NEC3 Term Service Contract (TSC3)

Between **ESKOM HOLDINGS SOC Ltd**
(Reg No. 2002/015527/30)

and **[Insert at award stage]**
(Reg No. _____)

for **Maintenance and Services of lights, domestics circuits and cables (MV,LV) and Suppling of cables at Kendal Power Station, Issuing of Certificate of Compliance on domestics circuits for the period of 5 years**

CONTRACT No. **[Insert at award stage]**

PART C1: AGREEMENTS & CONTRACT DATA

Contents:		No of pages
C1.1	**Form of Offer and Acceptance**	**[●]**
	[to be inserted from Returnable Documents at award stage]	
C1.2a	**Contract Data provided by the *Employer***	**[●]**
C1.2b	**Contract Data provided by the *Contractor***	**[●]**
	[to be inserted from Returnable Documents at award stage]	
C1.3	**Proforma Guarantees**	**[●]**

C1.1 Form of Offer & Acceptance

Offer

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract for the procurement of:

The maintenance of lights, cables, distribution Boards and domestic circuits at Kendal Power Station for 5 years

The tenderer, identified in the Offer signature block, has examined the documents listed in the Tender Data and addenda thereto and by submitting this Offer has accepted the Conditions of Tender.

By the representative of the tenderer, deemed to be duly authorised, signing this part of this Form of Offer and Acceptance the tenderer offers to perform all of the obligations and liabilities of the *Contractor* under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the *conditions of contract* identified in the Contract Data.

Options A	The offered total of the Prices exclusive of VAT is	**R [●]**
	(in words) **[●]**	

This Offer may be accepted by the Employer by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document including the Schedule of Deviations (if any) to the tenderer before the end of the period of validity stated in the Tender Data, or other period as agreed, whereupon the tenderer becomes the party named as the *Contractor* in the *conditions of contract* identified in the Contract Data.

Signature(s) .....

Name(s) .....

Capacity .....

For the tenderer: .....

(Insert name and address of organisation)

Name & signature of witness .....

Date .....

Tenderer's CIDB registration number: .....

Acceptance

By signing this part of this Form of Offer and Acceptance, the Employer identified below accepts the tenderer's Offer. In consideration thereof, the Employer shall pay the Contractor the amount due in accordance with the *conditions of contract* identified in the Contract Data. Acceptance of the tenderer's Offer shall form an agreement between the Employer and the tenderer upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

The terms of the contract, are contained in:

Part C1	Agreements and Contract Data, (which includes this Form of Offer and Acceptance)
Part C2	Pricing Data
Part C3	Scope of Work: Service Information

and drawings and documents (or parts thereof), which may be incorporated by reference into the above listed Parts.

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Returnable Schedules as well as any changes to the terms of the Offer agreed by the tenderer and the Employer during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Form of Offer and Acceptance. No amendments to or deviations from said documents are valid unless contained in this Schedule.

The tenderer shall within two weeks of receiving a completed copy of this agreement, including the Schedule of Deviations (if any), contact the Employer's agent (whose details are given in the Contract Data) to arrange the delivery of any securities, bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the *conditions of contract* identified in the Contract Data at, or just after, the date this agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

Notwithstanding anything contained herein, this agreement comes into effect on the date when the tenderer receives one fully completed and signed original copy of this document, including the Schedule of Deviations (if any).

Signature(s) .....

Name(s) .....

Capacity .....

for the Employer

.....
(Insert name and address of organisation)

Name & signature of witness .....

Date .....

Note: If a tenderer wishes to submit alternative tenders, use another copy of this Form of Offer and Acceptance.

Schedule of Deviations to be completed by the *Employer* prior to contract award

No.	Subject	Details
1	**[●]**	**[●]**
2	**[●]**	**[●]**
3	**[●]**	**[●]**
4	**[●]**	**[●]**
5	**[●]**	**[●]**
6	**[●]**	**[●]**
7	**[●]**	**[●]**

By the duly authorised representatives signing this Schedule of Deviations below, the Employer and the tenderer agree to and accept this Schedule of Deviations as the only deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Tender Schedules, as well as any confirmation, clarification or changes to the terms of the Offer agreed by the tenderer and the Employer during this process of Offer and Acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the tender documents and the receipt by the tenderer of a completed signed copy of this Form shall have any meaning or effect in the contract between the parties arising from this Agreement.

	For the tenderer:	**For the Employer**
Signature		
Name		
Capacity		
On behalf of	*(Insert name and address of organisation)*	*(Insert name and address of organisation)*
Name & signature of witness		
Date		

C1.2 Contract Data

Part two - Data provided by the *Contractor*

[Instructions to the contract compiler: (delete this notes before issue to tenderers with an enquiry) Whenever a cell is shaded in the left hand column it denotes this data is optional and would be required in relation to the option selected. In the event that the option is not required select and delete the whole row.]

Notes to a tendering contractor:

1. Please read both the both the NEC3 Term Service Contract April 2013 and the relevant parts of its Guidance Notes (TSC3-GN)[1] in order to understand the implications of this Data which the tenderer is required to complete.
2. The number of the clause which requires the data is shown in the left hand column for each statement however other clauses may also use the same data.
3. Where a form field like this [ ] appears, data is required to be inserted relevant to the option selected. Click on the form field ***once*** and type in the data. Otherwise complete by hand and in ink.

Completion of the data in full, according to Options chosen, is essential to create a complete contract.

Clause	Statement	Data
10.1	The *Contractor* is (Name): Address Tel No. Fax No.	
11.2(8)	The *direct fee percentage* is The *subcontracted fee percentage* is	**%** **%**
11.2(14)	The following matters will be included in the Risk Register	
11.2(15)	The Service Information for the *Contractor*'s plan is in:	
21.1	The plan identified in the Contract Data is contained in:	
24.1	The key people are: 1 Name: Job: Responsibilities: Qualifications: Experience:	

[1] Available from Engineering Contract Strategies Tel 011 803 3008 Fax 086 5391902 or www.ecs.co.za

2 Name:

Job

Responsibilities:

Qualifications:

Experience:

CV's (and further key person's data including CVs) are in .

A	**Priced contract with price list**	
11.2(12)	The *price list* is in	
11.2(19)	The tendered total of the Prices is	**R**

PART 2: PRICING DATA

TSC3 Option A

Document reference	Title	No of pages
C2.1	Pricing assumptions: Option A	2
C2.2	The *price list*	**19**

C2.1 Pricing assumptions: Option A

1. How work is priced and assessed for payment

Clause 11 in NEC3 Term Service Contract (TSC3) core clauses and Option A states:

Identified and defined terms 11 11.2

(12) The Price List is the *price list* unless later changed in accordance with this contract.

(17) The Price for Services Provided to Date is the total of

- the Price for each lump sum item in the Price List which the *Contractor* has completed and
- where a quantity is stated for an item in the Price List, an amount calculated by multiplying the quantity which the *Contractor* has completed by the rate.

(19) The Prices are the amounts stated in the Price column of the Price List. Where a quantity is stated for an item in the Price List, the Price is calculated by multiplying the quantity by the rate.

This confirms that Option A is a priced contract where the Prices are derived from a list of items of service which can be priced as lump sums or as expected quantities of service multiplied by a rate or a mix of both.

2. Function of the Price List

Clause 54.1 in Option A states: "Information in the Price List is not Service Information". This confirms that instructions to do work or how it is to be done are not included in the Price List but in the Service Information. This is further confirmed by Clause 20.1 which states, "The *Contractor* Provides the Service in accordance with the Service Information". Hence the *Contractor* does **not** Provide the Service in accordance with the Price List. The Price List is only a pricing document.

3. Link to the *Contractor*'s plan

Clause 21.4 states "The *Contractor* provides information which shows how each item description on the Price List relates to the operations on each plan which he submits for acceptance". Hence when compiling the *price list*, the tendering contractor needs to develop his first clause 21.2 plan in such a way that operations shown on it can be priced in the *price list* and result in a satisfactory cash flow in terms of clause 11.2(17).

4. Preparing the *price list*

Before preparing the *price list*, both the *Employer* and tendering contractors should read the TSC3 Guidance Notes pages 14 and 15. In an Option A contract, either Party may have entered items into the *price list* either as a process of offer and acceptance (tendering) or by negotiation depending on the nature of the *service* to be provided. Alternatively the *Employer*, in his Instructions to Tenderers or in a Tender Schedule, may have listed some items that he requires the *Contractor* to include in the *price list* to be prepared and priced by him.

It is assumed that in preparing or finalising the *price list* the *Contractor:*

- Has taken account of the guidance given in the TSC3 Guidance Notes relevant to Option A;
- Understands the function of the Price List and how work is priced and paid for;
- Is aware of the need to link operations shown in his plan to items shown in the Price List;
- Has listed and priced items in the *price list* which are inclusive of everything necessary and incidental to Providing the Service in accordance with the Service Information, as it was at the time of tender, as well as correct any Defects not caused by an *Employer's* risk;
- Has priced work he decides not to show as a separate item within the Prices or rates of other listed items in order to fulfil the obligation to complete the *service* for the tendered total of the Prices.
- Understands there is no adjustment to items priced as lump sums if the amount, or quantity, of work within that item later turns out to be different to that which the *Contractor* estimated at time of tender. The only basis for a change to the (lump sum) Prices is as a result of a compensation event.

4.1. Format of the *price list*

(From the example given in an Appendix within the TSC3 Guidance Notes)

Entries in the first four columns in the *price list* in section C2.2 are made either by the *Employer* or the tendering contractor.

If the *Contractor* is to be paid an amount for the item which is not adjusted if the quantity of work in the item changes, the tendering contractor enters the amount in the Price column only, the Unit, Expected Quantity and Rate columns being left blank.

If the *Contractor* is to be paid an amount for an item of work which is the rate for the work multiplied by the quantity completed, the tendering contractor enters the rate which is then multiplied by the Expected Quantity to produce the Price, which is also entered.

If the *Contractor* is to be paid a Price for an item proportional to the length of time for which a service is provided, a unit of time is stated in the Unit column and the expected length of time (as a quantity of the stated units of time) is stated in the Expected Quantity column.

C2.2 the *price list*

1.1 Price List

Item nr	Description	Unit	Estimated Quantity	Rate	Price	
	SECTION 1(Preliminary &Generals					
1	Site Establishment	ea.	1			
2	Crane hire (high mast lights repairs) as an required	hourly	4000			
3	Site de-Establishment	ea	1			
4	Thumber (machine for cable fault locator)	hourly	240			
5	Excavator (as an when required for especial trenching of cables	hourly	240			
6.	Drawings shall be submitted in Micro-station Version 8	ea	1000			
7	Disposable of used lights (Certificate of disposal must be provided as per environmental requirement)	monthly	60			
	SECTION NO.2 LABOUR					
	LABOUR (NORMAL HOURS)	Unit	Estimated quantities hour	Normal time Rate per hour	Overtime Saturdays Base Rate per hour X1.5	Overtime Sundays and holidays Base Rate per hour X2
8.	Fixed monthly core crew (breakdown per skill per hour)	monthly	60			
9	Supervisor - (overtime)	hourly	9600			

10	Electrician (with wireman's license) (overtime)	hourly	19200			
11	Semi-Skilled worker - 8 (overtime)	hourly	76800			
12	Assistant - 8 (overtime)	hourly	76800			
	As when required skill must be provided					
13	**Semi-Skilled (2)**	hourly	76800			
14	**Assistant (2)**	hourly	76800			
15	**Back Actor - for digging trenches for hourly rate**	hourly	76800			
Total Rate						

NOTE:

The above mentioned tendered prices are exclusive of Value Added Tax (VAT) and CPA, but inclusive of all costs related to this works

The price/rates are exclusive of VAT, but inclusive of all costs related to this scope of work.

Contractor:

....

