

	Procurement SOW	Technology
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Title:	Burner Refurbishment at Majuba Power Station 5-year contract PR -	Revision:	0
		Total Pages:	
		Disclosure Classification:	CONTROLLED DISCLOSURE

Compiled by Outage Management	Reviewed by Boiler Engineering	Reviewed by Maintenance Management
Signature	Signature	Signature
Name and Surname Senior Advisor Outage Designation	Name and Surname Boiler Senior Engineer Designation	Name and Surname Boiler Maintenance Manager Designation
Date:	Date:	Date:
Supported by Outage Management	Reviewed by Quality	Accepted by Procurement
Signature	Signature	Signature
Name and Surname Outage Group Manager Designation	Name and Surname Senior Quality Advisor Designation	Name and Surname Procurement Manager Designation
Date:	Date:	Date:

Part 3: Scope of Work

Document reference	Title
	This cover page
C3.1	<i>Employer's</i> Service Information
C3.2	<i>Contractor's</i> Service Information

C3.1: Employer's service Information

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1 Description of the service

1.1 Executive overview

The service is the provision of Burner Refurbishment and PF Bends at Majuba Power Station

1.1.1 Employer's requirements for the service

The service is for the refurbishment of burners and PF bends and related plant at Majuba Power Station

1.2 The High Level Activities

- Remove 30 burners PF tubes and repair/replace PF tube and repair remaining components as per wall thickness report.
- Remove 30 core air tubes, core ducting and dampers. Wall thickness to be carried out. Repairs will be done according to Wall thickness report.
- Remove and repair 30 carrier tubes.
- Repair 30 PF tubes tiles
- Repair/replace all 30 T-pieces as per wall thickness report.
- Replace 14 orifices.
- Replace of 30 ceramic tiled bends.
- 30 Lines to be inspected in accordance to the 30 bends that are replaced.
- Packing of stuffing boxes and gaskets
- All secondary air dampers to be repaired, stroked and verified through secondary air manhole
- Removal, repairs and verification on 30 bypass dampers
- Replacement of 30 PF isolating gates. Removed PF isolating gates to be refurbished.

1.3 Materials

- All material stated in this contract will be provided by Eskom
- The *Contractor* will cut and prepare the material according to the size needed.

1.4 Detailed Scope of works

1.4.1 Remove 30 carrier tubes and core air tubes

1.4.2 Remove 30 PF tubes and replace PF tubes according to wall thickness report

Wall thickness tests to be done on the 10 mm PF tube.

Thickness testing must be done on the full length and full circumference of the tube using 100mm x 100mm spacing for testing points

Wall thickness readings must be written with a white marker on the PF tube in each 100 x100mm grid.

Replace worn areas (<5mm), sicro23/20 PF tube, with 10 mm thick rolled plate of suitable material (Stainless steel 310). The cut out and window patch is to be of sufficient size to match thickness of un-worn 10 mm areas (At least 80% of the original thickness). Window patches may not interfere with the movement of the secondary air swirl.

Assess the wear on the inner side (boiler side) of the PF tubes, where the core air tube rests on the stays. Repair any damaged areas. Build-up the welding at the base of the stays or replace worn out stays. This will require stainless steel welding.

The PF tube must be replaced as instructed by the system engineer. The PF tube must be cut off at the locking ring and removed and a new PF tube must be welded in its place.

Upon the installation of the new 10mm PF tube and locking ring: Ensure that the inner diameter of the 10mm PF tube, the locking ring, the mild steel PF tube and the surface of the liners are flush.

1.4.3 Bottom Belly Plate

Wall thickness tests to be done on the bottom half of the 10 mm PF tube mild steel section (Bottom belly plate)

Thickness testing must be done on the full length and full circumference of the tube using 100mm x 100mm spacing for testing points

Wall thickness readings must be written with a white marker on the PF tube mild steel section (Bottom belly plate) in each 100 x100mm grid.

Replace worn areas (<5mm), PF tube mild steel section (Bottom belly plate), with 10 mm thick rolled plate of suitable material (Mild steel) The cut out and window patch is to be of sufficient size to match thickness of un-worn 10 mm areas (At least 80% of the original thickness).

1.4.4 Top Bell Plate

Wall thickness tests to be done on the top half of the 10 mm PF tube mild steel section (Top belly plate) where the tile fell off.

Thickness testing must be done on the full length and full circumference of the tube using 100mm x 100mm spacing for testing points

Replace worn areas (<5mm), PF tube mild steel section (Top belly plate), with 10 mm thick rolled plate of suitable material (Mild steel) The cut out and window patch is to be of sufficient size to match thickness of un-worn 10 mm areas (At least 80% of the original thickness).

1.4.5 Half Moon

Wall thickness tests to be done on the 10mm bottom section adjacent to the 30mm liners(half-moon) of the 10 mm PF tube mild steel

Thickness testing must be done on the full length and full circumference of the half-moon using 100mm x 100mm spacing for testing points

Wall thickness readings must be written with a white marker on the PF tube in each 100 x100mm grid.

Replace worn areas (<5mm) on the Half-moon section, with 10 mm thick rolled plate of suitable material (Mild steel).The cut out and window patch is to be of sufficient size to match thickness of un-worn 10 mm areas (At least 80% of the original thickness).

1.4.6 Burner Face

Wall thickness tests to be done on the 10mm burner face section and the inspection door.

Thickness testing must be done on the full length and full circumference of the burner face using 100mm x 100mm spacing for testing points

Wall thickness readings must be written with a white marker on the burner face in each 100 x100mm grid.

Replace worn areas (<5mm), burner face section, with 10 mm thick rolled plate of suitable material (Mild steel).The cut out and window patch is to be of sufficient size to match thickness of un-worn 10 mm areas (At least 80% of the original thickness).

1.4.7 Tube inlet

Wall thickness tests to be done on the 40mm cast iron tiles at the PF tube inlet.

Thickness testing must be done on the full length and width of the tiles using 100mm x 100mm spacing for testing points

Wall thickness readings must be written with a white marker on the cast iron tiles in each 100 x100mm grid.

Rebuild or replace the damaged sections of the 40mm ceramic tiles. Ensure that there are no gaps between liner (If visible fill gaps with welding or putty). Where wear is visible on the liners build up the surface with putty to ensure the liners are flush.

Replace tiles if 60% of the surface is less than 15mm.

Loosen PF burner flanges and remove old rope gaskets and replace/install if required

1.4.8 Secondary Air Ducting

Conduct wall thickness testing on secondary air ducting on 30 burners that is removed:

Conduct thickness tests from the core air ducting tap off point (In the direction of flow) to the secondary tube as it enters the boiler.

Conduct thickness testing on the 2 secondary air dampers and casing.

Conduct thickness testing on the secondary swirl blades and casing.

A grid of a 100x100mm is to be used and further WT measurements should also be taken in areas where there is high visual wear and the lowest points should be marked (50% of the original thickness).

All areas where thickness is <50% of the materials original thickness to be cut out and replaced with suitable material.

The cut out and patch is to be of sufficient size to match thickness of approximately 80% or more of the original thickness of adjacent material.

1.4.9 Adjustor Rod

Inspect wear on the adjustor rods (including universal links) and replace where there is extensive wear.

Straighten any bend adjustor rods

If wear is minimal use weld to build up at visible wear areas.

Repair or replace wheels and wheel guide rod

Ensure clamping mechanisms on the inside flange are sufficient and are in working order.

Replace where necessary.

Ensure the alignment of this casing is correct, if not the casing is to be re-aligned.

Ensure clamping mechanisms on the inside flange are sufficient and are in working order.

Replace where necessary.

Ensure the alignment of this casing is correct, if not the casing is to be re-aligned.

1.5 On 30 burners:

Inspect damper seats and install 10x10mm square bar if necessary. (Replacement of all damper seats is a high possibility). Ensure two vent holes are open on the damper and close the excess vents.

All secondary air to be stroke checked.

Install a permanent pin on the damper shaft which indicates the damper position. This indicator must be visible from 3m.

Open all damper bush housings and inform the system engineer to assess the bush condition. Bushes which are worn must be replaced or rotated to expose an unworn surface to the shaft surface.

1.5.1 Secondary air Ducts

All secondary air duct gaskets are to be replaced/ installed.

Replace secondary air manhole gasket and packing.

Replace flange gaskets

Repack secondary air damper stuffing boxes with packing flakes.

1.5.2 Aerofoils

Inspect and repair all aerofoils. Replace gaskets.
Cleaning is done with compressed air and vacuum.

Repack swirl setting rod stuffing boxes with packing flakes.

Once the burner is re-assembled, stroke-check the secondary air swirls by moving it to the fully in and fully out positions. Repair if the entire movement cannot be completed. Set all swirls to the 2.5 position or as otherwise communicated by engineer

Inspect secondary air bushes and links.

Ensure all link pins are not bend and worn. Replace if required.

Ensure all links have castle nuts on to keep links in position.

Repack secondary air damper stuffing boxes with packing flakes.

1.5.3 Inspection

PF lines to be inspected and cleared of blockages on PF conveying lines where bends where removed.

Replace 30 bends and inspect PF conveying lines.

Bends are counted in the direction of flow (From the classifier towards the burners)

All bends should be tabled and noted if they are ceramic lined. Ceramic lined bends have a yellow line on the outside of the bend

All bolts and clamps on the PF conveying line should be secured.

Remove bends which have been identified by outage controller and lower to 0m level. If an identified bend has a yellow line, please inform outage controller or engineering before the bend is removed.

Load bends onto truck and send for refurbishment.

Remove the selected 30 bends and replace with refurbished (tiled) bends and replace gaskets.

Ensure that all bends are secured properly

PF leaks are to be noted before the unit is switched off and all repairs on the PF line are to be done during the outage

All orifices are to be replaced with new orifices; gaskets are also to be replaced upon installation.

Orifices to be installed so the gap of the orifices is at the bottom of the PF conveying line.

Orifice location and dimensions:

Burner 14,15,16 bend 4 = 480mm

Burners 21,22,23,24,25,26 bend 4 = 514.5 mm

Burner 31,32,33 bend 2 = 460 mm

Burner 54,55,56 bend 2 = 480 mm

1.5.4 On T-Pieces

30 T-Pieces repairs or replacement. Replacement of t-piece can be determined by the wall thickness report. If 30% of the T-piece is patched replace T-piece. Wall thickness to be done on T-pieces

Thickness testing on the 12mm thick T-pieces. A grid of a 100x100mm is to be used and further WT measurements should also be taken in areas where there is high visual wear and the lowest points should be marked (50% of the original thickness).

