

PROJECT : REFURBISHMENT AND REPAIRS OF LV MOTORS MAINTENANCE FOR THE DURATION OF THREE (3) YEARS AT KUSILE POWER STATION - REV 1

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1	ITEM 1 PRELIMINARIES AND GENERAL				
1.1	Safety file	Once Off	1.00		
	Total Item 1 (Preliminaries and General) Carried to Final Summary				
2	ITEM 2 REFURBISHMENT OF ELECTRICAL MOTORS (WORST-CASE SCENARIO)				
2.1	MOTOR SIZES: 0.09-22.5KW				
2.1.1	Collect motor from kusile PS	Km	100.00		
2.1.2	Disassemble, clean and assess complete motor (Assessment form to be developed)	No	684.00		
2.1.3	Assemble motor	No	684.00		
2.1.4	Paint complete motor: EmeraldGrey (G29) on external metal	No	684.00		
2.1.5	Delivery Motor to Kusile PS	Km	100.00		
	External components/parts (Terminal Box as and when required)				
2.1.6	Replace terminal box including box studs, box gaskets and seals	No	684.00		
2.1.7	Replace terminal block and connect windings	No	684.00		
2.1.8	Replace thermistor terminals	No	684.00		
2.1.9	Replace fan	No	684.00		
2.1.10	All seals are to be replaced whenever motor is opened	No	684.00		
2.1.11	Nameplate should be engraved not written, the old plate to remain and not painted	No	684.00		
2.1.12	Replace Cooling Pan key	No	684.00		
2.1.13	Replace Circlip bearing	No	684.00		
2.1.14	Unclog/replace grease nipple	No	684.00		
	Rotor				
2.1.15	Replace rotor	No	684.00		
2.1.16	Replace rotor shaft	No	684.00		
2.1.17	Micro Weld roto Shaft(NDE and DE)	No	684.00		
2.1.18	Eccentricity Test	No	684.00		
2.1.19	Balancing as per (e.g G6.3, G2.5, G1)	No	684.00		
	Stator				
2.1.20	Stator rewind	No	684.00		
2.1.21	Replace stator core	No	684.00		
2.1.22	Unstack and Restack stab core	No	684.00		
2.1.23	Treat and paint with vanish	No	684.00		
2.1.24	Replace thermistor	No	684.00		
	Drive and Shield Non Drive End Shield				
2.1.25	Replace fixing bolts	No	684.00		
2.1.26	Fit DE and NDE with grease nipple	No	684.00		
2.1.27	Replace DE Bearing	No	684.00		
2.1.28	Replace NDE Bearings Space Heater	No	684.00		
2.1.29	Replace the space heater with suitable heat resistance wiring Space	No	684.00		
2.1.30	Refurbishment of the motor terminal box	No	684.00		
2.1.31	Test the space heater operation	No	684.00		
	Electrical tests				
2.1.32	Winding insulation test	No	684.00		
2.1.33	Winding resistance test	No	684.00		
2.1.34	Surge & hi-pot test	No	684.00		
2.1.35	Locked rotor test	No	684.00		
2.1.36	Rotor bars test (Bar - Bar)	No	684.00		
2.1.37	No load test	No	684.00		
2.1.38	Core test	No	684.00		
2.1.39	Resistance test on space heater	No	684.00		
2.2	MOTOR SIZES: 23-45KW				
2.2.1	Collect motor from kusile PS	Km	100.00		
2.2.2	Disassemble, clean and assess complete motor (Assessment form to be developed)	No	226.00		
2.2.3	Assemble motor	No	226.00		
2.2.4	Paint complete motor: EmeraldGrey (G29) on external metal	No	226.00		
2.2.5	Delivery Motor to Kusile PS	Km	100.00		
	External components/parts (Terminal Box as and when required)				
2.2.6	Replace terminal box including box studs, box gaskets and seals	No	226.00		