PRINT NAME SIGNATURE DATE

1.2. Price List

Supply, Delivery for Maintenance of Cables

Item	Cable Description as per Eskom Cable Code Standard	Conductor area (mm2)	Supply price per meter	Supply Cable Terminations kit	Supply Cable Joint kit	Total price for Supply
11KV Cables-XLPE-Armoured - General PVC Sheathed						
1.	EXE01WCV	500	R	R	R	R
2.	EXE03UCV	300	R	R	R	R
3.	EXE03TCV	240	R	R	R	R
4.	EXE03SCV	185	R	R	R	R
5.	EXE03RCV	150	R	R	R	R
6.	EXE03QCV	120	R	R	R	R
7.	EXE03PCV	95	R	R	R	R
8.	EXE03NCV	70	R	R	R	R
9.	EXE03LCV	35	R	R	R	R
10.	EXE03KCV	25	R	R	R	R
11.	EXE04RCV	150	**R**	**R**	R	R
11KV Cables-XLPE-Armoured - Low Halogen PVC Sheathed						
12.	EXE01WCM	500	**R**	R	R	R
13.	EXE03UCM	300	**R**	R	R	R

14.	EXE03TCM	240	**R**	R	R	R
15.	EXE03SCM	185	**R**	R	R	R
16.	EXE03RCM	150	**R**	R	R	R
17.	EXE03QCM	120	**R**	R	R	R
18.	EXE03PCM	95	**R**	R	R	R
19.	EXE03NCM	70	**R**	R	R	R
20.	EXE03LCM	35	**R**	**R**	R	R
21.	EXE03KCM	25	**R**	**R**	R	R
11KV Cables-XLPE-Unarmoured - General PVC Sheathed						
22.	EXG01WCV	500	**R**	**R**	R	R
23.	EXG03UCV	300	**R**	**R**	R	R
24.	EXG03TCV	240	**R**	**R**	R	R
25.	EXG03SCV	185	**R**	**R**	R	R
26.	EXG03RCV	150	**R**	**R**	R	R
27.	EXG03QCV	120	**R**	**R**	R	R
28.	EXG03PCV	95	**R**	**R**	R	R
29.	EXG03NCV	70	**R**	**R**	R	R
30.	EXG03LCV	35	**R**	**R**	R	R
31.	EXG03KCV	25	**R**	**R**	R	R
11KV Cables-XLPE Unarmoured - Low Halogen PVC Sheathed						
32.	EXG01WCM	500	**R**	**R**	R	R

33.	EXG03UCM	300	**R**	**R**	R	R
34.	EXG03TCM	240	**R**	**R**	R	R
35.	EXG03SCM	185	**R**	**R**	R	R
36.	EXG03RCM	150	**R**	**R**	R	R
37.	EXG03QCM	120	**R**	**R**	R	R
38.	EXG03PCM	95	**R**	**R**	R	R
39.	EXG03NCM	70	**R**	**R**	R	R
40.	EXG03LCM	35	**R**	**R**	R	R
41.	EXG03KCM	25	**R**	**R**	R	R
6.6KV Cables-XLPE- Armoured – General PVC Sheathed						
42.	DXE01WCV	500	**R**	**R**	R	R
43.	DXE03UCV	300 (3 core)	**R**	**R**	R	R
44.	DXE01UCV	300 (1 core)	**R**	**R**	R	R
45.	DXE03TCV	240	**R**	**R**	R	R
46.	DXE03SCV	185	**R**	**R**	R	R
47.	DXE03RCV	150	**R**	**R**	R	R
48.	DXE03QCV	120	**R**	**R**	R	R
49.	DXE03PCV	95	**R**	**R**	R	R
50.	DXE03NCV	70	**R**	**R**	R	R
51.	DXE03LCV	35	**R**	**R**	R	R
52.	DXE03KCV	25	**R**	**R**	R	R

6.6KV Cables-XLPE- Armoured - Low Halogen PVC Sheathed2						
53.	DXE01WCM	500	**R**	**R**	R	R
54.	DXE03UCM	300 (3 core)	**R**	**R**	R	R
55.	DXE01UCM	300 (1 core)	**R**	**R**	R	R
56.	DXE03TCM	240	**R**	**R**	R	R
57.	DXE03SCM	185	**R**	**R**	R	R
58.	DXE03RCM	150	**R**	**R**	R	**R**
59.	DXE03QCM	120	**R**	**R**	R	R
60.	DXE03PCM	95	**R**	**R**	R	R
61.	DXE03NCM	70	**R**	**R**	R	R
62.	DXE03LCM	35	**R**	**R**	R	R
63.	DXE03KCM	25	**R**	**R**	R	R
6.6KV Cables-XLPE- Unarmoured - General PVC Sheathed						
64.	DXG01WCV	500	**R**	**R**	R	R
65.	DXG03UCV	300 (3 core)	**R**	**R**	R	R
66.	DXG01UCV	300 (1 core)	**R**	**R**	R	R
67.	DXG03TCV	240	**R**	**R**	R	R
68.	DXG03SCV	185	**R**	**R**	R	R
69.	DXG03RCV	150	**R**	**R**	R	R
70.	DXG03QCV	120	**R**	**R**	R	R
71.	DXG03PCV	95	**R**	**R**	R	R
72.	DXG03NCV	70	**R**	**R**	R	R

73.	DXG03LCV	35	**R**	**R**	R	R
74.	DXG03KCV	25	**R**	**R**	R	R
6.6KV Cables-XLPE- Unarmoured - Low Halogen PVC Sheathed						
75.	DXG01WCM	500	**R**	**R**	R	R
76.	DXG03UCM	300 (3 core)	**R**	**R**	R	R
77.	DXG01UCM	300 (1 core)				
78.	DXG03TCM	240	**R**	**R**	R	R
79.	DXG03SCM	185	**R**	**R**	R	R
80.	DXG03RCM	150	**R**	**R**	R	R
81.	DXG03QCM	120	**R**	**R**	R	R
82.	DXG03PCM	95	**R**	**R**	R	R
83.	DXG03NCM	70	**R**	**R**	R	R
84.	DXG03LCM	35	**R**	**R**	R	R
85.	DXG03KCM	25	**R**	**R**	R	R

LV Cables- Armoured - Low Halogen PVC Sheathed

86.	BVX01XCM	630	**R**	**R**	R	R
87.	BVX02CCM	1.5	**R**	**R**	R	R
88.	BVX02DCM	2.5	**R**	**R**	R	R
89.	BVX02ECM	4	**R**	**R**	R	R
90.	BVX02FCM	6	**R**	**R**	R	R
91.	BVX02GCM	10	**R**	**R**	R	R
92.	BVX02HCM	16	**R**	**R**	R	R
93.	BVX02LCM	35	**R**	**R**	R	R
94.	BVX02NCM	70	**R**	**R**	R	R
95.	BVX02PCM	95	**R**	**R**	R	R
96.	BVX03BCM	0.75	**R**	**R**	R	R
97.	BVX3CCM	1.5	**R**	**R**	R	R
98.	BVX3DCM	2.5	**R**	**R**	R	R
99.	BVX3ECM	4	**R**	**R**	R	R
100.	BVX3FCM	6	**R**	**R**	R	R
101.	BVX3GCM	10	**R**	**R**	R	R
102.	BVX3HCM	16	**R**	**R**	R	R
103.	BVX3KCM	25	**R**	**R**	R	R
104.	BVX3LCM	35	**R**	**R**	R	R
105.	BVX3MCM	50	**R**	**R**	R	R
106.	BVX3NCM	70	**R**	**R**	R	R
107.	BVX3PCM	95	**R**	**R**	R	R

108.	BVX3QCM	120	**R**	**R**	R	R
109.	BVX3RCM	150	**R**	**R**	R	R
110.	BVX3SCM	185	**R**	**R**	R	R
111.	BVX4DCM	2.5	**R**	**R**	R	R
112.	BVX4ECM	4	**R**	**R**	R	R
113.	BVX4FCM	6	**R**	**R**	R	R
114.	BVX4GCM	10	**R**	**R**	R	R
115.	BVX4HCM	16	**R**	**R**	R	R
116.	BVX4KCM	25	**R**	**R**	R	R
117.	BVX4LCM	35	**R**	**R**	R	R
118.	BVX4MCM	50	**R**	**R**	R	R
119.	BVX4NCM	70	**R**	**R**	R	R
120.	BVX4PCM	95	**R**	**R**	R	R
121.	BVX4QCM	120	**R**	**R**	R	R
122.	BVX4RCM	150	**R**	**R**	R	R
123.	BVX4SCM	185	**R**	**R**	R	R
124.	BVX5KCM	25	**R**	**R**	R	R
125.	BVX5LCM	35	**R**	**R**	R	R
126.	BVX7DCM	2.5	**R**	**R**	R	R
127.	BVX7ECM	4	**R**	**R**	R	R
128.	BVX12DCM	2.5	**R**	**R**	R	R
129.	BVX19DCM	2.5	**R**	**R**	R	R
130.	BVX37DCM	2.5	**R**	**R**	R	R

LV Cables - Unarmoured - Low Halogen PVC Sheathed

131.	BVV1PCM	95	**R**	**R**	R	R
132.	BVV01XCM	630	**R**	**R**	R	R
133.	BVV02ACM	0.5	**R**	**R**	R	R
134.	BVV02CCM	1.5	**R**	**R**	R	R
135.	BVV02DCM	2.5	**R**	**R**	R	R
136.	BVV02ECM	4	**R**	**R**	R	R
137.	BVV02FCM	6	**R**	**R**	R	R
138.	BVV02GCM	10	**R**	**R**	R	R
139.	BVV02HCM	16	**R**	**R**	R	R
140.	BVV02LCM	35	**R**	**R**	R	R
141.	BVV02NCM	70	**R**	**R**	R	R
142.	BVV02PCM	95	**R**	**R**	R	R
143.	BVV03ACM	0.5	**R**	**R**	R	R
144.	BVV03BCM	0.75	**R**	**R**	R	R
145.	BVV03CCM	1.5	**R**	**R**	R	R
146.	BVV03DCM	2.5	**R**	**R**	R	R
147.	BVV03ECM	4	**R**	**R**	R	R
148.	BVV03FCM	6	**R**	**R**	R	R
149.	BVV03GCM	10	**R**	**R**	R	R
150.	BVV03HCM	16	**R**	**R**	R	R
151.	BVV03KCM	25	**R**	**R**	R	R
152.	BVV03LCM	35	**R**	**R**	R	R

153.	BVV03MCM	50	**R**	**R**	R	R
154.	BVV03NCM	70	**R**	**R**	R	R
155.	BVV03PCM	95	**R**	**R**	R	R
156.	BVV03QCM	120	**R**	**R**	R	R
157.	BVV03RCM	150	**R**	**R**	R	R
158.	BVV03SCM	185	**R**	**R**	R	R
159.	BVV04ACM	0.5	**R**	**R**	R	R
160.	BVV04BCM	0.75	**R**	**R**	R	R
161.	BVV04CCM	1.5	**R**	**R**	R	R
162.	BVV04DCM	2.5	**R**	**R**	R	R
163.	BVV04ECM	4	**R**	**R**	R	R
164.	BVV04FCM	6	**R**	**R**	R	R
165.	BVV04GCM	10	**R**	**R**	R	R
166.	BVV04HCM	16	**R**	**R**	R	R
167.	BVV04KCM	25	**R**	**R**	R	R
168.	BVV04LCM	35	**R**	**R**	R	R
169.	BVV04MCM	50	**R**	**R**	R	R
170.	BVV04NCM	70	**R**	**R**	R	R
171.	BVV04PCM	95	**R**	**R**	R	R
172.	BVV04QCM	120	**R**	**R**	R	R
173.	BVV04RCM	150	**R**	**R**	R	R
174.	BVV04SCM	185	**R**	**R**	R	R
175.	BVV07BCM	0.75	**R**	**R**	R	R
176.	BVV07CCM	1.5	**R**	**R**	R	R

177.	BVV07DCM	2.5	**R**	**R**	R	R
178.	BVV12DCM	2.5	**R**	**R**	R	R
179.	BVV12ECM	4	**R**	**R**	R	R
180.	BVV19DCM	2.5	**R**	**R**	R	R
181.	BVV37DCM	2.5	**R**	**R**	R	R
Rubber Trailing Cables						
182.	Texoprene TR66ECC 3X50+ 1X25CC + 2x10P-3,8/6,6 kV	50+25+10	**R**	**R**	R	R
183.	Texoprene TR66ECC 3X70+ 1X35CC + 2x10P-3,8/6,6 kV	50+35+10	**R**	**R**	R	R
184.	Texoprene TR66ECC 3X95+ 1X50CC + 2x10P-3,8/6,6 kV	95+50+10	**R**	**R**	R	R
185.	Texoprene TR66ECC3X50+ 3x10 3,8/6,6 kV	50+10	**R**	**R**	R	R
Earthing						
186.	50.8x6.36MM FLAT ALUM. BAR	N/A	**R**	**R**	R	R
187.	25.4X6.25MM FLAT ALUMINIUM BAR	N/A	**R**	**R**	R	R
188.	50X6MM FLAT COPPER BAR	N/A	**R**	**R**	R	R
189.	50X3MM FLAT COPPER BAR	N/A	**R**	**R**	R	R
190.	40X3MM FLAT COPPER BAR	N/A	**R**	**R**	R	R
191.	25X3MM FLAT COPPER BAR	N/A	**R**	**R**	R	R
192.	KWENA ANTI-THEFT CABLE UN-INSULATED	10	**R**	**R**	R	R

	BRAIDED					
193.	KWENA ANTI-THEFT CABLE UN-INSULATED BRAIDED	16	**R**	**R**	R	R
194.	KWENA ANTI-THEFT CABLE UN-INSULATED BRAIDED	25	**R**	**R**	R	R
195.	KWENA ANTI-THEFT CABLE UN-INSULATED BRAIDED	35	**R**	**R**	R	R
196.	KWENA ANTI-THEFT CABLE UN-INSULATED BRAIDED	50	**R**	**R**	R	R
197.	KWENA ANTI-THEFT CABLE UN-INSULATED BRAIDED	70	**R**	**R**	R	R
198.	KWENA ANTI-THEFT CABLE UN-INSULATED BRAIDED	95	**R**	**R**	R	R
199.	50,8x6,36MM COPPER/ALUMINIUM BIMETALLIC WASHERS (UTECTIC OR CUPRAL)	N/A	**R**	**R**	R	R
200.	25.4X6.25MM COPPER/ALUMINIUM BIMETALLIC WASHERS (UTECTIC OR CUPRAL)	N/A	**R**	**R**	R	R
Unarmoured Screened Instrumentation and Control Cable						
201.	UVG02ACM	0.5	**R**	**R**	R	R
202.	UVG04ACM	0.5	**R**	**R**	R	R