All areas where thickness is <50% of the materials original thickness to be cut out and replaced with suitable material (Mild steel)

1.5.5 Compensators

Damaged compensators are to be repaired

Wall thickness must be done to determine size of required patch.

All gaskets on the PF line going to the burner are to be replaced on the bends that are removed. Ensure that the clamps are in the correct position and tightened. Ensure that the tubes are

Plant walk should be done to inspect all the clamps on the PF conveying line and ensure that they are in the correct position and tighten.

1.6 Bypass Dampers

Remove all bypass dampers.

Mark the shaft to correspond with the position of the damper.

Inspect damper seat and repair if necessary. Move damper on the shaft to ensure that the damper seats correctly.

Ensure that the Bypass damper bearings are moving freely. Replace the bearing if necessary. Ensure that a bearing with a grease port is installed

1.7 PF Isolating Gates

Replace/refurbish PF isolating gate assembly and install spindle and gate covers.

Inspect the quick close damper bearings. Ensure free movement of the bearing and replace if necessary.

Repack all stuffing boxes

Inspect the hot- and cold air damper bearings. Ensure free movement of the bearing and replace if necessary.

Repack all stuffing boxes.

30 PF Isolating gates. Replace all 30 PF isolating gates with a new or refurbished gate.

1.7.1

1.7.1 Core Air Ducts:

- Strip cladding on all 30 PF burners' core air ducting including the intermediate ducting piece between the core air damper and secondary air ducting. Refer to the defect list and attend to all core-air duct leaks as indicated on the defect list drawn from SAP.
- Disassemble and remove all core air ducts from the core air dampers and perform wall thickness test with the grid of 80 x 80mm on all inner sides of the duct. Submit report to engineering.
- Note all damages on a drawing and take photos where the damages are deemed to be severe.
- Submit report to Engineering and repair all visible damages.

Seal air pipes on the PF line at the compensators are to be repaired

1.8 Core Air Scope of work

1.8.1 Carrier tubes

- Remove 30 Carrier tubes. Care is to be taken to ensure no damages are incurred on the swirl or support rods during this disassembly process.
- Inspect for damages on all carrier tube and record all findings.
- Inspect condition of core air swirl. Replace or repair swirls as required. The direction of swirls must be verified with drawing supplied by engineer.
- Inspect condition of Oil lance sleeve and ensure the sleeve sits in the middle of the carrier tube.
- Inspect the condition of the refractory and give report to engineering.
- Refurbish the front of the 30 carrier tube.
- Measure length of carrier tube and provide a report to engineering.

1.8.2 Carrier tube supports:

- Inspect the condition of the carrier tube supports.
- Replace all carrier tube supports that are broken, worn or defective by welding them to its holding structure. Ensure supports are of the correct length.
- Straighten the bent ones if they are still in good condition. Ensure supports are of the correct length and material.

1.8.3 Reassembling the carrier tube

- New rope gaskets to be fitted to all flanges on the carrier respective tubes.
- Verify carrier tube swirls are correctly positioned and direction is correct. The swirl is to be tack welded onto the carrier tube.
- Verify carrier tube refractory is still in good condition.
- Check Alignment of the sighting tubes and check the condition of the threads. Note any defects and repair accordingly.
- Ensure the burner configuration matches that of the Burner System & Arrangement drawing.

Note that the carrier tube, oil burner sleeve and igniter sleeve all need to be re-instated to the design lengths. Supports must ensure that the core air carrier tube is located centrally within the core air tube.

1.9 Core Air Ducts:

Re-instate pressure tapping point if removed. Clean the existing tapping points.

Core Air Dampers Removal:

- Remove all defective actuators and repair/refurbish accordingly. Refer to the defect list and attend to all core-air damper defects as indicated on the defect list drawn from SAP.

- Remove all 30 core air dampers
- Inspect damper bushes, clean and replace damaged ones.
- Inspect condition of gland packing, clean and replace as required.

Ensure that the damper plate moves freely and there is no interference including when hot between all close interfaces (e.g. damper plate and core air ducting). Ensure that there is no unwanted play that can result in any unwanted contact between any close interfaces. A 5 mm gap should be sufficient.

Core Air Dampers:

- Inspect 30 core air damper casings for holes.
- Perform wall thickness test on the damper plate as with the grid of 80 x 80mm on the damper plate.
- In Severe cases repair damaged core air damper casing by patching them. Cut out all sections that have a thickness of less than 5mm, otherwise perform temporary repairs and defect components accordingly.
- Inspect condition of damper shaft. Replace shaft if visually worn or any damages are identified.
- Repair damper plate as per instruction request.
- Ensure that the damper plate and ducting adhere to the specified tolerances in Annexure G.
- Marking of the Core Air Damper shaft on both ends of the spindle. The mark must be parallel to the damper plate and the marking must be visible 3m away.

Reassembling the core air duct to the damper:

- Remove old duct and damper flange gaskets and replace with a new one. Ensure rope gasket is installed correctly. Rope gasket is to be zig-zagged around the flange bolts with the rope winding around the outside of the corner bolts to ensure that the damper is not obstructed by loose hanging gaskets during operation.
- Assemble the core air duct to the damper ensuring that the damper does not catch on the ducting walls. An angular tolerance of less than 1° is required.
- Check that the damper can be moved freely after assembling the duct.
- Make sure that all actuators are installed onto the core air dampers correctly. Faulty actuators to be sent away for refurbishment.
- Monitor for leaks and rectify on return to service. Inspect flanges and ducts for leaks and repair if necessary.

Removal of the Core Air Tube (CAT) from the 30 selected burners:

- Ensure that the burner tiles are not damaged during the removal of the core air tube.

Core air tip:

Assess the wear on the tip of the core air tube where the core air tube rests on the stays. Defect all damages found and provide report to Engineering

Core air tube:

- Assess the condition of the core air tube.
- Thickness tests - every 150 mm square (along tube & circumference) in the area where the PF impacts directly on the core air tube. WT measurements should also be taken in areas where there is high visual wear and the lowest points should be marked (50% and less of the original thickness). The circumference to be tested is 120° on either side of the centre

line of the PF pipe – core air tube intersection & the distance along the tube is to cover the whole length of the core air tube susceptible to direct PF impact.

- For cases of severe degradation/damages provision should be made for repairs.

Flanges:

- Inspect the condition of the flanges for holes and worn out areas. Flanges might require replacement or window patches.
- Ensure the correct alignment of all bolt holes.

All gaskets to be replaced/installed upon re-installation.

Installation:

- Record length measurements of the core air tube, carrier tube and oil lance for each burner.
- Install core air tube gaskets and tighten core air tube.
- Re-installation to be done so as to not damage burner tiles.
- Make sure that all bolts are replaced correctly.

Ensure that each burner is correctly configured to ensure optimum operation. Adjust the relative lengths as required based on engineering instruction.

2 Standards, specifications and Guidelines

The *Contractor* complies with the following Eskom Standards/Specifications/Guidelines

NO	Description
240-56241933	Control of welding during construction, repair and maintenance activities standard
240-56355225	Welding of high pressure temperature and pipework standard
240-56246601	Qualification, certification and accreditation requirements for personnel and entities performing welding related work on Eskom plant standard
SANS 9606 - Part 1	Approval testing of welders – Fusion welding Part 1: Steels
SANS 15614 - Part 1	Specification and qualification of welding procedures for metallic materials - Welding procedure test Part 1: Arc and gas welding of steels and arc welding of nickel and nickel alloys
SANS 3834 – Part 3	Quality requirements for fusion welding of metallic materials Part 3 Standard quality requirements
240-76667211	Outage Management Foreign Material Exclusion Standard
BIA/RM/STD/01	Safety, Health and Environmental specifications to be met by Contractors
BIA/QA/STD/01	Employer's Quality Requirements
36-681	Generation Plant Safety Regulations
240-100979499	Personal Protective Equipment for Work at Heights Specification
32-95	Environmental, Occupational Health and Safety Incident management procedure
32-136	<i>Contractor</i> Health and Safety Requirement
32-345	Vehicle Safety Specification
32-418	Working at Heights
RA/FIRE/WI/01	Hot Work Procedure
MAINT/MMD103 75	Lifting and Rigging
240-44175132	Eskom Personal Protective Equipment (PPE)
240-106628253	Standard for Welding Requirements on Eskom Plant (Weld Rule Book)

It is the *Contractor's* responsibility to ensure that he obtains the latest copy of the above standards
All welding will be completed according to the Eskom Welding Rule book.

2.2 Year Outage Plan

A 5-year outage plan is documented in the table below as per the 12/07/2022 schedule. Due to rescheduling performed on a continuous basis, the plan might change from time-to-time. The latest updates can be obtained from the Service Manager when required.

