 | FUEL OIL TO REAR WALL BOTTOM BURNERS BYP V/V 2 | 18ML next to burner E4 | 50 | 64 | 230 | Flange | 4 | C22 N | Persta | 200 BE21.1 | Hand operated | 100 | 64 | 1" | St.35.8I |
| XXNL03S502 | FUEL OIL SUPPLY FLOW METER ISOL V/V 2 | 16ML Left hand side of boiler | 80 | 64 | 280 | Flange | 8 | WCB | Crane | Wedge gate | Hand operated | 100 | 64 | 3" | St.35.8I |
| XXNL03S503 | FUEL OIL SUPPLY FLOW METER BYP V/V | 16ML Left hand side of boiler | 80 | 64 | 280 | Flange | 8 | WCB | Crane | Wedge gate | Hand operated | 100 | 64 | 3" | St.35.8I |
| XXNL03S501 | FUEL OIL SUPPLY FLOW METER ISOL V/V 1 | 16ML Left hand side of boiler | 80 | 64 | 280 | Flange | 8 | WCB | Crane | Wedge gate | Hand operated | 100 | 64 | 3" | St.35.8I |
| XXNL05S501 | FUEL OIL RTN FLOW METER ISOL V/V 1 | 16ML Left hand side of boiler | 80 | 64 | 280 | Flange | 8 | WCB | Crane | Wedge gate | Hand operated | 100 | 64 | 3" | St.35.8I |
| XXNL05S503 | FUEL OIL RTN FLOW METER BYPASS V/V | 16ML Left hand side of boiler | 80 | 64 | 280 | Flange | 8 | WCB | Crane | Wedge gate | Hand operated | 100 | 64 | 3" | St.35.8I |
| XXNL05S502 | FUEL OIL RTN FLOW METER ISOL V/V 2 | 16ML Left hand side of boiler | 80 | 64 | 280 | Flange | 8 | WCB | Crane | Wedge gate | Hand operated | 100 | 64 | 3" | St.35.8I |
| | | | | | | | | | | | | | | | |

## 4. QUALITY ASSURANCE

The Contractor is responsible for the control of manufacture in accordance with the applicable sections of Eskom Specification 39:60 Contract quality requirements. This includes but is not limited to:

- The implementation of quality management compliant with QM 58
- Submission of Inspection and Test Plans to Eskom and their appointed inspection authorities for review and approval prior to the commencement of any work.
- Giving appropriate advanced notification of inspection and test to the relevant inspection authorities
- Submission of quality records dossier to Eskom upon completion of the refurbishment work

In addition to the requirements of the Eskom Specification, the Contractor shall ensure that concession requests and where required, rework procedures that impact on drawings and design specifications are submitted to Eskom for approval.

Representatives of Eskom will visit the Contractor's works in accordance with the Quality Plan milestones; sign off hold points and to witness important tests.

## 5. DOCUMENTATION AND INFORMATION REQUIRED

Below is the list of all documents required:

- Material test certificates
- Refurbishment programme
- Quality plan

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## 6. AUTHORISATION

This document has been seen and accepted by:

| Name & Surname | Designation |
|---|---|
| Edzie Mohlala | Senior Advisor Boiler Maintenance  Technical Support Services |
| Peter Simelane | Oil burners Maintenance Supervisor |
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| | |

## 7. REVISIONS

| Date | Rev. | Compiler | Remarks |
|---|---|---|---|
| March 2026 | 1 | T Ziqubu | 1st draft |
| | | | |

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