203.	UVG08ACM	0.5	**R**	**R**	R	R
204.	UVG12ACM	0.5	**R**	**R**	R	R
205.	UVG16ACM	0.5	**R**	**R**	R	R
206.	UVG20ACM	0.5	**R**	**R**	R	R
207.	UVG32ACM	0.5	**R**	**R**	R	R
208.	UVG40ACM	0.5	**R**	**R**	R	R
209.	UVG48ACM	0.5	**R**	**R**	R	R
Armoured Screened Instrumentation and Control Cable						
210.	UVX02ACM	0.5	**R**	**R**	R	R
211.	UVX04ACM	0.5	**R**	**R**	R	R
212.	UVX08ACM	0.5	**R**	**R**	R	R
213.	UVX12ACM	0.5	**R**	**R**	R	R
214.	UVX16ACM	0.5	**R**	**R**	R	R
215.	UVX20ACM	0.5	**R**	**R**	R	R
216.	UVX32ACM	0.5	**R**	**R**	R	R
217.	UVX40ACM	0.5	**R**	**R**	R	R
218.	UVX48ACM	0.5	**R**	**R**	R	R
Other Cables						
219.	FIBRE OPTIC SINGLE MODE 24 CORE	N/A	**R**	**R**	R	R
220.	FIBRE OPTIC MULTI MODE 24 CORE	N/A	**R**	**R**	R	R
221.	ETHERNET CAT 5 LAN	N/A	**R**	**R**	R	R

	CABLE					
222.	FLAME SCANNER CABLE COMPLETE : 5 PIN MALE/FEMALE ADAPTER ASSEMBLY WITH TEFLON PIG TAIL		**R**	**R**	R	R
Testing and Certification of Cables						
223.	CABLE FAULT LOCATIONS	**N/A**	**N/A**	**R**		**N/A**
224.	MEGGER TESTING	**N/A**	**N/A**	**R**		**N/A**
225.	PRESSURE TESTING (VLF) up to 25KV	**N/A**	**N/A**	**R**		**N/A**
226.	CERTIFICATE OF COMPLIANCE	**N/A**	**N/A**	**R**		**N/A**

The price/rates are exclusive of VAT, but inclusive of all costs related to this scope of work.

Contractor:

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PRINT NAME SIGNATURE DATE

1.3. Price List

Supply, Delivery for Maintenance and Repairs of Overhead Lines

Item	Description	Price for each	Total price for supply
1	Surge arrestors	R	R
2	Fuse assembly base	R	R
3	Solid links	R	R
4	Mink conductor	R	R
5	Wolf conductor	R	R
6	Chickadee conductor	R	R
7	Chickadee bi metal lugs	R	R
8	Mink bi metal lugs	R	R
9	Wolf bi metal lugs	R	R
10	22KV Post insulators (complete with ties)	R	R
11	22KV Strain insulators (complete with shackle)	R	R
12	11KV Post insulators (complete with ties)	R	R
13	11KV Strain insulators (complete with shackle)	R	R
14	MV Stays (complete)	R	R
15	7,335 earth wire	R	R
16	7,265 earth wire	R	R
17	11 M poles	R	R
18	13 M poles	R	R
19	16 M poles	R	R
20	3,5 M arms	R	R

21	4,5 M arms	R	R
22	Drop out fuses	R	R
23	Vulcanised joints	R	R

The price/rates are exclusive of VAT, but inclusive of all costs related to this scope of work.

Contractor:

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PRINT NAME SIGNATURE DATE

1.4. Price List

Supply, Delivery of Cable Ladders (Galvanised)

Item	Type	Size (mm)	Price for each	Total price for supply
1	Galvanised	Cable Ladder 100X76	R	R
2	Galvanised	Cable Ladder 200X76	R	R
3	Galvanised	Cable Ladder 300X76	R	R
4	Galvanised	Cable Ladder 500X76	R	R
5	Galvanised	Cable Ladder 600X76	R	R

The price/rates are exclusive of VAT, but inclusive of all costs related to this scope of work.

Contractor:

.....	.....	.....
PRINT NAME	SIGNATURE	DATE

1.5. Price List

Supply, Delivery of Cable Trays (Galvanised)

Item	Type	Size (mm)	Price for each	Total price for supply
1	Light Duty	76X76	R	R
2	Light Duty	152X76	R	R
3	Light Duty	228X76	R	R
4	Light Duty	304X76	R	R
5	Light Duty	606X76	R	R
6	Medium Duty	76X76	R	R
7	Medium Duty	152X76	R	R
8	Medium Duty	228X76	R	R
9	Medium Duty	304X76	R	R

10	Medium Duty	606X76	R	R
11	Heavy Duty	76X76	R	R
12	Heavy Duty	152X76	R	R
13	Heavy Duty	228X76	R	R
14	Heavy Duty	304X76	R	R
15	Heavy Duty	606X76	R	R

The price/rates are exclusive of VAT, but inclusive of all costs related to this scope of work.

Contractor:

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PRINT NAME SIGNATURE DATE

1.6. Price List

Supply, Delivery of Conduits (Galvanised)

Item	Type	Size (mm)	Price for each	Total price for supply
1	Conduit Galvanised	20	R	R
2	Conduit Galvanised	25	R	R
3	Conduit Galvanised	32	R	R
4	Conduit Galvanised	40	R	R

5	Conduit Galvanised	50	R	R

The price/rates are exclusive of VAT, but inclusive of all costs related to this scope of work.

Contractor:

.....	.....	.....
PRINT NAME	SIGNATURE	DATE

1.7. Price List

Supply, Delivery of Junction Boxes (IP65) (Powder Coated to G29: Light Grey - SANS 1091)

Item	Type	Size (mm)	Price for each	Total price for supply
1	Stainless Steel	175 X 250 X 170 3CR12 IP65	R	R
2	Stainless Steel	350 X 250 X 170 3CR12 IP65	R	R
3	Stainless Steel	450 X 300 X 220 3CR12 IP65	R	R
4	Stainless Steel	550 X 400 X 270 3CR12 IP65	R	R
5	Stainless Steel	650 X 450 X 270 3CR12 IP65	R	R
6	Stainless Steel	750 X 550 X 270 3CR12 IP65	R	R
7	Stainless Steel	950 X 700 X 270 3CR12 IP65	R	R
8	Stainless Steel	1150 X 850 X 270 3CR12 IP65	R	R
9	Stainless Steel	175 X 250 X 170 4CR12 IP65	R	R
10	Stainless Steel	350 X 250 X 170 4CR12 IP65	R	R
11	Stainless Steel	450 X 300 X 220 4CR12 IP65	R	R
12	Stainless Steel	550 X 400 X 270 4CR12 IP65	R	R

13	Stainless Steel	650 X 450 X 270 4CR12 IP65	R	R
14	Stainless Steel	750 X 550 X 270 4CR12 IP65	R	R
15	Stainless Steel	950 X 700 X 270 4CR12 IP65	R	R
16	Stainless Steel	1150 X 850 X 270 4CR12 IP65	R	R

The price/rates are exclusive of VAT, but inclusive of all costs related to this scope of work.

Contractor:

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PRINT NAME SIGNATURE DATE

1.8. Price List

Supply, Delivery of Junction Boxes (IP67) (Powder Coated to G29: Light Grey - SANS 1091)

Item	Type	Size (mm)	Price for each	Total price for supply
1	Stainless Steel	175 X 250 X 170 3CR12 IP67	R	R
2	Stainless Steel	350 X 250 X 170 3CR12 IP67	R	R
3	Stainless Steel	450 X 300 X 220 3CR12 IP67	R	R
4	Stainless Steel	550 X 400 X 270 3CR12 IP67	R	R
5	Stainless Steel	650 X 450 X 270 3CR12 IP67	R	R
6	Stainless Steel	750 X 550 X 270 3CR12 IP67	R	R
7	Stainless Steel	950 X 700 X 270 3CR12 IP67	R	R

8	Stainless Steel	1150 X 850 X 270 3CR12 IP67	R	R
9	Stainless Steel	175 X 250 X 170 4CR12 IP67	R	R
10	Stainless Steel	350 X 250 X 170 4CR12 IP67	R	R
11	Stainless Steel	450 X 300 X 220 4CR12 IP67	R	R
12	Stainless Steel	550 X 400 X 270 4CR12 IP67	R	R
13	Stainless Steel	650 X 450 X 270 4CR12 IP67	R	R
14	Stainless Steel	750 X 550 X 270 4CR12 IP67	R	R
15	Stainless Steel	950 X 700 X 270 4CR12 IP67	R	R
16	Stainless Steel	1150 X 850 X 270 4CR12 IP67	R	R

The price/rates are exclusive of VAT, but inclusive of all costs related to this scope of work.

Contractor:

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PRINT NAME SIGNATURE DATE

1.9. Price List

Supply, Delivery of Cable Trunking and Power Skirting:

Item	Type	Description	Price for each	Total price for supply
1	Galvanised	Cable trunking 76X76 mm	R	R
2	Galvanised	Cable trunking 150X76 mm	R	R
3	Galvanised	Power skirting P801	R	R

4	Galvanised	Power skirting P802	R	R
5	Galvanised	Power skirting P803	R	R
6	Galvanised	Power skirting P804	R	R
7	PVC	Power skirting P801	R	R
8	PVC	Power skirting P802	R	R
9	PVC	Power skirting P803	R	R
10	PVC	Power skirting P804	R	R
11	Galvanised	P1000 channel combinations galvanized unistrut.	R	R
12	Galvanised	P1000 41X41 galvanized unistrut	R	R

The price/rates are exclusive of VAT, but inclusive of all costs related to this scope of work.

Contractor:

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PRINT NAME SIGNATURE DATE

1.10. Price List

Supply, Delivery of the following:

Item	Description	Price for each	Total price for supply
1.	Route markers as used at Kendal Power Station	R	R
2	Vermin proofing of cable entry into electrical switch boards (0,5 x 0,5 x 0.5)	R	R

3	Excavations and back filling for cable installation on site	R	R
4. 5.	Welding socket 63A Earth bar 50mmX6mm	R R	R R
6.	Earth bar 25mmX6mm	R	R
7	Neutral bar 50mmX6mm	R	R
8.	Neutral bar 25mmX6mm	R	R

The price/rates are exclusive of VAT, but inclusive of all costs related to this scope of work.

Contractor:

.....	.....	.....
PRINT NAME	SIGNATURE	DATE

PART 3: SCOPE OF WORK

Document reference	Title	No of pages
	This cover page	1
C3.1	*Employer*'s Service Information	37
C3.2	*Contractor*'s Service Information	
	Total number of pages	37

C3.1: EMPLOYER'S SERVICE INFORMATION

Contents

1 Description of the *service*

1.1 Executive overview

Kendal Power Station uses different types of luminaires and lighting systems around the power station to provide safe lighting for personnel and plant operations. These lights and associated electrical installations form part of the lighting system at Kendal PS. The system was installed when the station was built and commissioned between 1988 – 1993. The lights are connected to lighting distribution boards at various locations across the station. Over the years, the lighting system, distribution boards and associated power cabling have deteriorated with respect to lack of spares, irregular modifications, and a lack of maintaining a design base, in compliance to the OHS act regulations and SANS standards.

The scope of the respective contract, intends to correct this position, repair all electrical components of the lighting system throughout the power station, maintain a up to date design base, and comply with the latest amendments of the OHS act regulations and respective SANS standards, for a contract period of five (5) years.

In addition, the contract will include requirements to provide services for all LV and MV power cabling at Kendal Power station, when required. These services include cable laying, cable installation, accessories installation, jointing, terminating, earthing, testing, commissioning, fault location and certification.

1.2 *Employer*'s requirements for the *service*

1.2.1 Maintenance of lighting electrical installations and domestic circuits

A) The maintenance of lighting electrical installations and domestic circuits at Kendal Power Station in compliance to Occupational Health and Safety Act and regulations (85 of 1993).

B) The *Contractor* develops quality control plans for all scope of works, to be accepted by the *Service Manager* or delegated representative.

C) The Contractor executes all scope of works, in accordance with 36-681 Eskom Generation Plant Safety Regulations.