Outage ID	Outage Code	Station	Unit	Planned/Actual Start Time	Planned/Revised End Time	MW Loss	MW Loss Percent	Outage Description	Status	Planned Duration
19093	MJ06U MO-08-12-2023	Majuba	6	2023/12/08 00:00:00	2024/03/16 23:59:00	663	100	Mini GO	ROLLSCHEDULED	100.00
19087	MJ02UI R-01-04-2024	Majuba	2	2024/04/01 00:00:00	2024/04/28 23:59:00	606	100	Interim repairs	ROLLSCHEDULED	28.00
19097	MJ03U GO-09-05-2024	Majuba	3	2024/05/09 00:00:00	2024/07/18 23:59:00	606	100	GO	SCHEDULED	71.00
19098	MJ06UI N-20-05-2024	Majuba	6	2024/05/20 00:00:00	2024/06/02 23:59:00	663	100	BTI	SCHEDULED	14.00
19096	MJ04UI R-23-05-2024	Majuba	4	2024/05/23 00:00:00	2024/06/20 23:59:00	663	100	Interim Repairs	SCHEDULED	29.00
21919	MJ01UI N-21-08-2024	Majuba	1	2024/08/21 00:00:00	2024/09/03 23:59:00	606	100	Boiler inspection	SCHEDULED	14.00
21920	MJ05UI R-27-04-2025	Majuba	5	2025/04/27 00:00:00	2025/05/24 23:59:00	663	100	IR	SCHEDULED	28.00
21924	MJ06UI R-31-07-2025	Majuba	6	2025/07/31 00:00:00	2025/08/27 23:59:00	663	100	IR	SCHEDULED	28.00
19092	MJ02UI N-01-08-2025	Majuba	2	2025/08/01 00:00:00	2025/08/14 23:59:00	606	100	BTI	SCHEDULED	14.00
21925	MJ01U GO-05-09-2025	Majuba	1	2025/09/05 00:00:00	2025/11/06 23:59:00	606	100	GO	SCHEDULED	63.00
21927	MJ03UI R-16-01-2026	Majuba	3	2026/01/16 00:00:00	2026/02/19 23:59:00	606	100	IR	SCHEDULED	35.00
21922	MJ04UI N-10-02-2026	Majuba	4	2026/02/10 00:00:00	2026/02/23 23:59:00	663	100	Boiler inspection	SCHEDULED	14.00
21930	MJ02UI R-13-	Majuba	2	2026/04/13	2026/05/17 23:59:00	606	100	IR & Hydro	SCHEDULED	35.00

	04-2026			00:00:00						
21931	MJ01UIN-25-05-2026	Majuba	1	2026/05/25 00:00:00	2026/06/07 23:59:00	606	100	BTI	SCHED	14.00
21921	MJ02UGO-15-09-2026	Majuba	2	2026/09/15 00:00:00	2026/11/16 23:59:00	606	100	GO	SCHED	63.00
21926	MJ05UIN-23-11-2026	Majuba	5	2026/11/23 00:00:00	2026/12/06 23:59:00	663	100	BTI	SCHED	14.00
21933	MJ03UIN-11-01-2027	Majuba	3	2027/01/11 00:00:00	2027/01/24 23:59:00	606	100	BTI	SCHED	14.00
21934	MJ04UIN-15-02-2027	Majuba	4	2027/02/15 00:00:00	2027/02/28 23:59:00	663	100	BTI	SCHED	14.00
21929	MJ06UIN-26-02-2027	Majuba	6	2027/02/26 00:00:00	2027/03/11 23:59:00	663	100	BTI	SCHED	14.00

2.3 Interpretation and terminology

The following abbreviations are used in this Service Information:

Abbreviation	Description
ABS	Anti-Lock Braking System
BCEA	Basic Conditions of Employment Act
BU	Business Unit
COID	Compensation for Occupational Injuries and Diseases
FAS	Fall Arrest System
FET	Further Education and Training
FME	Foreign Material Exclusion
HP	High Pressure
IIW	International Institute of Welding
IN	Boiler Inspection
IR	Intermediate Repair
IWP	International Welding Practitioner
IWS	International Welding Specialist
KKS	Kraftwerk Kennzeichen System (unique identification system for plant components)
MGO	Mini General Overhaul

Abbreviation	Description
NEC	New Engineering Contract
NDT	Non Destructive Testing
PPE	Personal Protective Equipment
QCP	Quality control plan
SAIW	South African Institute of Welding
SANS	South African National Standards
SANAS	South African National Accreditation System
SETA	Skills Education Training Authorities
SMAW	Shield Metal Arc Welding
SOW	Scope of Work
TBA	To be advised
WPS	Welding Procedure Specification
WPQR	Welding Procedure Qualification Record (WPQR)
WRB	Welding Rule Book
WQR	Welder Qualification Record
PF	Pulverised fuel
PA	Primary Air
SA	Secondary air
DE	Drive End
NDE	Non drive end
PP&T	Plant performance and testing
SHE	Safety, Health and Environment
WTR	Wall thickness report
DMS	Documentation Management System

3 Management strategy and start up.

3.1 Flexibility with the start of outages

- 1 The outage start-date is stated on the Task Order.
- 2 Movement to Outage dates can take place due to the country's demand for electricity.
- 3 Any movement to Outage dates is to be communicated in writing by the *Service Manager* at least 48 Hours before outage
- 4 Notification of change to the outage date to the *Contractor* before 48 Hours to the outage start date will have no claims for compensation.
- 5 The *Contractor* will be entitled to claim actual accommodation, travel and staff expenses incurred, if the *Contractor* received notification of outage movement within 48 hours of the actual start date of the outage as agreed upon in the latest Task Order revision.

3.3 The *Contractor's* plan for the *service*

1. The *Contractor* submits a program in MS Project / Primavera format (confirmation required upfront)
2. The program includes:
 - a. Activities
 - b. Durations in hours
 - c. Predecessors
 - d. Successors
 - e. Total float
 - f. No constraints (linking to be done properly)
 - g. No resources
 - h. No unnecessary calendars (remove all)
 - i. No empty lines
3. Daily feedback on progress required for duration of each task order program
4. The *Contractor* draws up a Quality Control Plan prior to commencement of the work, for approval by the *Employer*. The *Employer* and the *Contractor* agrees on hold and witness points.

3.5 Management meetings

1. Regular meetings of a general nature may be convened and chaired by the *Service Manager* as follows:

Title and purpose	Approximate time & interval	Location	Attendance by:
Scope clarification meetings	From 18 months before start-date of an outage	Majuba Power Station, Specific conference room TBA	Site Manager, System Engineer, Outage coordinator and Quality Inspectors
Outage Kick-off meeting	Two weeks before the outage start.	Majuba Power Station, Specific conference room TBA	Site Manager, Outage Co-ordinator
Overall Outage contract progress and feedback	Daily at 08:30 as in when required	Majuba Power Station, Specific conference room TBA	Employer, <i>Contractor</i> and <i>Supervisors</i>
Daily outage meeting	Daily at 10:30	Majuba Power Station, Production boardroom (MS Teams)	Site Manager, System Engineer, Outage coordinator and Quality Inspectors
Risk register and compensation events	Weekly on Thursday at 10h00	Majuba Power Station, Specific MS Teams	<i>Employer, Contractor</i>
Safety meeting	Weekly on Wednesday at 14h00	Majuba Power Station, Production boardroom (MS Teams)	Safety Officer
Assessment meetings	After completion of each task order	Majuba Power Station, Specific conference room TBA	Site Manager, System Engineer, Outage coordinator
Post mortem meeting	At task order completion	Majuba Power Station, Specific conference room TBA	Site Manager, System Engineer, Outage coordinator and Quality Inspectors

2. Meetings of a specialist nature may be convened at times and locations to suit the Parties.
3. Records of these meetings shall be submitted to the *Service Manager* by the person convening the meeting within five days of the meeting.
4. All meetings shall be recorded using minutes or a register prepared and circulated by the person who convened the meeting.
5. Such minutes or register shall not be used for confirming actions or instructions under the contract as these shall be done separately by the person identified in the *conditions of contract* to carry out such actions or instructions.

3.7 *Contractor's* management, supervision and key people

3.7.1 The key persons

Key persons of <i>Contractor</i>				
Designation				
Name				
Experience				
Tel				

1. The *Contractor's* Site Manager ensures that only competent persons be allowed to work on plant. The *Employer's* Service Manager is entitled to verify the qualifications of the *Contractor*.
2. The *Contractor's* supervisors must be knowledgeable about the conditions and scope of work contained in this contract and capable of executing the scope of work.
3. The *Employer* may, having stated reasons, instruct the *Contractor* to remove a key person. The *Contractor* then arranges that, after one day, the key person has no further connection with the work included in this contract.
4. The *Contractor* may not replace any of the key persons, without prior written request and approval thereof from the *Employer*.

3.8 Police clearance

1. All *Contractor* personnel to undertake Police clearance
2. Certificates to be provided to the Service Manager at least 2 weeks before commencement of work
3. The Service Manager reserves the right to refuse entry to all persons whose criminal records indicate that their presence on site might create an unsafe and insecure environment to Majuba Power Station.
4. The following website can be used to guide the process.
http://www.saps.gov.za/services/applying_clearance_certificate.php

3.9 Supplier Development and Localisation Requirements

3.9.1 Recruitment of General Labour

1. The *Contractor* recruits 100% of all new recruits, of general labour from Dr Pixley Ka Seme local municipality, using the recruitment form provided by the department of labour. Contact details and application forms will be provided by the Service Manager on request
2. In an event that new recruits are not from the defined Dr Pixley Ka Seme municipality, the *Contractor* needs to provide proof that the local municipality could not provide such individual.
3. The *Contractor* needs to update the *Employer* as well as the department of labour, in the event that there is a change in the staff compliment e.g. dismissal, resignation, etc
4. The *Contractor* submits an updated monthly job statistics on the 1st day of each month, using the reporting template that is provided by the Service Manager.

3.9.2 Transporting of Staff

1. The *Contractor* use transportation sourced from the Dr Pixley Ka Seme local taxi association.
2. Contact details of the Chairpersons of the different associations will be provided by the Service Manager on request.

3.9.3 Small, Micro, Medium Enterprises

The *Contractor* supports local Small, Micro and Medium Enterprises by purchasing your material locally where such material is available

3.9.4 Supplier Development and Localisation Plan

“Local to site “means all areas that fall within the Dr Pixley Ka Seme Municipal area.

The *Contractor* is required

1. To provide a high level Supplier Development & Localisation implementation plan which stretches for the duration of the contract within one month after contract award.
2. To provide an explanation and action plan for deviation from the proposed plan
3. The *Contractor* is required to procure general labour from Dr Pixley Ka Seme. Only skilled and professionals would be procured from outside of Dr Pixley Ka Seme Municipality Area.
4. The *Contractor* is also required to submit its Human Resource Plans indicating the number of new jobs that would be created or retained due to this project.
5. The Candidates for Skills Development would be sourced from Dr Pixley Ka Seme first, then Mpumalanga, before the rest of RSA.
6. The candidates may be developed directly by the supplier, through the suppliers’ own supply network or through the SETA accredited training providers.
7. Candidates are to be currently unemployed graduates from FET (Further Education and Training) colleges, universities or matriculates. These candidates shall also be representative of the population demographics of Mpumalanga province
8. The *Contractor* submits proposals to the *Employer* for acceptance on how he will employ and train local labour in the following positions:

Refer to SDL Matrix

3.10 Management of work done by Task Order

1. Task Orders are issued per outage one month prior to the start of an outage
2. The Task Order includes the scope of work for the specific outage.
3. A Task Order is the instruction to commence work.
4. No work shall commence until a Task Order is issued and has been finalised, accepted and signed by both the *Employer* and *Contractor*.
5. All work will be issued on a Task Order system. The Work Order, Purchase Requisition and Purchase Order will be created via the SAP PM system.
6. Task orders will be raised for all additional items. Assessments will be done after completion of the work for a specific outage.