2.2.7	Replace terminal block and connect windings	No	226.00		
2.2.8	Replace thermistor terminals	No	226.00		
2.2.9	Replace fan	No	226.00		
2.2.10	All seals are to be replaced whenever motor is opened	No	226.00		
2.2.11	Nameplate should be engraved not written, the old plate to remain and not painted	No	226.00		
2.2.12	Replace Cooling Pan key	No	226.00		
2.2.13	Replace Circlip bearing	No	226.00		
2.2.14	Unclog/replace grease nipple	No	226.00		
	Rotor				
2.2.15	Replace rotor	No	226.00		
2.2.16	Replace rotor shaft	No	226.00		
2.2.17	Micro Weld roto Shaft(NDE and DE)	No	226.00		
2.2.18	Eccentricity Test	No	226.00		
2.2.19	Balancing as per (e.g G6.3, G2.5, G1)	No	226.00		
	Stator				
2.2.20	Stator rewind	No	226.00		
2.2.21	Replace stator core	No	226.00		
2.2.22	Unstack and Restack stab core	No	226.00		
2.2.23	Treat and paint with vanish	No	226.00		
2.2.24	Replace thermistor	No	226.00		
	Drive and Shield Non Drive End Shield				
2.2.25	Replace fixing bolts	No	226.00		
2.2.26	Fit DE and NDE with grease nipple	No	226.00		
2.2.27	Replace DE Bearing	No	226.00		
2.2.28	Replace NDE Bearings Space Heater	No	226.00		
2.2.29	Replace the space heater with suitable heat resistance wiring Space	No	226.00		
2.2.30	Refurbishment of the motor terminal box	No	226.00		
2.2.31	Test the space heater operation	No	226.00		
	Electrical tests				
2.2.32	Winding insulation test	No	226.00		
2.2.33	Winding resistance test	No	226.00		
2.2.34	Surge & hi-pot test	No	226.00		
2.2.35	Locked rotor test	No	226.00		

2.2.36	Rotor bars test (Bar - Bar)	No	226.00
2.2.37	No load test	No	226.00
2.2.38	Core test	No	226.00
2.2.39	Resistance test on space heater	No	226.00
2.3	MOTOR SIZES: 46-65KW		
2.3.1	Collect motor from kusile PS	Km	100
2.3.2	Disassemble, clean and assess complete motor (Assessment form to be developed)	No	98.00
2.3.3	Assemble motor	No	98.00
2.3.4	Paint complete motor: EmeraldGrey (G29) on external metal	No	98.00
2.3.5	Delivery Motor to Kusile PS	Km	100.00
	External components/parts (Terminal Box as and when required)		
2.3.6	Replace terminal box including box studs, box gaskets and seals	No	98.00
2.3.7	Replace terminal block and connect windings	No	98.00
2.3.8	Replace thermistor terminals	No	98.00
2.3.9	Replace fan	No	98.00
2.3.10	All seals are to be replaced whenever motor is opened	No	98.00
2.3.11	Nameplate should be engraved not written, the old plate to remain and not painted	No	98.00
2.3.12	Replace Cooling Pan key	No	98.00
2.3.13	Replace Circlip bearing	No	98.00
2.3.14	Unclog/replace grease nipple	No	98.00
	Rotor		
2.3.15	Replace rotor	No	98.00
2.3.16	Replace rotor shaft	No	98.00
2.3.17	Micro Weld roto Shaft(NDE and DE)	No	98.00
2.3.18	Eccentricity Test	No	98.00
2.3.19	Balancing as per (e.g G6.3, G2.5, G1)	No	98.00
	Stator		
2.3.20	Stator rewind	No	98.00
2.3.21	Replace stator core	No	98.00
2.3.22	Unstack and Restack stab core	No	98.00
2.3.23	Treat and paint with vanish	No	98.00
2.3.24	Replace thermistor	No	98.00
	Drive and Shield Non Drive End Shield		