1.2.1.1 Maintenance of distribution boards and domestic circuits

The *Contractor* performs the following scope for maintenance of distribution boards and domestic circuits as listed in APPENDIX A, and must cater for 10% missed or future distribution boards and domestic circuits:

a) Develops an inspection schedule for the distribution board's location areas across the Power Station, and provides to the *Service Manager* for acceptance, after one month of contract award.

b) Develops a database for the respective DB's and domestic circuits, which includes, but is not limited to, location, KKS codes, respective loads, installed equipment descriptions, maintenance / service history records and revision history.

c) Develops new layout drawings or redlines drawings issued by the *Employer* (under a rate price schedule).

d) Executes all work according to the planned maintenance schedules, supplied by the *Employer*, for the respective distribution boards, throughout the contract period.

e) Develops a monthly report on components, labels and stickers required, for following month, during the contract period.

f) Inspects and cleans the distribution board(s).

g) Treats the distribution board(s) for moisture ingress and corrosion.

h) Checks all connections with insulated tools for overheating/loose connections and repairs as required.

i) Verifies the existing electrical installation and installed components, by calculation, in terms of distribution board designed loads and installed capacity, in accordance to SANS 10142-1. This includes all load distribution equipment within the DB and the respective power cables to and from the DB.

j) Ensures the load distribution is phase balanced for multiphase supplies.

k) Submits any design change to the *Service Manager*, or delegated representative for approval and updates the respective database(s).

l) Ensures tightness of earthing and bonding connections.

m) Provides new proposals to *Service Manager* or delegated representative for acceptance, where earthing and bonding connections are missing and repairs accordingly.

n) Checks, replaces and reports to the *Service Manager* damages to panel components.

o) Checks, replaces and reports to the *Service Manager* damaged or missing door seals.

p) Checks, replaces and reports to the *Service Manager* damaged or missing door handles.

q) Checks, replaces and reports to the *Service Manager* damaged or missing padlocks.

r) The *Employer* supplies all electrical components, labels and stickers to execute the distribution boards and domestic circuit's scope, as per the planned maintenance schedule.

s) Conducts final inspections to determine if all components are in place, bolts and screws tightened, panels secured and the area is clean from all debris.

t) Ensures DB internal component covers are secured with all fasten screws or bolts.

u) Ensures all components are secured, accessible and intact.

v) Ensures all cable and wire trunking are secured and covered.

w) Ensures all components are labelled and KKS coded in accordance to the Kendal Configuration Management Plan. The KKS codes are supplied by the *Employer* or delegated representative.

x) Issues a certificate of compliance and test report, by a registered person for an electrical installation, in accordance to SANS 10142-1 for the respective distribution boards and domestic circuits.

1.2.1.2 Maintenance of lights and luminaires

The *Contractor* performs the following scope for maintenance of lights and luminaires:

a) Develops an inspection schedule for different location areas across the Power Station, and provides to the *Service Manager* for acceptance, after one month of contract award.

b) Develops a database for the respective lights and luminaires used throughout the power station.

c) Executes all work according to the planned maintenance schedules, supplied by the *Employer*, throughout the contract period.

d) Performs plant inspections on lights and emergency lighting, and repairs as per the planned maintenance schedule.

e) Repairs defective lights, emergency lighting and or associated electrical installation components.

f) Performs plant inspections on wire ways and trunkings for missing covers or damages and repairs, as per the planned maintenance schedule.

g) Replaces or repairs defective lighting circuit wiring.

h) Ensures lighting circuits are phase balanced.

i) Performs inspections and repairs on High Mast lights and poles, as per the planned maintenance schedule.

j) Performs inspections and repairs on all security fence lights, as per the planned maintenance schedule.

k) Performs inspections and repairs on all Aircraft lights, as per the planned maintenance schedule.

l) Performs inspections and repairs on all office buildings lights and associated electrical installations, as per the planned maintenance schedule.

m) Cleans light covers and diffusers as per the planned maintenance schedules.

n) Performs tests, measurements and reports on illumination levels, in accordance with SANS10114-1, SANS10114-2, SANS10389-1 and SANS10389-2 for Interior and Exterior lighting respectively, as per the planned maintenance schedule.

o) The *Employer* supplies all lights and luminaires to execute the maintenance scope, as per the planned maintenance schedule.

p) Performs lighting simulations for inadequate illumination level areas, as requested by the *Service Manager* or delegated representative. Lighting simulations to be done in licenced Relux software (version 2016) or higher and electronic native files to be approved by the *Employer*.

q) Disposes of globes and luminaires as and when required and issues a certificate of disposal, as per the *Employer's* procedure.

r) The *Contractor* outsources a mobile crane or boom lift as and when required. The crane or boom lift must be able to reach all of Kendal Power Station's High Mast Lights (See Appendix A., Table 10).

s) The *Contractor* adheres to all OHS Act Regulations and South African standards with regards to the transport, operation, storage of the mobile crane or boom lift. The operator shall be registered with valid authorisation and permits, in order to use the specialised equipment, to execute the *works*.

1.2.1.3 Maintenance of Earth Leakages and socket outlets

The *Contractor* performs the following scope for maintenance of Earth Leakages and socket outlets:

a) Develops an inspection schedule for different location areas across the Power Station, and provides to the *Service Manager* for acceptance, after one month of contract award.

b) Develops a database for the respective earth leakages and socket outlets, used throughout the power station.

c) Executes all work according to the planned maintenance schedules, supplied by the *Employer*, throughout the contract period.

d) Checks the polarity of all the socket outlets in the circuits supplied from each earth leakage unit.

e) Reports to the *Employer*, or delegated representative and repairs all defective Earth Leakage units.

f) Replaces all defective Earth Leakage units, as accepted by the *Service Manager*.

g) Replaces defective and damaged socket outlets.

h) Replaces or repairs defective socket outlets circuit wiring.

i) Issues a certificate of compliance and test report, by a registered person for an electrical installation, in accordance to SANS 10142-1 for the respective earth leakage and socket outlets.

j) The *Employer* supplies all electrical components, labels and stickers to execute the earth leakages and socket outlets scope, as per the planned maintenance schedule.

1.2.1.4 Testing

The following tests and inspections, but not limited to, are required for lighting electrical installations and domestic circuits:

a) Test continuity of bonding conductors.
b) Test resistance of earth continuity conductor.
c) Test earth fault loop impedance at main switch.
d) Test continuity of ring circuit.
e) Test prospective short-circuit current (PSCC) at point of control.
f) Elevated voltage between incoming neutral and external earth (ground).
g) Earth resistance in accordance to SANS 10199
h) Insulation resistance test.
i) Voltage at main DB with no load test for each phase to neutral.
j) Voltage at main DB with load for each phase to neutral.
k) Voltage at available load for each phase to neutral.
l) Test operation of all earth leakage units on each DB.
m) Test operation of all earth leakage buttons on each DB. Test polarity of all points of consumption.
n) Test phase rotation at all points of consumption for welding sockets.
o) Test all switching devices, make-and-break circuits.

1.2.2 Maintenance of Cables

The *Contractor* performs the following scope for maintenance of cables and accessories as and when required by the *Employer*:

a) The works is for the procurement, supply, delivery, storage, installation, jointing, termination, testing, tracing, commissioning & de-commissioning of power, control and telecommunications cables, cable accessories, cable joints, cable terminations, cable racks, cable trunkings, DIN-RAIL, conduits, trenching, cable route markers, earthing on “as and when required basis” at Kendal Power Station.
b) The works includes replacement and repairs of aerial bundled conductors and accessories on the 11kV and 22KV overhead lines, as per Eskom standards and procedures on an “as and when required basis” at Kendal Power Station. The *Contractor* sub contracts for this requirement, if there is no expertise within his or her employment structure.
c) This service shall include when applicable, routine maintenance, repairs, structural repairs, inspections & cleaning, support services, emergency breakdown services, statutory inspections and defect correction during normal and abnormal condition or operation, to ensure the integrity of the installed cabling system and power circuits at Kendal Power Station.
d) All cables, cable accessories, cable joints, terminations and cable racks shall be supplied and installed in accordance with the Eskom Standard - 240-56227443: Requirements for Control and Power Cables for Power Stations Standard.
e) The *Contractor* provides all services, tools, specialized tools, machinery and equipment, specialized personnel for cable jointing, and all associated maintenance services to accomplish and execute the requirements of the scope.
f) The Services are performed on existing, and new installations and complies with good engineering and maintenance practices and standards for Power Stations and conforms to South African National Standards, legal, environmental and Eskom specifications, procedures, standards and conditions prevailing at the site.
g) The *Contractor* is expected to be involved with any maintenance plan activities within the scope of this contract. This includes identification and management of spares.

h) The *Contractor* shall perform cable repairs on an “as and when required” basis at Kendal Power Station.

i) Any cable more than 10m long that is decommissioned by the *Contractor* must be communicated to the *Service Manager* or delegated representative to obtain information about storage or disposal of the respective cable.

j) The *Contractor* performs switchgear cable terminations moves from one electrical board to another, when required by the *Employer*.

k) The *Contractor* shall maintain and issue all legal required test certification, as per SANS 10198-13 to ensure compliance for the respective cable scope performed.

l) The *Contractor* shall perform fault-finding and testing of MV / LV cables, in accordance with SANS 10198-13.

m) The *Contractor* investigates, identifies and reports potential plant failures.

n) The *Contractor* recommends actions, modifications, and system design changes.

o) The *Contractor* shall participate in investigations as and when required.

p) The *Contractor* shall compile drawings where necessary and these shall be in accordance with Eskom requirements. Drawings shall be submitted in Micro-station Version 8 unless stated otherwise.

q) The *Contractor* ensures that the required excavation permits and drawings (cable routes) are obtained from *Service Manager* prior to any excavation activities commencement.

r) The *Contractor* provides all necessary tools and equipment to enable and ensure quick response on fault finding, and maintenance of all cables.

1.2.3 Scope Deliverables

The following deliverables are required as per the Configuration Management requirements, during the Contract period:

a) Inspection Schedules and Plans

b) Electrical Installation databases

c) Electrical distribution board layout drawings

d) Distribution board wiring diagrams

e) Lighting layout drawings

f) Load schedules

g) Lighting Illumination level reports or records

h) Lighting Simulations native files (when required)

i) Cable Manufacturing and Testing Certification

1.3 Interpretation and terminology

1.3.1 Definitions

Term	Definition
Glare	Relates to a harsh uncomfortably, very brilliant light

Term	Definition
Illuminance	Illuminance is the total luminous flux incident on a surface, per unit area. It is a measure of the intensity of the incident light, wavelength-weighted by the luminosity function to correlate with human brightness perception. The SI unit for illuminance is Lux.
Low voltage	Voltage that does not exceed 1000V a.c or 1500V d.c, including Extra Low Voltage
Lumen	The lumen (lm) is the measure of the total "amount" of visible light emitted by a source.
Luminaire	A luminaire is an electrical device used to create artificial light by utilising an electric lamp.
Luminance	Luminance is a photometric measure of the luminous intensity per unit area of light travelling in a given direction. The SI unit for luminance is candela per square meter (cd/m2).
Luminous flux	Luminous flux is the measure of the perceived power of light. The SI unit of luminous flux is the lumen (lm).
Lux	Lumens per square meter (Lux = (lm/m²))
Maintenance function	Maintenance is the function of restoring failed/worn components to a state where it is capable of meeting its design intent and performance expectations, by repair or rework achieved through the application of material and human resources in an efficient and cost effective manner
Medium voltage	Voltage above 1000V a.c up to and including 52kV a.c

1.3.2 Abbreviations

Abbreviation	Explanation
CDSS	Contractor Document Submission Schedule
CoC	Certificate of Compliance
ISO	International Organization for Standardization
IE	Installation Electrician
LV	Low Voltage
LED	Light Emitting Diode
LMI	Lifting Machinery Inspector
HML	High Mast Light
HPS	High Pressure Sodium
MIE	Master Installation Electrician
MV	Medium Voltage
NEC	New Engineering Contract
SANS	South African National Standards
SOW	Scope Of Work
OSH Act	Occupational Health and Safety Act
ORHVS	Operating Regulation for High Voltage System
PD	Partial Discharge
PSR	Plant Safety Regulations
TSC	Term Service Contract

1.3.3 Reference Documents

[1].	Eskom	Procedure	QM-58	Supplier Contract Quality Requirements Specification
[2].	Eskom	Policy	32-727	Safety, Health, Environmental and Quality Policy
[3].	Eskom	Policy	37(2)	SHE Agreement
[4].	Eskom	Policy	ESKASAAA	Approval of personnel performing quality related special processes on all Eskom plant
[5].	Eskom	Policy	ESKPVAAD0	The approval of NDT personnel employed on Eskom plant
[6].	Kendal Power Station	Procedure	1024102	Environmental Management System: Waste Management Procedure
[7].	Eskom - Generation	Procedure	OPS 3450/17-2	Standard Specification for Quality Assurance, Quality Control and Inspection Requirement
[8].	Eskom - Generation	Procedure	OPS 3450/17-2	Standard Specification for Quality Assurance, Quality Control and Inspection Requirement
[9].	Kendal Power Station	Procedure	1018300	Hazardous substance procedure
[10].	Kendal Power Station	Procedure	1015702	Emergency preparedness plan
[11].	Kendal Power Station	Procedure	1015693	Environmental Management System:
				Competence, Training & Awareness
[12].	Eskom	Work Instruction	1017357	Non-Conformance, Corrective and Improvement
[13].	Occupational Health and Safety Act and Regulations (85 of 1993)			
[14].	ISO 9001 Quality Management Systems			
[15].	IS0 14001 Safety Management Systems			
[16].	Eskom	Standard	240-56356396	Earthing and Lightning Protection Standard
[17].	Eskom	Standard	240-56355815	Field Instrument Installation Standard: Junction Boxes and Cable Termination
[18].	NRS 028:1991 Cable lugs and ferrules for copper and aluminium conductors			
[19].	Eskom	Work Instruction	1017822	Functional Location KKS Coding and Labelling
[20].	SANS 1091 National Colours Standard			
[21].	NRS 089-5-1:2016 Maintenance of Electricity Networks Part 5: Street Lighting and High Masts			
[22].	SANS 10142-1: The wiring of premises, Part 1: Low-voltage installations			
[23].	SANS 10114-1: Interior lighting, Part 1: Artificial lighting of interiors			
[24].	SANS 10114-2: Interior lighting, Part 2: Emergency lighting			
[25].	SANS 10389-1: Exterior lighting, Part 1: Artificial lighting of exterior areas for work and safety			

[26].	SANS 62305: Protection against lightning			
[27].	Eskom	Standard	36-681	Generation Plant Safety Regulations
[28].	Eskom	Standard	240-55714363	Coal Fired Power Stations Lighting and Small Power Installation Standard
[29].	ISO 10007 Guidelines for Configuration Management			
[30].	Eskom	Standard	240-56227443	Requirements for Control and Power Cables for Power Station Standard
[31].	Eskom	Plan	1036668	Kendal configuration management plan

2 Management strategy and start up.

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

The *Contracto*r will submit a plan to the *Service Manager* for acceptance for the execution of scope of work throughout the service period. This includes the continuity of the service during after normal work hours.