3.11 Contract change management

1. The *Service Manager* issues a Task order to the *Contractor* to authorise the execution of work.
2. In the event where it is identified that there is additional work to be done outside the scope of work on the Task Order, the *Contractor* will give the *Service Manager* an early warning with a written quotation.
3. If agreed, the *Service Manager* issues a revised Task Order or additional Task Order.
4. The *Contractor* starts the work on the starting date of the task order.
5. The Task Order is signed by both the *Service Manager* and the *Contractor* before work commences.

3.12 Low Service Damages

1. The low service damages will be applicable if the performance of the plant, where repair work was inadequately done, causes partial or full load losses. The following process and damages will apply:
Refer to the Low Service damages table below

Low Service Damages Table

Low Service Damage Description	Value of Low Service Damages	Limit of Low Service Damage
1. Service delaying the Outage/opportunity maintenance Critical Path agreed schedule or Delaying other <i>Contractor(s)</i> from starting/completing their work or delaying the RTS of the unit	2% per total value of the Task orders for the Outage / maintenance opportunity per day	Limited to 15% of the total value of the Task Order(s) for the outage
2. Service delays not finishing as per agreed upon project plan submitted and approved by the <i>Service Manager</i>	0.5% per total value of the Task Order(s) for the Outage / maintenance opportunity per day	Limited to 10% of the total value of the Task Order(s) for the outage
3. Failure to submit documents as per agreed upon Contract Document Submittal Schedule in this service agreement	0.5% per total value of the Task Order(s) for the Outage / maintenance opportunity per day	Limited to 10% of the total value of the Task Order(s) for the Outage / maintenance opportunity
4. Inadequate inspections (not fully complying with the given instruction)	0.5% per total value of the Task Order(s) for the Outage / maintenance opportunity per day	Limited to 10% of the total value of the Task Order(s) for the Outage / maintenance opportunity
5. Failure to update Daily Progress Report/program	0.5% per total value of the Task Order(s) for the Outage / maintenance opportunity per day	Limited to 10% of Task Order Value
6. Failure to respond to an NCR within 3 days	0.5% per total value of the Task Order(s) for the Outage / maintenance opportunity per day	Limited to 10% of the total value of the Task Order(s) for the Outage / maintenance opportunity
7. Failure to resolve an NCR within 30 days	0.5% per total value of the Task Order(s) for the Outage / maintenance opportunity per day	Limited to 10% of the total value of the Task Order(s) for the Outage / maintenance opportunity
8. Failure to Handover completed data books per outage within 30 days from outage completion.	0.5% per total value of the Task Order(s) for the outage per day	Limited to 10% of the total value of the Task Order(s) for the outage
9. Using Personnel which are not Qualified as per this service agreement	0.5% per total value of the Task Order(s) for the Outage / maintenance opportunity per day	Limited to 10% of the total value of the Task Order(s) for the Outage / maintenance opportunity
10. Defect(s) is/are because of poor quality from the <i>Contractor's</i> work performed as per paragraph 2.9 during outages	0.5% per total value of the Task Order(s) for the outage per day	Limited to 10% of the total value of the Task Order(s) for the outage

Low Service Damage Description	Value of Low Service Damages	Limit of Low Service Damage
11. Defect(s) is/are because of poor quality from the <i>Contractor's</i> work performed as per paragraph 2.9 during the maintenance opportunity	2% per total value of the Task Order(s) for the maintenance opportunity per day	Limited to 15% of the total value of the Task Order(s) for the outage

3.13 Documentation control

1. Safety files to be submitted and approved before outage work commence as per client requirements, two weeks in advance before the outage starts
2. The *Contractors* Outage safety file will be handed over to the *Service Manager* after each outage
3. All NEC standard forms should be used eg. Task orders, Early Warnings, Defect certificates and Assessments.
4. The *Contractor* is responsible to plan the supply of the documentation during the various project stages and to provide the documentation in accordance with the *Contractor* Document Submission Schedule (CDSS). A document is thus any written or pictorial information describing, defining, specifying or certifying activities, requirements, procedures or results.
5. The *Contractor* submits all documentation on a formal transmittal form to the *Service Manager*.
6. All manuals, documents, drawings and engineering documentation shall be presented in British English in both software and hardware.
7. All Communications will be filed and kept on site as it is crucial to have the correct communication structures. These communication documents are to adhere to the NEC 3 Term Service Contract communication requirements.
8. Planned Outage Scope of work to be issued to *Contractor* from the client five months in advance
9. Budget quotation for outage work to be submitted one week after SOW submission/SOW clarification
10. Compensation for Occupational Injuries and Diseases (COID) Certificate and letter of good standing must be valid at all times and submitted to the *Service Manager* at each anniversary of the contract. These documents are to be submitted to the Eskom vendor database by the Contractor, before they expire.
11. Two hard copies of the completed data packs submitted to the Service Manager. An Electronic copy of all reports to be provided on CD/ DVD

3.13.1 Contractor Document Submission Schedule (CDSS)

Document Name/Description	Date/Time documents to be submitted
Supplier Localisation plan	Two weeks after contract award
Supplier Localisation report	Quarterly at the 2 nd of each 4 th month after the contract start date
A programme in Primavera or MS Project format as referred to document number (240-85065548)	One week after receipt of Task Order for Outages,
Baseline risk assessment	One week after receipt of Task Order for Outages,
Quality Packs	One week after receipt of Task Order for Outages,
Contractor's Safety file	Two weeks before start of work
Safety file Audit	Outages: Every 30 days after approval of initial file until work for specific outage is complete.
Inspection report	24 hours after inspection activity
Progress report	After Every Shift during Outages,
Time clocking reports	Two weeks together with a forecast for future invoicing for outages.
Technical report and data pack	Within 5 days of completion of the services (per outage)
Updated monthly safety job statistics	1 st day of each month, using the reporting template that is provided by the Service Manager
Compensation for Occupational Injuries and Diseases (COID) Certificate and letter of good standing	At each anniversary of the contract or before current expiry dates on the documents.

3.14 Invoicing and payment

Within one week of receiving a payment certificate from the *Service Manager* in terms of core clause 51.1, the *Contractor* provides the *Employer* with a tax invoice showing the amount due for payment equal to that stated in the *Service Manager's* payment certificate.

The *Contractor* shall address the tax invoice to
Accounts Payable Services
Eskom Holdings SOC Limited
Majuba Power Station
Private Bag 9001
Volksrust
2470

and include on each invoice the following information:

1. Name and address of the *Contractor* and the *Service Manager*;
2. The contract number and title;
3. *Contractor's* VAT registration number;
4. The *Employer's* VAT registration number 4740101508;
5. Description of service provided for each item invoiced based on the Price List;
6. Total amount invoiced excluding VAT, the VAT and the invoiced amount including VAT;

4 Health and safety, the environment and quality assurance

4.1 Health and Safety Risk Management

1. The *Contractor* complies with the health and safety requirements contained in the General Works Information.
2. Eskom is a national key point and therefore strikes are not permitted. Strikes are to be managed by the *Contractor* at his/her own cost.
3. The *Contractor* to have a dedicated Safety Officer on site at all times when work is performed. The Safety Officer to preferably have a National Diploma, but at least have a SAMTRAC or equivalent qualification.

4.1.1 Statutory Safety

1. Site and or Workshop establishments involved in the execution of welding projects shall meet the mandatory statutory health requirements as contained in the OSH Act and regulations 85 of 1993.

4.1.2 Reporting of Incidents

1. The Employer follows an incident prevention policy; refer to 32-95, Environmental, Occupational Health and Safety Incident Management Procedure, which includes the investigation of all incidents involving personnel and property. This is done with the intention of introducing control measures to prevent a recurrence of the same incident. The *Contractor* is expected to co-operate fully to achieve this objective. The Employer's Representative must be informed immediately of any incident before the end of the shift.

NOTE: The reporting of the incident to the Employer's Representative, does not relieve the *Contractor* of his legal obligation to report incidents to the Department of Labour, or to keep records in terms of the Occupational Health and Safety Act, and Compensation for Occupational Injuries and Diseases Act.

4.1.3 Work Stoppages

1. The Employer takes safety serious and therefore lessons learned from other safety lost time incidents are shared with the whole workforce. These stoppages are compulsory and the *Contractor* will not be allowed to claim additional compensation for these stoppages.
2. If the *Contractor* experiences a LTI, he/she might be expected to prepare a presentation and present it at a work stoppage that will be arranged by the Employer. The presentation content/template will be provided by the Employer.

4.1.4 Health and Safety Arrangements

1. The *Contractor* must ensure that all his personnel attend a Health and Safety Induction Course prior to starting with the works. A one- (1) hour course will be provided by the Employer and will be valid for the duration of one- (1) year.
2. The *Contractor* shall comply with the guidelines set out in the Majuba Standard BIA/RM/STD/01 titled "Safety, Health and Environmental specifications to be met by Contractors"
3. Safety Risk Management has the right and authority to visit and inspect the Contractor's workplace or site establishment to ensure that tools, machinery and equipment comply with the minimum safety requirements.
4. The Employer's Representative shall be entitled to instruct the *Contractor* to stop work, without penalty to the Employer, where the Contractor's personnel fail to conform to safety standards or contravene health and safety regulations. The Employer's Representative is entitled to instruct the *Contractor* to discipline his employees and to enforce disciplinary action, and submit a report to the Employer's Representative. The *Contractor* shall implement additional health and safety precautions where necessary.
5. The following Health & Safety requirements should be complied with:
 - a. The *Contractor* must supply a Certificate of Competency of his/her employees to work under the following conditions:
 - i. Confined Spaces
 - ii. Heights
 - iii. Heat stresses
 - iv. Cold stresses
 - b. The *Contractor* to provide the Employer with proof of free issue of adequate Personal Protective Equipment (PPE) to be used by his/her employees (preferably SABS approved). All PPE to comply with the Eskom PPE specification 240-44175132
 - c. Noisy equipment and tools - no equipment or tools > 105db (A) may be supplied/utilised by the Contractor.
 - d. Sub-contractors - the principal *Contractor* must state if a sub-*Contractor* is going to be used and who the sub-contractor/s are. Proof must be given to Eskom that the sub-contractor/s has/ve the necessary competence and resources to carry out the work safely and to ensure that due care of the environment will be exercised.
 - e. Medical examination processes must be complied with.