2.3.25	Replace fixing bolts	No	98.00
2.3.26	Fit DE and NDE with grease nipple	No	98.00
2.3.27	Replace DE Bearing	No	98.00
2.3.28	Replace NDE Bearings Space Heater	No	98.00
2.3.29	Replace the space heater with suitable heat resistance wiring Space	No	98.00
2.3.30	Refurbishment of the motor terminal box	No	98.00
2.3.31	Test the space heater operation	No	98.00
	Electrical tests		
2.3.32	Winding insulation test	No	98.00
2.3.33	Winding resistance test	No	98.00
2.3.34	Surge & hi-pot test	No	98.00
2.3.35	Locked rotor test	No	98.00
2.3.36	Rotor bars test (Bar - Bar)	No	98.00
2.3.37	No load test	No	98.00
2.3.38	Core test	No	98.00
2.3.39	Resistance test on space heater	No	98.00
2.4	MOTOR SIZES: 66-90KW		
2.4.1	Collect motor from kusile PS	Km	100
2.4.2	Disassemble, clean and assess complete motor (Assessment form to be developed)	No	90.00
2.4.3	Assemble motor	No	90.00
2.4.4	Paint complete motor: EmeraldGrey (G29) on external metal	No	90.00
2.4.5	Delivery Motor to Kusile PS	Km	100.00
	External components/parts (Terminal Box as and when required)		
2.4.6	Replace terminal box including box studs, box gaskets and seals	No	90.00
2.4.7	Replace terminal block and connect windings	No	90.00
2.4.8	Replace thermistor terminals	No	90.00
2.4.9	Replace fan	No	90.00
2.4.10	All seals are to be replaced whenever motor is opened	No	90.00
2.4.11	Nameplate should be engraved not written, the old plate to remain and not painted	No	90.00
2.4.12	Replace Cooling Pan key	No	90.00
2.4.13	Replace Circlip bearing	No	90.00
2.4.14	Unclog/replace grease nipple	No	90.00
	Rotor		
2.4.15	Replace rotor	No	90.00
2.4.16	Replace rotor shaft	No	90.00
2.4.17	Micro Weld roto Shaft(NDE and DE)	No	90.00
2.4.18	Eccentricity Test	No	90.00
2.4.19	Balancing as per (e.g G6.3, G2.5, G1)	No	90.00
	Stator		
2.4.20	Stator rewind	No	90.00
2.4.21	Replace stator core	No	90.00
2.4.22	Unstack and Restack stab core	No	90.00
2.4.23	Treat and paint with vanish	No	90.00
2.4.24	Replace thermistor	No	90.00
	Drive and Shield Non Drive End Shield		
2.4.25	Replace fixing bolts	No	90.00
2.4.26	Fit DE and NDE with grease nipple	No	90.00
2.4.27	Replace DE Bearing	No	90.00
2.4.28	Replace NDE Bearings Space Heater	No	90.00
2.4.29	Replace the space heater with suitable heat resistance wiring Space	No	90.00
2.4.30	Refurbishment of the motor terminal box	No	90.00
2.4.31	Test the space heater operation	No	90.00
	Electrical tests		
2.4.32	Winding insulation test	No	90.00
2.4.33	Winding resistance test	No	90.00
2.4.34	Surge & hi-pot test	No	90.00
2.4.35	Locked rotor test	No	90.00
2.4.36	Rotor bars test (Bar - Bar)	No	90.00
2.4.37	No load test	No	90.00
2.4.38	Core test	No	90.00
2.4.39	Resistance test on space heater	No	90.00
2.5	MOTOR SIZES: 91-132KW		
2.5.1	Collect motor from kusile PS	Km	100.00
2.5.2	Disassemble, clean and assess complete motor (Assessment form to be developed)	No	35.00
2.5.3	Assemble motor	No	35.00
2.5.4	Paint complete motor: EmeraldGrey (G29) on external metal	No	35.00
2.5.5	Delivery Motor to Kusile PS	Km	100.00