2.2 Management meetings

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:**
Kick of meeting	Minimum within 1 week after start date	Kendal Power Station, Boardroom TBA	*Service* Manager, *Contractor* and Supervisors
Daily Planning Meeting	Daily at 08:00am	EMD Boardroom	Contractor Supervisor
Weekly Planning Meeting	Weekly: TBA	EMD Boardroom	Contractor and Service supervisor/ Planner
Daily Safety Toolbox Talks	Daily before work starts on site with signed attendance registers by *Contractor's* employees and signed off minutes by the Contractor's Site Manager	Contractors Yard	*Contractor* and his/her employees
Overall contract assessment/progress and feedback monthly meeting	Monthly between 20th-25th at 10:00	EMD Boardroom	*Service Manager* and *Contractor*
Risk register meeting	As and when required meeting	*Service Manager's* office	*Service Manager* and *Contractor*
Work Stoppage	As and when required meeting	EMD Boardroom	*Service Manager* and *Contractor*

If the *Contractor* can't attend any meeting, his/her feedback should be formally communicated through to the *Service Manager.*

Meetings of a specialist nature may be convened as specified elsewhere in this Service Information or if not so specified by persons and at times and locations to suit the Parties, the nature and the progress of the *service*. Records of these meetings shall be submitted to the *Service Manager* by the person convening the meeting within five days of the meeting.

All meetings shall be recorded using minutes or a register prepared and circulated by the person who convened the meeting. Such minutes or register shall not be used for the purpose of 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.

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

2.3.1 The key persons

Roles and responsibilities requirements for the *Contractor's* key people required to render the service:

Table 1: *Contractor*'s Personnel

	Site Core Crew				Temporary team as and when required			
Designation	**Supervisor**	**Installation Electrician**	**Semi-Skilled**	**Electrical Assistant**	**Master Installation Electrician**	**Installation Electrician**	**Semi-Skilled**	**Electrical Assistant**
Number of	X1	x 2	x 8	X8	x 1	X1	x 4	X4
Special requirement	Full-time on site	Full-time on site	Full-time on site	Full-time on site	As and when required for all shifts	As and when required for all shifts	As and when required for all shifts	As and when required for all shifts
Qualifications	National Diploma (Technical), Supervisory training	N4 Electrical / NQF Equivalent, Electrical trade test, Wireman's license	N3 Electrical / NQF Equivalent	Matric/ NQF Equivalent	N4 Electrical / NQF Equivalent, Electrical trade test, MIE Certificate, Certified Installation Electrician	N4 Electrical / NQF Equivalent, Electrical trade test, Wireman's license	N3 Electrical / NQF Equivalent	Matric/ NQF Equivalent
Experience	Minimum of 3 years of Related Experience	Minimum of 3 years of Related Experience	Minimum of 3 years of Related Experience	Minimum of 3 years of Electrical Related Experience	Minimum of 10 years of Related Experience	Minimum of 3 years of Related Experience	Minimum of 3 years of Related Experience	Minimum of 3 years of Electrical Related Experience

2.3.2 Strike and Industrial Action

The *Contractor* ensures that the contracted service is performed regardless of strike and industrial action.

2.3.3 Police clearance

A) All *Contractor* personnel to undertake Police clearance. Certificates to be provided to the services manager before work commence.
B) 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 Kendal Power Station.
C) The following website can be used to guide the process. http://www.saps.gov.za/services/applying_clearance_certificate.php

2.3.4 Accommodation

No accommodation will be provided by the *Employer* for the *Contractor*'s employees and all costs for such accommodation must be borne by the *Contractor***.**

2.4 Provision of bonds and guarantees

Not Applicable

2.5 Documentation control

2.5.1 Procedures, Records and Reports

1. Document management control will be handled as per the *Employer*'s document and records management procedure 32-6, 32-1 and 32-21 which is obtainable from the *Service Manager*. All communication will be in writing.

2. All NEC standard forms should be used, e.g. Task orders, Early Warnings, Defect certificates and Assessments.
3. The *Contractor* must develop a monthly report as per the *Employer and Contractor* agreement (Report covers the following: Safety, Resources, Attendance, Spares, Schedule and Breakdown Report etc.)

The *Contractor* implements the following procedures or paperwork over the first month of this Contract:

a) Business Organization Chart
b) Safety procedures
c) The Contractor must at all times comply with following policies, procedures and specifications:
d) Kendal Site Regulations
e) Eskom construction for Safety health and environmental procedure 32-136 (available on request)
f) Vehicle Safety Procedure
g) Occupational Health and Safety Act and Construction Regulation
h) Eskom life-saving rule procedure 240-62196227
i) Kendal safety Risk Management Procedure Manual for Contracts 1015696
j) Compensation for occupational injuries and diseases Act
k) Eskom SHEQ Policy 32-727
l) Eskom incident management procedure 32-95
m) Vehicle and driver safety management procedure 32-93
n) Work at heights procedure 32-418
o) Eskom vehicle safety spec 32-345
p) Hazard Identification and risk assessment Procedure 32-520
q) Eskom Supplier Quality Management Specification QM 58 - 240-105658000
r) All Relevant Kendal Power Station standards, policies and procedures

2.5.2 **Record Book – Contractor Onsite Stores**

The *Contractor* will keep a record book for all cable stock and accessories in his/her stores. All scrap cables or materials to be recorded. This record book will be kept by the *employer* service supervisor.

2.6 Invoicing and payment

The Z clauses make reference to invoicing procedures stated here in this Service Information. Also include a list of information which is to be shown on an invoice.

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
Eskom Holdings Ltd – Finance Department
Kendal Power Station
Private Bag X7272
Emalahleni
1035

And include on each invoice the following information:

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

All invoices are to be submitted to the Eskom – Finance Department
Payment will be made electronically 30 days after assessment and receipt of a valid invoice.
If Cost Price Adjustment implementation (CPA) is applicable, the *Service Manager* and the *Contractor* must confirm the increase/decrease with the QS (Quantity Survey) department BEFORE the revised prices are stated on the Invoice. The QS and *Service manager* must confirm the escalation with the Financial Department before it may be implemented.

2.6.1 Invoice price versus order price

It is important that the value stated on the Invoice must be the same as the value stated on the Task Order and contract. If the Invoice value is different from the Order or contract, payment of the invoice will be delayed. It is strongly recommended that if there are any discrepancies on the Invoice, it be rectified with the *Employer* and *Contractor* before it is submitted for payment.

2.7 Contract change management

a) The *Service Manager* issues a Task Order to the Contractor to authorise the execution of work.
b) In the event 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.
c) If agreed the *Service Manager* issued a revised Task Order or additional Task Order.
d) The Task Order is signed by both the *Service manager* and the Contractor before work commences.

2.8 Records of Defined Cost to be kept by the *Contractor*

In order to substantiate the Defined Cost of compensation events, the *Employer* shall require the Contractor to keep records of amounts paid by him for people employed by the Contractor, Plant and Materials, work subcontracted by the Contractor and Equipment.
The Contractor shall complete the site daily log and this will be submitted to the *Service Manager* for his/her signature. The Friday and weekend logs will be submitted before 12am Mondays. The log will include but not be limited to the following:

a) Date and day.
b) Site Conditions.
c) Work Done.
d) Labour on site.
e) Any incidents during that period.
f) Any communication that took place.

2.9 Insurance provided by the *Contractor*

The contractor shall be reliable for his/her own insurance to insure all his/her non-critical and critical spares.

2.10 Training workshops and technology transfer

a) Provide on job training during HV and MV joints, Fault analysis, Overhead line repairs and Electrical Installation Tests for COC certification.

2.11 Design and supply of Equipment

Not Applicable

2.12 Things provided at the end of the *service period* for the *Employer*'s use

2.12.1 All leftover material (cables, cable accessories, etc.) purchased during the contract that is kept in the contractor stores.

2.12.2 Contract Deliverables

The following deliverables are required as per the Configuration Management requirements, during the Contract period:

a) Inspection Schedules and Plans
b) Electrical Installation databases
c) Electrical distribution board layout drawings
d) Distribution board wiring diagrams
e) Lighting layout drawings
f) Load schedules
g) Lighting Illumination level reports or records
h) Lighting Simulations native files (when required)
i) Cable Manufacturing and Testing Certification

2.13 Management of work done by Task Order

a) Task Orders will be issued monthly for lighting and domestic circuit's maintenance.
b) All Task orders will be issued by the *Employer* to the *Contractor* for all as and when required work.
c) A Task order is the instruction to commence work.
d) The Task Order includes the scope of work for the as and when required work.
e) No work shall commence until a Task Order is issued and has been finalised, accepted and signed by both the *Employer* and *Contractor.*
f) All work will be issued on a Task Order system. The Work Order and Purchase Order will be created via the SAP PM system.
g) Task Orders are issued for all activities. Assessment of work will be conducted after work complete. Proof for assessments to be supplied to the *Service Manager.*
h) After normal working hours the *Employer* will issue a verbal or telephonic instruction to the *Contractor* to commence with the work and the task order will be created on the next business day.

2.14 The low service damages will be applicable due to the following points:

a) PM Compliance: The *Contractor* is to ensure that his/her monthly PM compliance on lighting and domestic circuits PMs is 100% compliant. If the *Contractor* does not achieve 100% PM compliance, the *Contractor* will be penalised 5% of the monthly core crew fee.
b) Call out response time has to be one hour from the time of the call out for the *Contractor* to be on site at Kendal Power Station. R5000 penalty will apply if the *Contractor* is not on site at Kendal within one hour.
c) Turnaround time on breakdowns: *Contractor* to submit detailed repair plan within an hour of identifying the cause of the breakdown. If the *Contractor* does not complete the breakdown as agreed between the *Employer* and the *Contractor*, 5% penalty of the total value of the Task order raised will apply if the *Contractor* did not complete the repair plan as agreed.

d) Response to Defect Notification: *Contractor* has to comply with the Routine Works Management Procedure 240-44974011. If the *Contractor* does not comply with the Routine Works Management Procedure, the *Contractor* will be penalised 5% of the monthly core crew fee.
e) Response to early warning: Contractor has to respond within 2 days.
f) If the *Contractor* monthly report is not received by the *Employer* before the assessment date off the month, R5000 damage will apply for that particular month.
g) The *Contractor* must ensure that there are always 100% of his/her resource is on site unless his/her *employee* is on leave. The *contractor* must ensure his/her resource availability must be at minimum 90%. Failure to do so will result in damages of 10% of the monthly core crew fee.

3 Health and safety, the environment and quality assurance

3.1 Health and safety risk management

3.1.1 General

The *Contractor* must ensure that all his/her personnel attend a Health and Safety Induction Course prior to starting with their work. The Induction Course, on request, will be provided by the *Employer* and will be valid for one year and needs to be renewed yearly.
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.
The *Service Manager* 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 *Service Manager* is entitled to cause the *Contractor* to discipline his/her employees and to conduct a disciplinary action, and submit a report to *the Service Manager.* The *Contractor* shall implement additional health and safety precautions where necessary.
The *Contractor* will provide all his/her personnel with the required personal protective equipment.
Risk Assessments, Pre-Job Briefs, Post – Job Briefs & Job Observations will be conducted for all jobs.
All Construction Regulation - safety requirements should also be adhered to.