4.1.5 Vehicle and driver safety

1. All drivers, passengers and pedestrians must obey vehicle safety requirements in terms of the National Road Traffic Act, Act No 93 of 1996, as amended, including other relevant provincial or local requirements.
2. Transportation of passengers: open LDV's:

With effect from 31 May 2006, no Eskom employee or *Contractor* would be allowed to transport passengers on the back of open light delivery vehicles (LDV's). It is a legal requirement to provide safe transportation of Eskom and *Contractor* employees – therefore the following will be enforced:

 - a. Ensure that no employee, including *Contractor* employees or any other person, when on an Eskom site and/or performing work for Eskom, is allowed to be transported in the back of open vehicles.
 - b. There will be cases where this may not be reasonable or practicable, namely where vehicles are used during line inspections on sites or on private roads, or similar cases, and in these cases such vehicles must be driven at less than 30km per hour or at a speed suitable to the prevalent conditions. In such cases, the carrying of passengers in the back of such open vehicles could be explicitly allowed, after:
 - i. a risk assessment has been carried out, indicating a very low risk;
 - ii. mitigating factors have been identified to control any risk identified;
 - iii. proper seating and handrails have been provided on the back of the open vehicle;
 - iv. These measures have been discussed at the relevant Health and Safety Committee Meeting and approved by the *Employer*.
 - v. is defined and contained in a formal written division's or BU's policy, including the appropriate mitigating factors;
 - vi. Such a policy has been communicated to all employees and contractors.

The above risk assessment findings/outcomes must be available at all times for audit purposes.

- c. Tools and equipment must be properly secured.
- d. Only authorised drivers may transport passengers.
- e. Proof must be submitted on request in terms of valid roadworthiness of the vehicle/s.
- f. The above must apply to on site and off site transportation of passengers.
- g. No person may be transported in the back of vehicles closed by means of canopies, unless provided with factory-fitted or manufactured-approved, proper seating and safety belts, i.e. Crew cabs.
- h. The driver must ensure that no employees are transported in the back of open vehicles unless it is allowed in terms of a divisional or BU-specific policy as referred to in paragraph b above. This also applies to *Contractor* and *Contractor* employees when performing work for Eskom.
- i. The driver must ensure that all canopies are being properly fitted and secured and that all loose tools and objects in vehicles are properly secured.
- j. The driver must ensure that their passengers are seated and wear seatbelts at all times.

4.1.6 Vehicle Standard minimum specifications

- 1. *Contractor* vehicles are to comply with the requirements specified in the Eskom Vehicle Safety Specification 32-345.
- 2. The standard minimum specifications are applicable to all Eskom-owned vehicles and vehicles used when performing work for Eskom Holdings SOC Limited and its subsidiaries, including contractors (subsidised transport, contractors, consultants, and any person insured directly or indirectly by Eskom, driving a vehicle within or beyond the borders of South Africa). This includes vehicles owned, hired or leased by Eskom or its subsidiaries or any vehicle an employee makes available for Eskom-related business purposes.
- 3. All vehicles used for Eskom business shall meet the following requirements:
 - a. Factory-fitted antilock braking system (ABS) for all vehicles.
 - b. Factory-fitted driver and passenger air bags.
 - c. Alarm/immobiliser, factory-fitted, and if not available by the manufacturer, it shall be fitted at approved fitment centres.
 - d. Factory-fitted power steering.
 - e. Tyres as per the manufacturer's specifications for the intended purpose.
 - f. Two emergency warning triangles.
 - g. Factory-fitted air conditioner.
 - h. Reverse beeper shall be standard on all heavy commercial vehicles, buses and construction equipment or vehicles being used on construction sites.
 - i. Refer to the standard for specific requires for Light Delivery Vehicles (LDVs), Heavy Commercial Vehicles, Minibuses, Midi-buses and buses, Trailers and caravans, Construction vehicles and Other requirements.

4.1.7 Hot Work

The *Contractor* to comply with Eskom's Hot Work procedure.

1. The Hot Work Monitor must be in possession of the following qualifications and training:
 - a. Basic fire extinguisher training
 - b. Hot work monitor training
 - c. Broad knowledge of welding, cutting, brazing, grinding, soldering and other hot work activities
 - d. Must be able to read and write English
2. Hot work approval
Before hot work operations begin in a non-designated location, a hot work approval is required. Before the hot work approval is issued, the following conditions are to be verified by the Hot Work Monitor:
 - a. Hot work equipment to be used shall be in satisfactory operating condition and in good repair.
 - b. Where combustible materials, such as paper clippings, wood shavings, or textile fibres are on the floor, the floor shall be swept clean for a radius of 11m. Combustible floors (except wood on concrete) shall be kept wet, be covered with damp sand, or be protected by non-combustible or fire retardant shields.
 - c. Where floors have been wet down, personnel operating arc-welding equipment shall be protected from possible shock.
 - d. All combustibles shall be relocated at least 11m horizontally from the work site. If relocation is impractical, combustibles shall be protected with fire retardant covers or otherwise shielded with metal or fire retardant guards or curtains. Edges of covers at the floor shall be tight to prevent sparks from going under them, including where several covers overlap when protecting a large pile.
 - e. Openings or cracks in walls, floors, or ducts within 11m of the site shall be tightly covered with fire retardant or non-combustible material to prevent the passage of sparks to adjacent areas.
 - f. Conveyor systems that might carry sparks to distant combustibles shall be shielded.
 - g. If hot work is done near walls, partitions, ceilings, or roofs of combustible construction, fire retardant shields or guards shall be provided to prevent ignition.
 - h. If hot work is to be done on a wall, partition, ceiling, or roof, precautions shall be taken to prevent ignition of combustibles on the other side by relocating combustibles. If it is impractical to relocate combustibles, a fire watch on the opposite side from the work shall be provided.
 - i. Hot work shall not be attempted on a partition, wall, ceiling, or roof that has a combustible covering or insulation, or on walls or partitions of combustible sandwich type panel construction.
 - j. Hot work that is performed on pipes or other metal that is in contact with combustible walls, partitions, ceilings, or other combustibles shall not be undertaken if the work is close enough to cause ignition by conduction.
 - k. Fully charged and operable fire extinguishers that are appropriate for the type of possible fire shall be available immediately at the work area. If existing hose reels are located within the hot work area defined by the permit, they shall be ready for service, but shall not be required to be unrolled or charged. (Loan extinguishers are available from the Fire Department)
 - l. If hot work is done in close proximity to a sprinkler head, a wet rag shall be laid over the head and then removed at the conclusion of the welding or cutting operation. During hot work, special precautions shall be taken to avoid accidental operation of automatic fire detection or suppression systems (for example, special extinguishing systems or sprinklers)
 - m. Nearby personnel shall be protected against heat, sparks, slag, and so on
 - n. All welding machines and cutting torch trolleys are to be equipped with at least a 2,5kg dry powder fire extinguisher.
 - o. If hot work has to be done in high-risk areas where fire systems cannot be impaired, a welding tent should be built around the object to be worked on i.e. Bulk Fuel Oil Plant.
3. Appointment of Hot Work Monitors
 - a. Eskom and each *Contractor* Company that is required to perform hot work shall appoint in writing at least one (1) hot work monitor for normal day-to-day maintenance related hot work/ outage related hot work. Additional hot work monitors may be appointed if the workload requires such appointments.
4. Hot Work Approval
 - a. The hot work monitor must complete a hot work approval form (Form Part 1). as per 32-681 Plant Safety Regulations

Refer to the procedure for further information.

4.1.8 Confined Spaces

Such As Vessels, Mills, Culverts, Flues, Furnaces, Ducts, Pits, Sewers, Tunnels and Underground Chambers
(Refer General Safety Regulation 5 of the OHS Act)

1. At least one door or manhole giving access to each confined space must be provided with a means to lock such door or manhole in the open position. A confined space warning sign must also be attached next to such entrance of a confined space when entry into this area will be required.
2. The door or manhole concerned must be locked in the open position and a confined space warning sign attached before any person is allowed to enter such confined space. The locking, or other preventative measure, must constitute an integral part of the isolation required before the permit to work is issued. Where such a door or manhole cover must be removed by a maintenance person, provisos similar to those stipulated under (section 17.2 c and 7.11.2 b) must apply.
3. Before any door giving access to a confined space is closed, the person closing such door must ensure that there are no persons inside the confined space, and that all tools, equipment and debris have been removed.
4. Where a confined space can be isolated and adequately ventilated, this must be done before the space is environmentally tested and certified clear of all dangerous gases. Thereafter a gas test certificate an environmental certificate must be issued before any person is allowed to enter. In addition:
 - a. Adequate ventilation, gas monitoring and thermal stress monitoring (heat stress – WBGT index - cold stress) must be maintained while persons remain in the space.
 - b. Only approved lighting and portable electrical tools shall be allowed, (Refer Electrical Machinery Regulation 10 of the Act.
 - c. A permit to work must be issued.
5. Where there is a possibility of dangerous substances being present in a confined space which cannot be effectively isolated and adequately ventilated, the following measures must be taken before any person is allowed to enter that space:
 - a. All practical steps must be taken to prevent the ingress of dangerous substances.
 - b. Every person who enters the confined space must wear approved self-contained breathing apparatus and must have competency for the equipment.
 - c. Every person who enters the confined space must wear a safety harness to which a rescue line is attached.
 - d. A rescuer must remain on duty outside the confined space and this person must maintain communication with those inside the confined space. The rescuer must control the rescue line(s) attached to the safety harness(es) and must assist in the removal of any person from the confined space in the case of an emergency. An additional set of breathing apparatus must be available for the use of the rescuer.
 - e. Adequate steps must be taken to ensure that all persons wearing breathing apparatus are withdrawn from the confined space before the end of the specified working duration of the breathing apparatus.
 - f. A permit to work must be issued.
6. Where it is not possible to reduce the WBGT index to be below 30 for manual work, access shall only be allowed, if relevant training has been done and a local procedure is in place that explains in detail the access control and health and safety precautions as described in the environmental regulations. (Refer Environmental Regulations for Workplaces 2(4) of the Act).
7. If the original scope of work changes, a new permit to work must be issued, or if hazardous substances are used, the risk assessment, pre-work checklist, the environmental certificate, gas test certificate shall be re-evaluated and re-issued as required.