	External components/parts (Terminal Box as and when required)		

2.5.6	Replace terminal box including box studs, box gaskets and seals	No	35.00
2.5.7	Replace terminal block and connect windings	No	35.00
2.5.8	Replace thermistor terminals	No	35.00
2.5.9	Replace fan	No	35.00
2.5.10	All seals are to be replaced whenever motor is opened	No	35.00
2.5.11	Nameplate should be engraved not written, the old plate to remain and not painted	No	35.00
2.5.12	Replace Cooling Pan key	No	35.00
2.5.13	Replace Circlip bearing	No	35.00
2.5.14	Unclog/replace grease nipple	No	35.00
	Rotor		
2.5.15	Replace rotor	No	35.00
2.5.16	Replace rotor shaft	No	35.00
2.5.17	Micro Weld roto Shaft(NDE and DE)	No	35.00
2.5.18	Eccentricity Test	No	35.00
2.5.19	Balancing as per (e.g G6.3, G2.5, G1)	No	35.00
	Stator		
2.5.20	Stator rewind	No	35.00
2.5.21	Replace stator core	No	35.00
2.5.22	Unstack and Restack stator core	No	35.00
2.5.23	Treat and paint with vanish	No	35.00
2.5.24	Replace thermistor	No	35.00
	Drive and Shield Non Drive End Shield		
2.5.25	Replace fixing bolts	No	35.00
2.5.26	Fit DE and NDE with grease nipple	No	35.00
2.5.27	Replace DE Bearing	No	35.00
2.5.28	Replace NDE Bearings Space Heater	No	35.00
2.5.29	Replace the space heater with suitable heat resistance wiring Space	No	35.00
2.5.30	Refurbishment of the motor terminal box	No	35.00
2.5.31	Test the space heater operation	No	35.00
	Electrical tests		
2.5.32	Winding insulation test	No	35.00
2.5.33	Winding resistance test	No	35.00
2.5.34	Surge & hi-pot test	No	35.00
2.5.35	Locked rotor test	No	35.00
2.5.36	Rotor bars test (Bar - Bar)	No	35.00
2.5.37	No load test	No	35.00
2.5.38	Core test	No	35.00
2.5.39	Resistance test on space heater	No	35.00
2.6	MOTOR SIZES: 133-185KW		
2.6.1	Collect motor from kusile PS	Km	100
2.6.2	Disassemble, clean and assess complete motor (Assessment form to be developed)	No	60.00
2.6.3	Assemble motor	No	60.00
2.6.4	Paint complete motor: EmeraldGrey (G29) on external metal	No	60.00
2.6.5	Delivery Motor to Kusile PS	Km	100.00
	External components/parts (Terminal Box as and when required)		
2.6.6	Replace terminal box including box studs, box gaskets and seals	No	60.00
2.6.7	Replace terminal block and connect windings	No	60.00
2.6.8	Replace thermistor terminals	No	60.00
2.6.9	Replace fan	No	60.00
2.6.10	All seals are to be replaced whenever motor is opened	No	60.00
2.6.11	Nameplate should be engraved not written, the old plate to remain and not painted	No	60.00
2.6.12	Replace Cooling Pan key	No	60.00
2.6.13	Replace Circlip bearing	No	60.00
2.6.14	Unclog/replace grease nipple	No	60.00
	Rotor		
2.6.15	Replace rotor	No	60.00
2.6.16	Replace rotor shaft	No	60.00
2.6.17	Micro Weld roto Shaft(NDE and DE)	No	60.00
2.6.18	Eccentricity Test	No	60.00
2.6.19	Balancing as per (e.g G6.3, G2.5, G1)	No	60.00
	Stator		
2.6.20	Stator rewind	No	60.00
2.6.21	Replace stator core	No	60.00
2.6.22	Unstack and Restack stator core	No	60.00
2.6.23	Treat and paint with vanish	No	60.00
2.6.24	Replace thermistor	No	60.00