- Safety Plan
- Fall Protection Plan (using of scaffolding or stepladders when performing the scope)
- 16.1 and 16.2 appointments

3.1.2 Fire Precautions

a) Any tampering with the *Employer*'s fire equipment is strictly forbidden.
b) All exit doors, fire escape routes, walkways, stairways, stair landings and access to electrical distribution boards must be kept free of obstruction, and not be used for work or storage at any time.
c) Fire-fighting equipment must remain accessible at all times.
d) In case of a fire, report the location and extent of the fire to the Electrical Operating Desk at extension 7911.
e) Take the necessary action to safe guard the area to prevent injury and spreading of the fire.

3.1.3 Reporting of accidents

The *Employer* follows an accident prevention policy that includes the investigation of all accidents involving personnel and property. This is done with the intention of introducing control measures to prevent a recurrence of the same incidents. The *Contractor* is expected to fully co-operate to achieve this objective. The *Service Manager* must be informed immediately of any incidents and any damage to property or equipment must be reported to the *Service Manager* within 24 hours.
NOTE! This report does not relieve the *Contractor* of his/her legal obligation to report certain 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.

3.1.4 Barricading and screens

The *Contractor* will provide and install barricades and warning devices to ensure that equipment and persons are not exposed to danger or to prevent access to dangerous areas.
All welding, flame cutting and grinding work shall be properly screened to protect persons from any injury.
All gratings shall be covered with adequate protective screening when welding or flame cutting in the vicinity.

3.1.5 Speed Limit

All vehicles must be driven with due consideration for personnel and property. A maximum speed limit of 40 kilometres per hour will be adhered to on the premises at all times.

3.2 Safety

a) The *Contractor* complies with the Occupational Health and Safety Act, 1993, and Regulations (the Act) and all Safety procedures issued by the *Employer*. The *Contractor* must furthermore comply with the Eskom construction for Safety health and environmental procedure 32-136 which is available from the Kendal Documentation Centre.
b) The *Contractor* will carry out work according to Plant Safety Regulations.
c) The *Employer* shall on request from the *Contractor* isolate required plant from all sources of danger as described in the Plant Safety Regulations.
d) The *Employer* will provide the Plant Safety Regulation, ORHVS and LAR training to the *Contractor*.
e) The *Employer* shall make a copy of the Plant Safety Regulations and ORHVS available to the *Contractor*.
f) The *Contractor* will attend monthly safety meetings, and conduct monthly safety meetings with staff.
g) The *Contractor* provides all personal safety equipment, including safety belts and harnesses
h) The *Contractor* will not be allowed to transport any of its workers in open vehicles to and from site

3.2.1 SHE requirements that tenderers have to address and respond to when submitting tender returnable for the Supplier that fall under high Risk Category

a) Health and Safety plan/OHS manual
b) H&S costing
c) Baseline SHE risk assessment
d) Valid letter of good standing or equivalent (LOGs)
e) SHE policy (must be signed)
f) Proof of SHE competency

3.2.2 In accordance with the SHE Specification 240-73198174, supplier shall comply with the legislation and complete the following:-

a) Section 37(2) Legal Agreements shall be signed between Eskom (Kendal Power station and Principle *Contractor*)
b) OHS Construction Regulation 5(1) (k) the principal *Contractor* will be appointed by Eskom or Agent on the awarding of the contract and will be responsible and accountable for all legislative and Eskom Kendal requirements for the duration of the contract/ Project.
c) Approval and compliance of principal *Contractor* SHE plan, The *Contractor*'s SHE Plan will be audited against a compliance checklist so as to confirm compliance to the requirements in the Eskom Kendal Power Station SHE specifications
d) Eskom Health and Safety audits/reviews Kendal Power Station shall evaluate all *Contractors'* Health & Safety performance on an on-going basis against the legal, Eskom requirements, SHE specification and the *Contractors* SHE plans. Depending on a supplier risk category, the audit shall be carried out either monthly or quarterly.
e) Notification of Construction Work Unless otherwise contractually agreed upon, the principal *Contractor* must notify the relevant provincial director of the Department of Labour of the intention of carrying out any construction work as defined in Construction Regulation 4 of the Act.

3.2.3 SHE Spec Requirements

a) Occupational Health and Safety Act and Construction Regulation
b) Compensation of Injuries and Diseases Act
c) Kendal safety Risk Management Procedure Manual for Contracts 1015696
d) Eskom construction for Safety health and environmental procedure 32-136
e) Eskom SHEQ Policy 32-727
f) Eskom life-saving rule procedure 240-62196227
g) Eskom incident management procedure 32-95
h) Vehicle and driver safety management procedure 32-93
i) Work at heights procedure 32-418 (if applicable)

j) Eskom vehicle safety spec 32-345
k) Hazard Identification and risk assessment Procedure 32-520

3.2.4 Waste disposal

All waste introduced to and/or produced on *Employer*'s Premises by the *Contractor* for this Contract must be handled in accordance with the minimum requirements for the Handling and Disposal of Hazardous Waste in terms of Government Legislation as proclaimed by the Department of Water Affairs and Forestry Act 1994 Ref: ISBN0621-16296-5. (A copy of this document is available at the Power Station for reference purposes.)

3.3 Lighting

The *Contractor* shall comply with the requirements of the Occupational Health and Safety Act and ensure that adequate lighting is provided to work areas at all times.

3.4 Compressed Air

a) Compressed air will be available on site subject to advice by the *Contractor* of the quantity required. The *Employer* will indicate to the *Contractor* the source of compressed air, and it will be the responsibility of the *Contractor* for the piping and carrying of the control air to the lift or required areas.
b) Facilities for water and compressed air are indicated with Eskom colour coding.

3.5 Supply of Electricity

Employer will make available to the *Contractor* 220/380-volt electrical supply free of charge from the closest existing point of supply.
The *Contractor* is to make provision for the necessary extensions and plug points.

3.6 Telephones and Telecommunications

Should the *Contractor* require a telephone service he shall make his/her own arrangements.

3.7 Welding on site

Welding will be allowed on site, it must be done according to Eskom Kendal procedures applicable for welding.

3.8 Environmental constraints and management

The *Contractor* is required to ensure that all goods, services or works supplied in terms of the Contract conform to all applicable environmental legislation. Where work is done on the *Employer*'s sites the goods, services or works supplied will also conform to *Employer*'s environmental specifications.
The *Contractor* shall adhere to the Kendal Power Station Environmental Management System.
The EMS requirements are detailed in the latest revision of the following documents, which are available from the Kendal Power Station Documentation Centre or Internal Web site, and include:

a) Environmental Management Policy
b) Environmental Management System Manual
c) Waste Management at Kendal
d) Oil Spill Management at Kendal
e) Environmental Legal Register (Environmental Legislation applicable to Kendal)
f) Kendal Power Station Aspects and Impacts Register

The *Service Manager* will share the latest revisions of these documents to the *Contractor* if required.

The *Contractor* will be responsible for complying with any new environmental requirements, relevant to the Works Information that may come into effect as part of Kendal Power Station's EMS for the duration of this contract.
If there is uncertainty around any environmental issues, the Environmental Department at Kendal Power Station may be contacted

3.9 Quality assurance requirements

The *Contractor* guarantees to utilize the manufacturer's approved parts, components and lubricants. If the original parts are not available, the *Employer* must be informed. In the event of the manufacturer's approved parts not being available, the *Contractor* and *Employer* will negotiate a subsequent approved part to be used. The *Contractor* has an effective quality management system in place and should be ISO 9001 aligned. Furthermore, all activities will be done as per to the level of quality management stipulated therein and also taking into account input from Kendal Engineering Department, Maintenance Department, Risk Assurance department and Kendal Management.

The *Contractor* provides qualified and competent teams with all the necessary equipment to provide the Service.
The *Contractor* has identified a representative as a key person approved by the *Employer* who will report to the *Service manager* and co-ordinate all activities. The Site representatives must be qualified and experience persons (minimum 5 years) on the lifts installed in Kendal Power Station (old technology).
The *Contractor* should comply with:

a) The supplier shall comply with Eskom SHEQ Policy
b) The supplier shall complier with Eskom Supplier Quality Management Specification – 240 105658000
c) Comply with ISO 9001 Quality Management System Requirements

4 Procurement

4.1 People

4.1.1 Minimum requirements of people employed

a) Refer to section 2.3.1 for minimum number of people, their qualification and experience required to be employed by the *Contractor* on this contract.
b) All project managers, site managers and project leaders must have undergone training in contracts management (e.g. NEC3), any technical discipline (e.g. construction, civil, mechanical, electrical, C&I), and managerial course (e.g. project management, etc.) from reputable institutions. 3 years minimum experience required.
c) The *Contractor* will provide trained personnel for the implementation of all work.
d) The *Contractor* remunerates his/her 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.

e) The contractor submits a staff organogram, with relevant skills levels, with his or her submission.
According to the SKILLS DEVELOPMENT ACT 97 OF 1998, the following definition for artisans and trades are emphasised:

1. **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)
2. **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 Contract Manger 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.

4.1.2 Supervision

Contractor provides an Authorised Supervisor(s) in terms of the Plant Safety Regulations. The *Contractor* to train enough staff to cover leaves periods as well as night shifts if required. Training will be provided by Eskom Kendal Power Station as per schedule. As thus the *Service Manager* should make arrangements well in advance for this training to take place.

4.1.3 BBBEE and preferencing scheme

Specify constraints which *Contractor* must comply with after contract award in regard to any Broad Based Black Economic Empowerment (B-BBEE) or preferencing scheme measures.

4.2 Subcontracting

4.2.1 Preferred subcontractors

a) The Sub contractor must be competent in the service and maintenance of the overhead lines and specialise cable works as mention on this contract
   Only subcontractors authorized by the Employer will carry out work on the equipment in terms of this contract.

4.2.2 Subcontract documentation, and assessment of subcontract tenders

a) The *Contractor* prepares the subcontractor documentation. The use of the NEC system is recommended on how subcontractor tenders are to be issued, received, assessed and awarded.
b) the main contractor should be responsible for all work executed by subcontractor
c) The main contractor to provide all test results to the *Service Manager*

4.3 Plant and Materials

4.3.1 Specifications

4.3.1.1 Distribution boards, Lighting and Domestic circuits

a) The Employer shall provide all cleaning materials, parts and spares to carry out all plant maintenance and services as per this contract
b) The contractor shall provide all tools and testing equipment to execute the service

4.3.1.2 Cabling and accessories

a) The *Contractor* shall provide all materials, parts and spares to carry out all plant maintenance and services as per this contract
b) the *contractor* shall provide all tools, special equipment and testing equipment to execute the service
c) The contractor shall maintain minimum required stocks of critical cables and accessories on site as indicated by the Employer at all times
d) The *contactor* shall able to provide any cables and accessories that specified on this contract within 8 hours of the task order.
e) The contractor shall have agreement with his/her suppliers to procure all cables and accessories on this contract during South Africa national holidays, work shutdown, stoppages and after working hours.

4.3.2 Correction of defects

a) Repairs will be carried out in accordance to the contract in the quickest time and safest manner.
b) During breakdowns the Contractor shall provide execution program for repairs to be executed to return the plant in service
c) The Contractor shall provide a callout service to respond to any breakdown at any time, providing a 24 hour standby service, the response time to be on site after the callout is one (1) hour.
d) In the case of any breakdown, a repair program must be submitted to the Employer within 1 hour. Repair work to commence on the exact time as indicated by the Employer
e) The contractor to provide 2 hourly update on the program, if repairs are more than four hours and above.

4.3.3 Contractor's procurement of Plant and Materials

a) The *contractor* supplies SABS approved plant and materials.
b) The *contractors* submit copies of documentation to the Employer.

4.3.4 Plant & Materials provided "free issue" by the Employer

a) During maintenance *Employer* will provide all spares and parts for required scope of Lighting and Domestics circuits

5 Working on the Affected Property

5.1 *Employer*'s site entry and security control, permits, and site regulations

The Entry to site is only approved once the following is adhered to:
a) The *Contractor*s Safety file is to be approved by the *Employer*'s Safety department.
b) All personnel must undergo screening for Criminal records and outstanding warrants
c) Site-specific induction is to be done by all personnel.

5.1.1 Permits

a) The *Contractor* will ensure that he/she is informed of all the requirements of Eskom's Plant Safety Regulations and that he/she at all times comply to the requirements of these Regulations.
b) The *Contractor* within three months of this contract awarded will qualify his/her Supervisor and Installation Electricians to be Responsible Persons to take out permits on the *Employer*'s permit to work system.
c) *Contractor* provides an Authorised Supervisor(s) in terms of the Plant Safety Regulations. The *Contractor* to train enough staff to cover leaves periods as well as night shifts if required.
d) The *Contractor* must have one Responsible Person available to take out permits per shift.
e) The *Contractor* will conform to all rules and regulations applicable to Plant Safety and shall complete a proper risk assessment and Worker's Register prior to working on the plant.
f) The *Contractor* will ensure that his/her representatives are duly authorised in terms of the Plant Safety Regulations as a responsible person upon commencement of work.
g) Access Control (IAC) System. The *Contractor* is responsible for the cost of all replacement cards.