4.1.9 Working on Heights

General

1. Wherever reasonably practicable, preference is given to the performance of work at ground level as opposed to in an elevated position.
2. Where work in an elevated position is necessary, preference is given to fall prevention measures such as, but not limited to, effective barricading and the use of work platforms.
3. Persons may only work from a fall risk position if a site-specific fall protection plan is in place and correctly implemented and consists of the following:
 - a. All appointments for the fall protection plan developer and implementer are in place.
 - b. One risk assessment, which is specific and incorporates the working at height risk assessment, as well as the site-specific risk assessment, has been completed for the work to be conducted.
 - c. Safe working procedure/task analysis and work instructions, approved by a competent person, are in place.
 - d. A fall rescue plan, along with necessary equipment and trained rescuers, is in place.
 - e. Appropriate training, as determined by the risk assessment, has been provided.
 - f. Appropriate height safety equipment and personal protective equipment have been issued to the individual.
 - g. There are equipment inspection procedures and up-to-date inspection records.
 - h. Individuals are medically fit to work at height, and records of this are kept.
 - i. A site-specific risk assessment is performed.
4. While work is in progress, adequate warning signs and/or barricades shall be used in all areas where there is a risk of persons being injured by materials or equipment falling from the work area. Barricades should be continuous and easily visible.
5. A drop zone shall be established with appropriate warning signs and barrier tape or barricading, warning personnel below of workers above and potential falling objects.

4.1.11 Risk Assessment

1. A risk assessment allows for careful examination of what could cause harm to people because of a work activity, and it allows one to take the necessary precautions to prevent the harm from occurring.
2. The following hierarchy of controls has to be observed.
 - a. When considering work at height, a risk assessment must be conducted, form part of the health and safety plan to be applied on site and must include;
 - i. the identification of the risks and hazards to which persons may be exposed to;
 - ii. an analysis and evaluation of the risks and hazards identified based on a documented method;
 - iii. a documented plan and applicable safe work procedures to mitigate, reduce or control the risks and hazards that have been identified;
 - iv. a monitoring plan; and
 - v. a review plan
 - b. Working at height risk assessments shall take into account factors such as:
 - i. the necessity for the work to be done in an elevated position as opposed to on the ground;
 - ii. barricading and other fall prevention measures;
 - iii. requirements of the safe work procedure;
 - iv. restrictions in fall distances and clearances;
 - v. mobility required for the task, for example, degree of vertical or horizontal movement;
 - vi. height being worked at;
 - vii. possible injuries;
 - viii. duration of exposure;
 - ix. frequency of performing these activities;
 - x. type of work and ergonomic considerations;
 - xi. work site/area congestion;
 - xii. potential/likelihood/causes of a fall occurring;
 - xiii. endurance of workers;
 - xiv. risk control measures;
 - xv. electrical hazards and safe clearances from overhead power lines;
 - xvi. structure (ease of access, secure footing, and compatibility with fall prevention and/or fall arrest equipment);
 - xvii. terrain;
 - xviii. restrictions with reference to working alone (a rescue must always be executable);
 - xix. falling objects; and
 - xx. suitable anchor points.
 - c. Develop approved written safe work procedures/task analysis and work instructions for all elevated work and make them available to all persons carrying out the work. Standard procedures may be suitable for most work; however, unusual conditions or architectural features may require additional site-specific procedures. The person supervising the work must ensure that safe work procedures/task analysis and work instructions are followed at all times.
 - d. In the design phase, consider fall risks with regard to minimising risk, ease of access, anchor points, and avoidance as far as reasonably practicable.
 - e. The risk assessment will determine the selection of suitable work at height equipment and systems for the work to be performed safely.
 - f. Be aware of hazards resulting from adverse weather conditions, and where necessary, modify the work method accordingly.
 - g. Determine the content and intervals of planned job observations during the risk assessment.
 - h. The risk assessment must include the rescue plan.
 - i. Persons working alone should have a practical way of performing a rescue in the event of an incident.
 - j. Risk assessments must be performed and documented by competent persons. The mitigation process from the risk assessments must influence the content of the fall protection plan.
 - k. In the case of live work, work has to be conducted according to standards and procedures while maintaining minimum safe working clearance.

- I. Take into account the risks associated with objects falling from heights. Tools and equipment must be safely secured and attached to the body or structure

4.1.12 Fall Protection Plan

1. A task-/job-specific fall protection plan shall be developed and approved by a competent person for any activity where there is a risk of a fall.
2. A competent fall protection plan developer must be appointed according to 10(1)(a) of the Construction Regulations.
3. The fall protection plan shall include a task-/job-specific risk assessment and requirements relating to the following:
 - a. Training programme for employees working from a fall risk position
 - b. Appointments and authorisations
 - c. The procedure addressing the inspection, testing, and maintenance of all fall protection equipment
 - d. A risk assessment that is site-specific with regard to fall risks for work to be performed
 - e. The processes for evaluation of the employees' medical fitness necessary to work in a fall risk position and the records of this (medical surveillance programme)
 - f. Equipment use and specification
 - g. Fall prevention, fall arrest, and fall rescue
 - h. Method statements or safe work procedures/task analysis/work instructions.
4. The fall protection plan and its requirements shall be integrated into the health and safety plan.
5. Adherence to the fall protection plan is mandatory. An induction on the fall protection plan must be carried out for all relevant employees.
6. The fall protection plan must be suitably amended in accordance with the risk assessment, equipment technology, standards, and legislation.
7. The fall protection plan must be monitored and reviewed as required by the work performed and changes in hazards.

FAS Training

1. All users of height safety equipment for working at height must be trained, assessed and declared competent for the specific height safety equipment and associated structures.
2. Only service providers accredited by Eskom to present the basic Fall Arrest System and Rescue Course as per the working at heights procedure will be accepted and recognised as competent to provide competency for working at heights training. A list of the Eskom Accredited Service providers can be obtained from the Service Manager.
3. Validity of FAS and rescue training
 - a. There shall be no expiry date on official training, but at least one job observation on each user per annum, for example by a peer.
 - b. There shall be no expiry date on the certificate, but only the date of training.
 - c. Evaluation to be conducted every three years by an accredited trainer.
4. The need for refresher training is determined by the employer, taking into account factors such as period of inactivity and changing circumstances as determined by risk assessments and job observations.
5. Refresher training/workshops for rescue need to be run on a regular basis, at least six- monthly.
6. At least two persons per team have to be able to perform rescues if work at height is involved.
7. All personnel trained to perform rescues will be trained to first aid Level 2.
8. Documented training records for all work at height training must be maintained.

4.1.14 Lifting and Rigging

1. General Rigging Practices (applicable to critical and non-critical lifts)
 - a. A pre-job brief shall be conducted prior to every rigging activity and shall include operating experience.
 - b. A visual inspection of all lifting equipment shall be done prior to each use.
 - c. Softeners shall be used on sharp corners and edges.
CAUTION: Failure to properly protect the lifting equipment from sharp edges can result in damage, to the lifting equipment and dropped loads.
 - d. No personnel are allowed directly below the suspended weight.
 - e. Loads shall not remain suspended without a qualified rigger or crane driver present.
 - f. Where a load cell is utilised, a load cell observer shall be appointed who shall stop the lift if the Pre-agreed load limit is likely to be reached.
 - g. The load path and lay down area shall be identified and walked down prior to the lift and barricaded to ensure :
 - i. The lay down area is capable of carrying the load (Weight and volume) .
 - ii. The lifting equipment can follow the load path while respecting the SWL of lifting equipment.
 - iii. No personnel shall be below the load at any stage on the load path.
 - iv. The load path is suitably barricaded and sign-posted.
 - h. Guide ropes may be used to guide loads however, at no stage shall a guide rope be tied to a person. A suspended load may only be handled by hand when the load is below shoulder height and there is no risk of slipping or there is a confined space between the handler and the load.
 - i. When lifting concrete blocks or floor plugs, the following practices shall be observed:
 - i. Verify connection installed are intended as rigging points.
 - ii. Inspect the condition of the lifting points prior to the lift for corrosion, wear, cracks or deformation.
 - iii. Inspect the condition of the concrete block of floor plugs to the lift for cracks or physical damage.
 - iv. Verify load markings and the presence of hold down mechanisms.

NOTE: If wear is noted or in doubt, request non-destructive testing to be performed and / or visual inspection by the civil engineer.
 - j. Load cells shall be used under the following conditions:
 - i. It is a critical lift
 - ii. The load cannot be reliably determined due to possible binding of other reasons.
NOTE: If a load cell cannot be used, then approval from the Technical Support Manager or his delegate shall be obtained to proceed with the lift.
 - k. A post lift inspection of lifting equipment shall be performed and tagged if any damage is noted and the lifting equipment store man informed.
 - l. The hoist chain or hoist rope shall be free from kinks and twists and shall not be wrapped around the Load.
 - m. The load shall only be lifted high enough to clear obstructions, where, multiple obstructions exist along the load path, the load shall be lifted high enough to clear the highest obstruction unless specifically noted otherwise in the critical lift plan.
NOTE: The use of a guide rope is mandatory in these circumstances.
2. Load Weight Determination
 - a. The load weight shall be determined using one or more of the following methods:
 - i. Official design documentation or technical manuals provided by the manufacturer.
 - ii. Data plates, labels.
 - iii. Use of measuring equipment (dynamometer, spring balance or other load measurement tools).
 - iv. Calculation using the method in Appendix 3
3. Non Power Driven Lifting Equipment Inspection and Maintenance
 - a. Lifting equipment shall be inspected in accordance with the inspection and Maintenance program for lifting equipment.
 - b. The inspection program shall comply with the requirements of the occupational health and safety Act and its regulations with particular reference to the driven machinery regulations.
 - c. The inspection shall be conducted taking into consideration the manufacturers design standards.