	Drive and Shield Non Drive End Shield		
2.6.25	Replace fixing bolts	No	60.00
2.6.26	Fit DE and NDE with grease nipple	No	60.00
2.6.27	Replace DE Bearing	No	60.00
2.6.28	Replace NDE Bearings Space Heater	No	60.00
2.6.29	Replace the space heater with suitable heat resistance wiring Space	No	60.00
2.6.30	Refurbishment of the motor terminal box	No	60.00
2.6.31	Test the space heater operation	No	60.00
	Electrical tests		
2.6.32	Winding insulation test	No	60.00
2.6.33	Winding resistance test	No	60.00
2.6.34	Surge & hi-pot test	No	60.00
2.6.35	Locked rotor test	No	60.00
2.6.36	Rotor bars test (Bar - Bar)	No	60.00
2.6.37	No load test	No	60.00
2.6.38	Core test	No	60.00
2.6.39	Resistance test on space heater	No	60.00
2.7	MOTOR SIZES: 188-330KW		
2.7.1	Collect motor from kusile PS	Km	100.00
2.7.2	Disassemble, clean and assess complete motor (Assessment form to be developed)	No	86.00
2.7.3	Assemble motor	No	86.00
2.7.4	Paint complete motor: EmeraldGrey (G29) on external metal	No	86.00
2.7.5	Delivery Motor to Kusile PS	Km	100.00
	External components/parts (Terminal Box as and when required)		
2.7.6	Replace terminal box including box studs, box gaskets and seals	No	86.00
2.7.7	Replace terminal block and connect windings	No	86.00
2.7.8	Replace thermistor terminals	No	86.00
2.7.9	Replace fan	No	86.00
2.7.10	All seals are to be replaced whenever motor is opened	No	86.00
2.7.11	Nameplate should be engraved not written, the old plate to remain and not painted	No	86.00
2.7.12	Replace Cooling Pan key	No	86.00
2.7.13	Replace Circlip bearing	No	86.00
2.7.14	Unclog/replace grease nipple	No	86.00
	Rotor		
2.7.15	Replace rotor	No	86.00
2.7.16	Replace rotor shaft	No	86.00
2.7.17	Micro Weld roto Shaft(NDE and DE)	No	86.00

2.7.18	Eccentncity Test	No	86.00		
2.7.19	Balancing as per (e.g G6.3, G2.5, G1)	No	86.00		
	Stator				
2.7.20	Stator rewind	No	86.00		
2.7.21	Replace stator core	No	86.00		
2.7.22	Unstack and Restack stab core	No	86.00		
2.7.23	Treat and paint with vanish	No	86.00		
2.7.24	Replace thermistor	No	86.00		
	Drive and Shield Non Drive End Shield				
2.7.25	Replace fixing bolts	No	86.00		
2.7.26	Fit DE and NDE with grease nipple	No	86.00		
2.7.27	Replace DE Bearing	No	86.00		
2.7.28	Replace NDE Bearings Space Heater	No	86.00		
2.7.29	Replace the space heater with suitable heat resistance wiring Space	No	86.00		
2.7.30	Refurbishment of the motor terminal box	No	86.00		
2.7.31	Test the space heater operation	No	86.00		
	Electrical tests				
2.7.32	Winding insulation test	No	86.00		
2.7.33	Winding resistance test	No	86.00		
2.7.34	Surge & hi-pot test	No	86.00		
2.7.35	Locked rotor test	No	86.00		
2.7.36	Rotor bars test (Bar - Bar)	No	86.00		
2.7.37	No load test	No	86.00		
2.7.38	Core test	No	86.00		
2.7.39	Resistance test on space heater	No	86.00		
	Total Item 2 (Refurbishment of Motor) Carried to Final Summary				
	<u>FINAL SUMMARY</u>				
ITEM 1	PRELIMINARIES AND GENERAL				
ITEM 2	REFURBISHMENT OF ELECTRICAL MOTORS				
Total Amount (Excl VAT)					