5.2 People restrictions, hours of work, conduct and records

5.2.1 *Contractors* Working Hours are as follows:

a) The *Contractor's* Normal Working Hours, in terms of the contract, are Mondays to Thursday: 07:15 to 16:30 and Fridays: 07:15 to 12:15 excluding Public Holidays.
b) During working hours, Core crew must be on site.

c) *Contractor* must manage *employees* on leave to ensure that 90% of the Core crew is on site during working hours every working day.
d) The *contractor* must submit monthly leave plan and records

5.2.2 Callouts - Overtime

a) The *Contractor* shall provide a callout service to respond to any breakdown at any time, providing a 24 hour standby service, with a response time to be on site at Kendal within one (1) hour.
b) No call out fee will be applicable during normal working hours
c) In the case of any breakdown, a repair program of action must be submitted to the *Employer*.
d) The *contractor* is responsible for adherence to BCEA as determined by the Department of labor.
e) Daily timesheet must be kept up to date of normal and overtime worked at all times and to form part of the monthly report.

5.2.3 Time Clocking

a) The *Contractor* uses a biometric time clocking system on their site.
b) If a person clocked in but not out or did not clock in, but clocked out, the person will not receive payment for that specific day.
c) Proof of clocking to be submitted to the *Employer* from files directly generated from the clocking system (no manual intervention)

5.3 Health and safety facilities on the Affected Property

Contractor is required to undergo departmental safety induction programme for every department where service will be rendered.

5.3.1 Waste Disposal

Refer to works information section 3.2.4

5.3.2 Medical Facilities

Refer to works information section 5.6.1 (d)

5.4 Records of *Contractor*'s Equipment

a) The *Contractor* to declare all equipment and tools via a pre- set up list at the main entrance, and copy of the tool list must be supplied to the *Service Man*ager.
b) The *Contractor* Need to have a list of inventory of their equipment on site. Proof of site entrance needs to be provided before Equipment can be removed from site. Where a removal permit is required it will be issued by *Service Manager.*
c) All test equipment must have valid calibration certificates.
d) All vehicles, tools and equipment must be inspected on a regular basis (not longer than three months) and inspection reports must be filed for audit purposes.

5.5 Equipment provided by the *Employer*

a) The *employer* will only provide scaffolding in areas where required.

5.6 Site services and facilities

5.6.1 Provided by the *Employer*

a) Access to all affected areas
b) Sanitation (drinking water and toilets).
c) A site area will be provided to the contractor for site establishment.
d) Medical Centre (The *Employer* will recover all costs)

e) Electricity connection / disconnection. The *Contractor* to provide all necessary cabling, Certificate of Compliance (COC) etc. Electricity will be made available for construction purposes free of charge from power points, which will be indicated by the *Employers* Representative. The *Contractor* will be made responsible for the provision of the reticulation system from the point of supply. Both 220 (AC) Volt and 380 Volt (AC) are available on request. The *Contractor's* requirements are to be stated in his/her tender. Eskom does not guarantee the quality of supply of the power and the *Contractor* shall make his/her own arrangements for alternative supplies where required. Any breakdown or reduction in the power supply will not be grounds for claims for additional time or compensation.
f) Water connection /. Disconnection point. Water will be made available on request free of charge from water points on site, where available. The *Contractor* will supply at his/her own cost all the necessary connections, fittings, piping etc. for this facility. Eskom does not guarantee continuity of supply and quality of the water and the *Contractor* shall make his/her own arrangements for alternative supplies where required. Any breakdown or reduction in the water supply will not be grounds for claims for additional time or compensation.
g) Canteen Facilities. The *Contractor* is not entitled to utilize the *Employer*'s canteen available at the work place. *Employe*r is not responsible for the meal cost.
h) The *Contractor* provides everything else necessary for providing the Service

5.6.2 Provided by the Contractor

Contractor shall provide everything else necessary for providing the Service.

a) Tools, equipment and consumables.
b) Portable 380 V electrical distribution boards, and supply cables to and from the boards for all his/her power supply requirements to execute the services.
    - The *Contractor*'s Electrical Distribution Boards complies with OHSA as referred to in the Electrical installation Regulations and Electrical Machinery Regulations. Each board brought onsite has a certificate of compliance issued by an accredited person.
    - The *Contractor*'s Electrical Distribution Boards must be installed at a time negotiated with the *Service Manager*, or prior to the possession date. Distribution boards will be connected to a 220V AC or 380v three phase AC electrical power supply by the *Employer*, only after the *Contractor* has submitted the valid certificate of compliance.
    - All *Contractor*s' Distribution Boards are earthed to the steel structure of the plant.
c) Accommodation
d) All transport to and from site or any transport onsite
e) Park home offices, workbenches, tool containers, secured store container for cables and accessories, kitchen facilities, office furniture, equipment and stationery.
f) Meals. The *Contractor* or any of his/her employees or subcontractors may buy take-away meals from the fast food outlet onsite, if available.
g) Telecommunications. Two way radio (400-430 MHz) at all times and one base station for the *Employer* that will be supplied by the Contractor. The Contractors radio to be compatible to Eskom Kendal Radio frequency.
h) Everything else necessary for providing the Service
i) Upon completion or termination of the contract the *Contractor* must clear the site of all facilities except for items that are belonging to the *employer.*

5.7 Control of noise, dust, water and waste

All waste introduced to and/or produced on *Employer*'s Premises by the *Contractor* for this Contract must be handled in accordance with the minimum requirements for the Handling and Disposal of Hazardous Waste in terms of Government Legislation as proclaimed by the Department of Water Affairs and Forestry Act 1994 Ref: ISBN0621-16296-5. (A copy of this document is available at the Power Station for reference purposes.)

5.8 Hook ups to existing works

Any work performed at heights, must adhere to the correct safety standards, procedures and specifications stated in the Health and safety risk management of Kendal Power Station

5.9 Tests and inspections

5.9.1 Description of tests and inspections

a) The *contractor* is to develop quality control plans for all tests and inspections, which must be submitted to the *Employers* Representative for approval.

b) All testing and inspections to be conducted as described under section 1.2 *Employer*'s requirements for the service

6 List of drawings

6.1 Drawings issued by the *Employer*

Where relevant drawings are available, the *Employer* will provide these drawing to the *contractor*.

7 APPENDIX A – Distribution Boards (Functional Locations)

***Note**: on table 1 "*" refers to Unit 1-6*

Table 2: 380V Aux Bay BD Boards

Functional Location	Description
11-15BLB01	380V LDB PERFORMANCE & TEST 16,0M LEVEL
11-15BMC01	380V LDB PERFORMANCE & TEST 16,0M LEVEL
11-27BLB01	380V LDB EMD WORKSHOP 16M LEVEL
11-27BMC01	380V LDB EMD WORKSHOP 16M LEVEL
11-47BLB01	380V LDB MECHANICAL WORKSHOP 16M LEVEL
11-47BMC01	380V LDB MECHANICAL WORKSHOP 16M LEVEL
11-67BLB01	380V LDB ROTEK WORKSHOP 16,0M LEVEL
11-67BMC01	380V LDB ROTEK WORKSHOP 16,0M LEVEL

Table 3: 380V Boiler House DB Boards

Functional Location	Description
11-*1BLE01	380V LDB BOILER HOUSE 0,0M LEVEL L/H
11-*1BMF01	380V LDB BOILER HOUSE 0,0M LEVEL L/H
11-*2BLE01	380V LDB B/HOUSE 0,0M LEVEL R/H
11-*2BMF01	380V LDB BOILER HOUSE 0,0M LVL R/H
11-*3BLE01	380V LDB BOILER HOUSE 13,4M LEVEL L/H
11-*3BMF01	380V LDB BOILER HOUSE 13,4M LEVEL L/H
11-*4BLE01	380V LDB BOILER HOUSE 13,4M LEVEL RH
11-*4BMF01	380V LDB BOILER HOUSE 13,4M LVL RH
11-*5BLE01	380V LDB BOILER HOUSE 26,5M LEVEL LH
11-*5BMF01	380V LDB BOILER HOUSE 26,5M LEVEL LH
11-*6BLE01	380V LDB BOILER HOUSE 26,5M LEVEL RH
11-*6BMF01	380V LDB BOILER HOUSE 26,5M LEVEL RH
11-*7BLE01	380V LDB BOILER HOUSE 42,8M LEVEL LH
11-*7BMF01	380V LDB BOILER HOUSE 42,8M LEVEL LH
11-*8BLE01	380V LDB BOILER HOUSE 42,8M LEVEL RH
11-*8BMF01	380V LDB BOILER HOUSE 42,8M LEVEL RH
11-*9BLE01	380V LDB BOILER HOUSE 52,4M LEVEL LH

11-*9BMF01	380V LDB BOILER HOUSE 52,4M LEVEL LH
11-*1BLF01	380V LDB BOILER HOUSE 52,4M LEVEL R/H
11-*1BMG01	380V LDB BOILER HOUSE 52,4M LVL R/H
11-*2BLF01	380V LDB BOILER HOUSE 64,2M LEVEL L/H
11-*2BMG01	380V LDB BOILER HOUSE 64,2M LVL L/H
11-*3BLF01	380V LDB BOILER HOUSE 64,2M LEVEL
11-*3BMG01	380V LDB BOILER HOUSE 64,2M LEVEL R/H
11-*4BLF01	380V LDB BOILER HOUSE 81,0M LVL LH
11-*4BMG01	380V LDB BOILER HOUSE 81,0M LVL LH
11-*5BLF01	380V LDB BOILER HOUSE 81,0M LEVEL RH
11-*5BMG01	380V LDB BOILER HOUSE 81,0M LEVEL RH
11-*8BLF01	380V LDB BOILER HOUSE CONVEYER
11-*8BMG01	380V LDB BOILER HOUSE CONVEYER

***Note**: on table 2 "*" refers to Unit 1-6*

Table 4: 380V Cooling Water DB Boards

Functional Location	Description
11-11BLG01	380V LDB COOLING WATER SUB
11-11BLH01	380V LDB COOLING TOWER
11-21BLG01	380V LDB COOLING WATER SUB
11-21BLH01	380V LDB COOLING TOWER
11-31BLG01	380V LDB COOLING WATER SUB
11-31BLH01	380V LDB COOLING TOWER
11-41BLG01	380V LDB COOLING WATER SUB
11-41BLH01	380V LDB COOLING TOWER
11-51BLG01	380V LDB COOLING WATER SUB
11-51BLH01	380V LDB COOLING TOWER
11-61BLG01	380V LDB COOLING WATER SUB
11-61BLH01	380V LDB COOLING TOWER

Table 5: 380V H2 Plant DB Board

Functional Location	Description
11-06BLD01	380V LDB H2 GENERATING BUILDING

Table 6: 380V Precip DB Boards

Functional Location	Description
11-10BLQ01	BOARD, 380V PRECIP SUB LDB
11-11BLQ01	380V LDB PRECIP AREA
11-12BLQ01	380V LDB PRECIP AREA
11-20BLQ01	BOARD, 380V PRECIP SUB LDB
11-21BLQ01	380V LDB PRECIP AREA
11-22BLQ01	380V LDB PRECIP AREA
11-30BLQ01	BOARD, 380V PRECIP SUB LDB
11-31BLQ01	380V LDB PRECIP AREA
11-32BLQ01	380V LDB PRECIP AREA
11-40BLQ01	BOARD, 380V PRECIP SUB LDB
11-41BLQ01	380V LDB PRECIP AREA
11-42BLQ01	380V LDB PRECIP AREA
11-50BLQ01	BOARD, 380V PRECIP SUB LDB
11-51BLQ01	380V LDB PRECIP AREA
11-52BLQ01	380V LDB PRECIP AREA
11-60BLQ01	BOARD, 380V PRECIP SUB LDB
11-61BLQ01	380V LDB PRECIP AREA
11-62BLQ01	380V LDB PRECIP AREA
11-62BLQ01	380V LDB PRECIP AREA
11-13BLQ01	LDB L/H ID FAN BASE
11-14BLQ 01	LDB R/H ID FAN BASE
11-23BLQ01	LDB L/H ID FAN BASE
11-24BLQ 01	LDB R/H ID FAN BASE
11-33BLQ01	LDB L/H ID FAN BASE
11-34BLQ 01	LDB R/H ID FAN BASE
11-43BLQ01	LDB L/H ID FAN BASE
11-44BLQ 01	LDB R/H ID FAN BASE
11-53BLQ01	LDB L/H ID FAN BASE
11-54BLQ 01	LDB R/H ID FAN BASE
11-63BLQ01	LDB L/H ID FAN BASE
11-64BLQ 01	LDB R/H ID FAN BASE