- d. Lifting equipment conforming to SANS standards is preferred. Approval shall be obtained from the manager for lifting equipment complying with alternative standards.
 - e. Personnel conducting lifting equipment inspections shall be trained and authorised to perform such inspections.
 - f. *Contractor* lifting equipment shall be inspected prior to use by a person qualified to inspect the lifting equipment.
4. Power Driven Lifting Equipment Inspection Maintenance
- a. Lifting equipment shall be inspected in accordance with the inspection and Maintenance program for power driven lifting equipment.
 - b. The inspection program shall comply with the requirements of the occupational health and safety Act and its regulations with particular reference to the driven machinery regulations.
 - c. The inspection shall be conducted taking into consideration the manufacturers standards.
 - d. Lifting equipment conforming to SANS standards is preferred. Approval shall be obtained from the Manager for lifting equipment complying with alternate standards.
 - e. Personnel conducting lifting equipment inspections shall be trained and authorised perform such inspections.
5. Lifting Equipment Modification, Construction and Design Limits
- a. Lifting equipment shall not be operated outside its design limits unless a detailed design assessment is conducted by engineering and presented to the SME and the Common Plant Area Manager for approval.
 - b. Waiver applications or lifting equipment design changes shall be supported by the Common Plant Area Manager prior to submission to the legislative authority (department of labour).
 - c. Design of lifting beams and structures carried out on-site shall be carried out in Accordance with an accepted design standard, which shall be indicated in the documentation utilising the station design process.
 - d. Lifting from supports that are not designated as lifting supports (e.g. Cable trays, Pipes, pipe supports and other plant structures) shall not be performed unless approved by the structural engineer prior to the lift.
6. Lifting Equipment and Operations Personnel Training, Qualifications and Fitness
- a. Lifting equipment and operations personnel shall be trained in accordance with the training of lifting Equipment.
 - b. All lifting personnel shall undergo a medical exam annually to ensure that they are medically fit to perform lifting and rigging operations.
7. Personnel Lifting
- a. The use of a Crane to hoist Employees on personnel platforms is prohibited except When the erection, use and dismantling of conventional means of reaching the worksite , such as a Personnel hoist, ladder, stairway, work platform of scaffold would be more hazardous or is not possible because of structural design or worksite conditions.
 - b. A documented pre-job brief is required to be performed with the Crane Operator, Signal person, Person-in-charge and the Employee(s) being lifted prior to the beginning of the task.
 - c. A trial lift is required to be performed prior to lifting personnel as follows:
 - d. Load the personnel platform to a weight equal to the anticipated live loaded weight the platform. Travel the personnel platform to each location that work is to be performed.
 - e. Just prior to hoisting Personnel, lift the platform a few millimetres off the surface and inspect the rigging for deficiencies.
 - f. The personnel platform may only be used to lift Personnel and not for other purpose such as handling materials.
 - g. All materials and tools for use during a personnel lift are required to be secured to prevent dropping.
 - h. It is important to evenly distribute materials and tools for use during personnel lift to prevent and unbalanced load.
 - i. Employees should keep all parts of the body inside the platform during hoisting and positioning of the platform.
 - j. The personnel platform should be tied off secured when entering or exiting a suspended platform.
 - k. Tag lines are required unless their use creates an unsafe condition.
 - l. Fall protection is required (except over water) for personnel working out of the platform. The lanyard(s) for the fall protection should be connected to the load block or to a structural member of the platform capable of supporting a fall impact.
 - m. Exiting of the personnel platform is required to be performed in a slow, cautious manner.
8. Scrapping Of Lifting Equipment

- a. Lifting equipment that cannot be used due to it is not passing an inspection of load test must be taken out of service and scrapped.
- b. The lifting equipment must be physically destroyed by cutting rope wire sling with an oxy acetylene-cutting torch, so that it cannot be used again.
- c. This process of destroying unsafe lifting equipment must be witnessed by the GMR 2.1 who will record all destroyed equipment, and here then removed from the lifting equipment register.

4.1.15 Welding Safety

1. Personnel performing welding and the support staff in close proximity to the point of welding must wear welding helmets with minimum shade rating 10.
2. The welding helmet inner clear shield shall always be of a shatter resistant polycarbonate type plastic to prevent eye injuries in the event of impact by debris during grinding operations. The outer clear shield covering the welding shade glass can be of normal glass to protect the shade glass from weld spatter, thereby preventing reduced UV shielding efficiency of the shade glass
3. Personnel performing welding and the support staff in close proximity to wear long sleeve tops and covered neck areas to prevent skin burn by ultraviolet (UV radiation)
4. Safety glasses worn in close proximity of welding (closer than 15m) will absorb up to 60% of welding arc emitted UV radiation and effectively reduce the occurrence of accidental "arc eyes"
5. The use of thorium containing TIG electrodes should be avoided where practically possible. When grinding thorium containing electrodes, respiratory devices must be worn to prevent inhalation of the mildly radioactive substance thorium
6. Prolonged exposure to certain heavy metals constituents such as hexavalent chromium present in welding fumes may cause severe respiratory diseases. These species are more prevalent during shielded arc welding and flux cored arc welding of CR-Mo stainless steel and high alloy welding operations
7. Arc welding and cutting produce intense electromagnetic fields, which may affect electronic prosthesis such as pacemakers. Welding personnel with such implants should consult medical practitioners to establish whether they can expect health risks when exposed to such welding environments
8. High Frequency (HF) arc starting modules can also be a source of health concerns regarding electromagnetic field effects on medical devices. Furthermore, HF signals may also affect the operation of sensitive safety critical electronic equipment such as gas monitors if such devices are not adequately screened
9. Work in confined spaces shall be conducted according to the Eskom Plant Safety Regulations

4.2 Environmental constraints and management

The *Contractor* is required to ensure that all works are carried out as per the ISO 14001 standard and Eskom's Environmental Policy BIA/ENV.

The *Contractor* shall make clear provision for as part of the tender submission and thereafter prepare the following documents upon awarding of the contract:

1. An environmental management plan that is based on applicable legislation, which relates to their activities on site.
2. An appointed, trained and competent person in writing, who will have the responsibilities of implementing all environmental requirements on a specific contract
3. The Aspects/Impacts register and an environmental management plan
4. All method statements, at a minimum addressing the activities that have significant environmental aspects
5. Proof of competence (certificates) of persons performing activities that could have significant impact on the environment.
6. Environmental Management System certificate (if certified) if not, an environmental management manual and/or procedures
7. List of all Hazardous Substances to be used and their MSDS's
8. Environmental file to be kept on site by contractor

The *Contractor* shall ensure that persons in its employment are aware of the significant environmental aspects and related actual or potential environmental impacts associated with their work. The *Contractor* shall be available for Environmental audits during work hours.

The following environmental requirements are complied with at all times:

1. Zero liquid effluent discharge.

2. No chemicals will be dumped into the station drains or on the premises.
3. No oil or waste will be dumped in an unauthorised area or unlicensed waste site.
4. Asbestos will be handled and stored according to Act 15 of 1973 (hazardous substances Act).
5. No materials or waste will be burnt on site. Hazardous substances shall be handled and stored according to the hazardous substances Act no 15 of 1973. No effluent shall be discharged into the public streams.
6. The *Contractor* shall comply to the Construction Safety, Health, and Environmental Management 32-136
7. Environmental incidents shall be reported, captured and investigated as outlined in the latest version of the Environmental, Occupational Health and Safety Incident Management Procedure 32-95.
8. The *Contractor* shall comply with any directive and/or instruction related to legislation and/or Eskom Procedures that is issued from the Environmental Department.

4.3 Quality assurance requirements

Please note that Majuba Power Station was built according to BS EN standard. The ASME standard will not be accepted

The supplier should have a Iso 9001 Certification

1. The *Contractor* is required to have SANS ISO 3834-3 certification. Prove of SANS ISO 3834-3 certification to be submitted with the tender. If the *Contractor* is not certified yet, proof of progress of being accredited to be provided with tender
2. The *Contractor* is required to have Welding Procedure Qualification Record (WPQR) and Welding Procedure Specification (WPS) to SANS 15614 - Part 1 for thickness range 3mm to 20mm as per the list below. Proof to be submitted with tender.
 - a. SMAW welding of group 1 (Carbon steel)
 - b. SMAW welding of group 8 (Stainless steel)
 - c. SMAW group 1 to group 8

All WPS will be supported by a valid WPQR to SANS 15614 - Part 1 as stipulated in Eskom Welding standard 240-56241933.

3. As per compliance requirements to SANS 3834-3, the *Contractor* to have at least 1 x level 1 Welding Inspector to SAIW requirements. Proof of qualification to be provided with the tender.
4. The *Contractor's* welders are all qualified for butt weld and fillet weld to SANS 9606 - Part 1 with the SMAW process. Proof for valid qualification of welders as well as proof of employment with the *Contractor* to be supplied with before the outage commence
5. The *Contractor* to qualified rigger to execute the rigging work.
6. The *Contractor* submits QCP's 1 week after receipt of a task order.

The Employer reserves the right to audit the Supplier, through prior notification, at any time of the contract.

4.4 Foreign Material Exclusion

The following controls and practices comply:

1. All system openings or access is covered except when the work is being carried out under a specific procedure.
2. The specific opening is being monitored.
3. Work, inspection, testing, sampling or surveying is in progress that requires the removal of the FME device.

FME devices shall:

1. Prevent the introduction of foreign material into the component or system during the cover's installation and removal.
2. The cover must be clearly marked as an FME device, clean, sturdy and free from debris.
3. Be secured so that they will not be sucked in or blown away by a pressure drop or surge of the system. The use of paper, plastic bags, rags or any other unauthorised materials are not permitted to be used as FME devices.
4. Not be capable of damaging any critical surface and not show evidence of chemical decomposition during service or result in corrosive action.
5. Internal FME devices, which seal off an opening from inside the system, must be used wherever practical to isolate the component or system opening.

6. Where practical a removed component such as a valve bonnet, flange, and junction box cover should be used as an FME device.
7. Internal closure devices shall be attached internally whenever possible to avoid their inadvertent loss into the system during work activities. Special consideration should be given during installation and removal of such devices.
8. Inspect internal devices for damage prior to installation.
9. FME devices should be clearly marked to prevent inadvertent removal or damage. Bright colours are recommended.
10. All FME devices are to be recorded in a register.

5 Procurement

5.1 Key Competencies and Experience

Required skills competency table:

Skill	Quantity	Qualification	Years of Related experience
Project Manager	1	National Diploma(Technical) Certificate in Project Management NEC	2 Years
1.Supervisor	1	National Diploma(Technical)	4yrs
2 Forman (Welding,Boiler making and Fitting)	3	Grade 10 and Trade Test	7 years
QC Inspector I	1	Level 1 as per SAIW requirements	2 years
2.Artisan		Grade 12/N2 and trade test	2yrs
3.technician		Grade 12 +3 technical	2yrs
4.safety officer		National diploma in safety Management/environmental Management, HIRA and Incident investigation	2yrs

5.2 People

5.2.1 Minimum requirements of people employed

1. All Artisans are qualified and in possession of a valid trade test certificate
2. Welding Supervisors have at least one of the following qualifications as a minimum– refer to 31 of 240-56246601 (WRB):
 - a. International welding specialist (IWS) in line with IIW document IAB-252R2-14 or
 - b. International welding practitioner (IWP) in line with IIW document IAB-252R2-14 or
3. Welders are all qualified according to SANS 9606 – refer to 31 of 240-56246601 (WRB). Qualification
4. Riggers are all qualified proof to be submitted before outage start.
5. Semi-skilled personnel are in possession of valid school senior certificate.
6. All project managers, site managers and project leaders must have undergone training in contracts management (e.g. **NEC3**), any technical discipline diploma (e.g. construction, civil, mechanical, electrical, C&I), managerial course (e.g. project management, etc.) from reputable institutions.
7. General Supervisors are qualified and in possession of a valid diploma, and must have undergone supervisory training from a reputable institution.
8. The *Contractor* will provide trained personnel for the implementation of all work.
9. The *Contractor* remunerates his employees at not less than the proclaimed statutory wage (Minimum Wages Act). Failure in this regard will result in non-performance and therefore immediate termination of the contract.

According to the SKILLS DEVELOPMENT ACT 97 OF 1998, the following definition for artisans and trades are emphasised:

- **artisan** means a person that has been certified as competent to perform a listed trade in accordance with this Act. (Definition of “artisan” inserted by section 1(a) of Act 37 of 2008)
- **trade** means an occupation for which an artisan qualification is required in terms of section 26B. (section 1(i) of Act 37 of 2008)

Section 26C section 2 (a) states the following – “No person, whether employed or self-employed, may hold themselves out to be qualified as an artisan in a listed trade unless that person is registered as an artisan in terms of subsection (1)”

With reference to the Act, all personnel are adequately qualified for the task to be performed. Qualifications of all staff to be submitted to the Service Manager two weeks prior to commencement of work and approval of qualifications of staff to be granted within one week of receipt of qualifications.

The *Contractor* submits requests to change any pre-approved staff together with proof of qualifications for approval prior to changing the staff.

5.2.2 Supervision

1. The *Contractor* provides Responsible Person (RP)s in terms of the Plant Safety Regulations.
2. The *Contractor* trains enough staff to cover for leave periods as well as night shifts, if required.
3. Training will be provided by Eskom Majuba and is done according to a schedule, thus arrangements need to be made with the Service Manager well in advance.
4. *Contractor* to have a Supervisor on site at all times

5.2.3 Key Competencies and Experience

1. Supervisors and/or Project Managers/Supervisors:

- a. Knowledge of PSR
- b. Capability to read and interpret drawings
- c. Ability to read and understand scopes of work
- d. Technically competent on the use Microsoft Packages (excel, outlook, Microsoft word).
- e. Knowledge of how to generate inspection/ refurbishment reports
- f. Maintain high standards despite pressing deadlines
- g. Demonstrates knowledge of the WRB and related procedures
- h. Is alert in a high-risk environment; follows detailed procedures and ensures accuracy in documentation and data
- i. At least 2 years welding and Supervisory/Project management experience
- j. At least 2 years power plant experience, preferably Eskom plant

2. Welders/Boiler Makers/Inspectors and Riggers

- a. Knowledge of PSR
- b. Capability to read and interpret drawings
- c. Ability to read and understand scopes of work
- d. Knowledge of how to complete inspection/ refurbishment reports
- e. Demonstrates knowledge of WRB and related procedures
- f. Ability to use/operate the required equipment/tools
- g. Ability to use the correct tools for the service
- h. Maintain high standards despite pressing deadlines
- i. At least 2 years welding experience
- j. At least 2 years power plant experience, preferably Eskom plant

3. Semi-Skilled

- a. Ability to use/operate the required equipment/tools
- b. Maintain high standards despite pressing deadlines

- C. At least 1 year relevant experience

5.3 Subcontracting

5.3.1 Preferred subcontractors

All subcontractors need to be approved by the Service Manager before the subcontractor gets to site.

5.3.2 Subcontract documentation, and assessment of subcontract tenders

The *Contractor* prepares subcontract documentation. The use of the NEC system is recommended on how subcontract tenders are to be issued, received, assessed and awarded.

5.4 Skills Development

The *Contractor* complies with the skills development requirements contained in the SDL requirements section.

5.5 Plant and Materials

5.5.1 Specifications

1. The *Contractor* to ensure that the material certificates are supplied by the *Employer* for all material used in the repair/welding work
2. No material to be used without material certification

5.5.2 Plant & Materials provided “free issue” by the *Employer*

1. All materials will be supplied by the *Employer* as stated in 1.3
2. Scaffolding, lagging removal and replacement of lagging will be provided by the *Employer*.

5.5.3 Contractor’s procurement of Plant and Materials

1. All tools and equipment used to refurbish the plant are supplied by the *Contractor*.

6 Working on the Affected Property

6.1 *Employer’s* site entry and security control, permits, and site regulations

The Entry to site is only approved once the following is adhered to:

1. The *Contractors* Safety file is to be approved by the *Employer’s* Safety department.
2. All personnel must undergo screening for Criminal records and outstanding warrants
3. Site-specific induction is to be done by all personnel.

Refer to the General Works information

6.1.1 Permits

1. The *Contractor* will ensure that he/she is informed of all the requirements of Eskom’s Plant Safety Regulations and ORHVS and that he/she at all times comply to the requirements of these Regulations.
2. The *Contractor* ensures that at least two of his supervisors are trained and authorised as Authorised Supervisors in terms of the Plant Safety Regulations.
3. Training is provided by Eskom Majuba and is done according to a schedule, thus arrangements need to be made with the Service Manager well in advance. Hourly payment of the contractor’s staff, while attending the course will be for the contractor’s account.
4. At least two supervisors should be authorised within 3 months of contract award.

6.3 People restrictions, hours of work, conduct and records

6.3.1 Time Clocking

- 1 The *Contractor* uses a biometric time clocking system, so that the company is able to keep it's tracking records.

6.3.2 Hours of work

1. Normal working hours is Eskom working hours:
 - a. Monday to Thursday **07:30 - 16:45**
 - b. Fridays 07:30 - 12:30
2. Outage or maintenance opportunities working hours are :
 - a. Monday to Sunday **07:00 - 19:00 or as required by the SOW** (might require 24 hour shifts)
3. Overtime rules are adhered to as determined by the Department of Labour.
4. All Timesheets are to be kept for records purposes i.e. man-hours worked safely etc.
5. Other hours will be determined as per critical path activities during outages and maintenance opportunities.
6. Overtime to be approved by the *Service Manager* or the *Maintenance Supervisor*
7. Daily time sheet must be kept up to date of normal and overtime worked at all times.

6.4 Health and safety facilities on the Affected Property

6.4.1 Waste Disposal:

Refer to the General Works Information

6.4.2 Medical Facilities:

Refer to the General Works Information

6.5 Records of *Contractor's* Equipment

1. The *Contractor* to declare all equipment and tools via a pre-set up list at the main entrance, where removal permit will be issued by Security personnel.
2. *Contractor* need to have a list of inventory of their equipment on site.
3. Proof of site entrance needs to be provided before equipment can be removed from site.
4. The *Contractor* keeps these records. If the records are lost, the Employer does not have the responsibility to issue a gate release permit and the *Contractor* might have to leave the equipment behind on site.

6.7 Equipment provided by the *Employer*

1. Overhead cranes
2. The *Employer* is entitled to withdraw use of the said Equipment, should proper care not be ensured.

6.8 Site Services and Facilities

6.8.1 Provided by the *Employer*

1. Toilets at the four corners of the power station
2. Power points where available own cables to be routed
3. Water points, where available
4. Compressed air (Service air), where available
5. Scaffolding, lagging and cladding removal and installation

6.8.2 Provided by the *Contractor*

1. Containers, for dressing rooms, office and dining.
 - a. Containers to be in an acceptable condition well maintained, no major dents, no rust on exterior walls.
 - b. Floors of containers to be in a good condition, no rust excepted as this poses a safety risk.
 - c. The only acceptable exterior colours allowed are blue, white or grey or any of the corporate Eskom colours (chart can be obtained from the Service Manager)
2. Office furniture, equipment and stationary
3. Tools, equipment and consumables
4. Portable 380V electrical distribution boards, and supply cables to and from the boards for all his power supply requirements to execute the services.
 - a. *Contractors'* Electrical Distribution Boards complies with OHSA as referred to in the Electrical Installation Regulations and the Electrical Machinery Regulations. Each board brought on site has a certificate of compliance issued by an accredited person.
 - b. The *Contractors'* Electrical Distribution Boards must be installed at a time negotiated with the Electrical Maintenance Manager, or prior to the possession date. Distribution boards will be connected to a 380V three-phase AC power supply by the *Employer*, only after the *Contractor* has submitted the valid certificate of compliance.
 - c. All *Contractors'* Electrical Distribution Boards are earthed to the steel structure of the plant.
5. Accommodation
6. Transport
7. Meals. The *Contractor* or any of his employees or subcontractors may buy take away meals from the fast food outlet on site, if available.
8. Telecommunications
9. Everything else necessary for providing the Service.

7 List of drawings

7.1 Drawings issued by the *Employer*

All relevant drawings are available on request from the Majuba Documentation Centre.