Table 7: 380V SSB DB Boards

Functional Location	Description
11-01BLA01	BRD, 380V SSB -3.8M BASEMENT
11-02BLA01	380V LDB SSB 0,0M LEVEL
11-03BLA01	380V LDB SSB 0,0M LVL
11-04BLA01	380V LDB SSB 5,4M LEVEL
11-05BLA01	BRD, 380V DIST SSB 5,4M LVL
11-05BLA02	BRD, 380V DIST SSB 5.4M LVL
11-01BMB01	380V LDB SSB -3,8M LVL
11-02BMB01	380V LDB SSB BASEMENT
11-03BMB01	380V LDB SSB 0,0M LVL
11-04BMB01	380V LDB SSB 0,0M LVL

Table 8: 380V Turbine House DB Boards

Functional Location	Description
11-*1BLD01	380V LDB TURBINE 0,0M LEVEL
11-*1BME01	380V LDB TURBINE HOUSE 0,0M LEVEL
11-*2BLD01	380V LDB TURBINE 0,0M LEVEL
11-*2BME01	380V LDB TURBINE HOUSE 0,0M LEVEL
11-*3BLD01	380V LDB TURBINE 9,5M LEVEL
11-*3BME01	380V LDB TURBINE HOUSE 9,5M LEVEL
11-*4BLD01	380V LDB TURBINE, 9,5M LEVEL
11-*4BME01	380V LDB TURBINE HOUSE 9,5M LEVEL
11-*5BLD01	380V LDB TURBINE 16M LEVEL
11-*5BME01	380V LDB TURBINE HOUSE 16M LEVEL
11-*6BLD01	380V LDB TURBINE ANALOG ROOM

Note: *on table 8 "*" refers to Unit 1-6*

Table 9: **380V Outside Plant DB Boards**

Functional Location	Description
11-30BLQ01	BOARD, 380V PRECIP SUB LDB
11-31BLQ01	380V LDB PRECIP AREA
11-32BLQ01	380V LDB PRECIP AREA

11-41BLQ01	380V LDB PRECIP AREA
11-42BLQ01	380V LDB PRECIP AREA
11-10BLQ01	BOARD, 380V PRECIP SUB LDB
11-11BLQ01	380V LDB PRECIP AREA
11-12BLQ01	380V LDB PRECIP AREA
11-20BLQ01	BOARD, 380V PRECIP SUB LDB
11-21BLQ01	380V LDB PRECIP AREA
11-22BLQ01	380V LDB PRECIP AREA
11-40BLQ01	BOARD, 380V PRECIP SUB LDB
11-50BLQ01	BOARD, 380V PRECIP SUB LDB
11-51BLQ01	380V LDB PRECIP AREA
11-52BLQ01	380V LDB PRECIP AREA
11-60BLQ01	BOARD, 380V PRECIP SUB LDB
11-61BLQ01	380V LDB PRECIP AREA
11-62BLQ01	380V LDB PRECIP AREA
11-60BLQ01	BOARD, 380V PRECIP SUB LDB
11-51BLQ01	380V LDB PRECIP AREA
11-61BLQ01	380V LDB PRECIP AREA
11-52BLQ01	380V LDB PRECIP AREA
11-62BLQ01	380V LDB PRECIP AREA
11-10BLQ01	BOARD, 380V PRECIP SUB LDB
11-20BLQ01	BOARD, 380V PRECIP SUB LDB
11-30BLQ01	BOARD, 380V PRECIP SUB LDB
11-11BLQ01	380V LDB PRECIP AREA
11-21BLQ01	380V LDB PRECIP AREA
11-12BLQ01	380V LDB PRECIP AREA
11-22BLQ01	380V LDB PRECIP AREA
11-40BLQ01	BOARD, 380V PRECIP SUB LDB
11-50BLQ01	BOARD, 380V PRECIP SUB LDB
11-31BLQ01	380V LDB PRECIP AREA
11-41BLQ01	380V LDB PRECIP AREA
11-32BLQ01	380V LDB PRECIP AREA
11-42BLQ01	380V LDB PRECIP AREA
11-01BLP01	380V LDB CSY SUB STATION 1
11-03BLR01	380V LDB CSY BATT HOUSE 3 RAW WTR RETIC

11-03BLP01	380V LDB CSY SUB STATION 3
11-02BLR01	380V LDB CSY BATTERY HSE 2 RAW WTR RETIC
11-02BLP01	380V LDB CSY SUB STATION 2
11-03BLL01	380V LDB CSY TRANSFER HOUSE 3
11-03BLN01	380V LDB TRF HOUSE TB1 (TERR COAL PLANT)
11-04BLL01	380V LDB CSY TRANSFER HOUSE 1
11-04BLN01	380V LDB TRF HSE TB2 (TERR COAL PLANT)
11-04BLP01	380V LDB CSY SUB STATION 4
11-04BLQ01	380V LDB CSY CONTROL BUILDING
11-05BLL01	380V LDB CSY TRANSFER HOUSE 4A
11-05BLL02	380V LDB CSY TRANSFER HOUSE 4B
11-05BLP01	380V LDB CSY MINI SUB A SECURITY LIGHTS
11-05BLN01	380V LDB TRANSFER HOUSE TB3
11-05BLP02	380V LDB CSY W/P BRD FOR ELECT FENCE
11-05BLQ01	380V LDB CSY POTABLE WATER PMP STATION
11-06BLL01	380V LDB CSY TRANSFER HOUSE 5B
11-06BLL02	380V LDB CSY TRANSFER HOUSE 5A
11-06BLP01	380V LDB CSY MINI SUB B SEC LIGHTS
11-07BLL01	380V LDB CSY DRIVE HOUSE
11-07BLL02	380V LDB CSY SURGE BIN 2
11-07BLP01	380V LDB CSY MINI SUB C SECURITY LIGHTS
11-07BLQ02	380V LDB CSY CALIBRATION BIN 1
11-07BLQ03	380V LDB CSY SURGE BIN 1
11-08BLP01	380V LDB CSY KITCHEN/TOILET BLOCK
11-09BLL01	380V LDB CSY TRANSFER HOUSE 7
11-08BLQ01	380V LDB CSY TRANSFER HOUSE 8
11-09BLQ01	380V LDB CSY SAMPLING TOWER
11-01BLL01	380V LDB ASH TRF HSE E (ASH HANDLG PLNT)
11-01BLQ01	380V LDB ASH TRANSFER HOUSE SUB
11-02BLL01	380V LDB ASH TRF HSE F (ASH HANDLG PLNT)
11-02BLQ01	380V LDB ASH DUMP SUB
11-08BLL01	380V LDB ASH DUMP W/S & ADMIN BUILDING
11-08BLL02	220V LDB ASH DUMP WASHBAY
11-01BLL01	380V LDB ASH TRF HSE E (ASH HANDLG PLNT)
11-01BLQ01	380V LDB ASH TRANSFER HOUSE SUB

11-02BLL01	380V LDB ASH TRF HSE F (ASH HANDLG PLNT)
11-02BLQ01	380V LDB ASH DUMP SUB
11-08BLL01	380V LDB ASH DUMP W/S & ADMIN BUILDING
11-08BLL02	220V LDB ASH DUMP WASHBAY
11-01BLP01	380V LDB CSY SUB STATION 1
11-02BLP01	380V LDB CSY SUB STATION 2
11-02BLR01	380V LDB CSY BATTERY HSE 2 RAW WTR RETIC
11-03BLL01	380V LDB CSY TRANSFER HOUSE 3
11-03BLN01	380V LDB TRF HOUSE TB1 (TERR COAL PLANT)
11-03BLP01	380V LDB CSY SUB STATION 3
11-03BLR01	380V LDB CSY BATT HOUSE 3 RAW WTR RETIC
11-04BLL01	380V LDB CSY TRANSFER HOUSE 1
11-04BLN01	380V LDB TRF HSE TB2 (TERR COAL PLANT)
11-04BLP01	380V LDB CSY SUB STATION 4
11-04BLQ01	380V LDB CSY CONTROL BUILDING
11-05BLL01	380V LDB CSY TRANSFER HOUSE 4A
11-05BLL02	380V LDB CSY TRANSFER HOUSE 4B
11-05BLP01	380V LDB CSY MINI SUB A SECURITY LIGHTS
11-05BLP02	380V LDB CSY W/P BRD FOR ELECT FENCE
11-05BLQ01	380V LDB CSY POTABLE WATER PMP STATION
11-06BLL01	380V LDB CSY TRANSFER HOUSE 5B
11-05BLN01	380V LDB TRANSFER HOUSE TB3
11-06BLL02	380V LDB CSY TRANSFER HOUSE 5A
11-06BLP01	380V LDB CSY MINI SUB B SEC LIGHTS
11-07BLL01	380V LDB CSY DRIVE HOUSE
11-07BLL02	380V LDB CSY SURGE BIN 2
11-07BLP01	380V LDB CSY MINI SUB C SECURITY LIGHTS
11-07BLQ02	380V LDB CSY CALIBRATION BIN 1
11-07BLQ03	380V LDB CSY SURGE BIN 1
11-08BLP01	380V LDB CSY KITCHEN/TOILET BLOCK
11-08BLQ01	380V LDB CSY TRANSFER HOUSE 8
11-09BLL01	380V LDB CSY TRANSFER HOUSE 7
11-09BLQ01	380V LDB CSY SAMPLING TOWER
11-00BLN01	LDB, 380V BULK FUEL OIL COMPLEX
11-01BLD01	380V LDB SEC ACCESS CONTROL BUILDING

11-01BLD02	380V LDB SEC ACCESS CONTROL BUILDING
11-01BLB01	BRD, 380V LDB SECTY ACCESS CTRL BUILDING
11-01BLC01	380V LDB W/SHOP & STORES GROUND FLOOR
11-01BLD05	380V LDB DOG KENNELS
11-01BLE01	LDB, 380V SUB STATION SOUTH 1
11-01BLN01	380V, LDB FOP SUB
11-01BLN02	LDB 380V MAIN DAILY OIL STORE
11-02BLA01	380V LDB SSB 0,0M LEVEL
11-02BLC01	380V LDB W/SHOP & STORES GROUND FLOOR
11-02BLN01	380V LDB FUEL OIL PLANT SUB
11-03BLA01	380V LDB SSB 0,0M LVL
11-03BLC01	380V LDB W/SHOP & STORES GROUND FLOOR
11-04BLC01	380V LDB W/SHOP & STORES GROUND FLOOR
11-03BLQ01	380V LDB CLEAN & DIRTY WATER SUB
11-05BLC01	380V LDB W/SHOP & STORES GROUND FLOOR
11-06BLC01	380V LDB W/SHOP & STORES GROUND FLOOR
11-06BLD01	380V LDB H2 GENERATING BUILDING
11-06BLQ01	380V LDB DIRTY WATER PMP STATION
11-07BLA01	BRD, 380V LDB DEMIN BUILDING
11-07BLA02	BRD, 380V LDB DEMIN BUILDING
11-07BLA05	BRD, 380V LDB NEUTRALISATION PIT
11-07BLA06	BRD, 380V LDB CHEMICAL BUILDING
11-07BLA03	BRD, 380V LDB FILTER BUILDING
11-07BLA04	BRD, 380V LDB CLARIFIER BUILDING
11-07BLA07	BRD, 380V LDB AMMONIA STORAGE
11-07BLA08	BRD 380V LDB H2SO4 & CAUSTIC SODA
11-07BLC01	380V LDB W/SHOP & STORES GROUND FLOOR
11-08BLA01	380V LDB LAB BLOCK (SEWAGE TREATM PLANT)
11-08BLA02	220V LDB CHLORINE RM (SEWAGE TREAT PLNT)
11-08BLC01	380V LDB FIRE AND FIRST AID CENTRE
11-09BLB02	BRD, 380V LDB SECTY GUARD SLEEP QRTS
11-09BLB03	BRD, 380V LDB SECTY GUARD SLEEP QRTS
11-09BLC01	380V LDB SEC GUARDS SLEEPING QUATERS
11-01BLD02	380V LDB SEC ACCESS CONTROL BUILDING
11-01BLE01	LDB, 380V SUB STATION SOUTH 1

11-02BLC01	380V LDB W/SHOP & STORES GROUND FLOOR
11-02BLA01	380V LDB SSB 0,0M LEVEL
11-01BLN01	380V, LDB FOP SUB
11-01BLN02	LDB 380V MAIN DAILY OIL STORE
11-01BLB01	BRD, 380V LDB SECTY ACCESS CTRL BUILDING
11-01BLC01	380V LDB W/SHOP & STORES GROUND FLOOR
11-00BLN01	LDB, 380V BULK FUEL OIL COMPLEX
11-01BLD01	380V LDB SEC ACCESS CONTROL BUILDING
11-02BLN01	380V LDB FUEL OIL PLANT SUB
11-03BLC01	380V LDB W/SHOP & STORES GROUND FLOOR
11-03BLQ01	380V LDB CLEAN & DIRTY WATER SUB
11-04BLC01	380V LDB W/SHOP & STORES GROUND FLOOR
11-03BLA01	380V LDB SSB 0,0M LVL
11-06BLC01	380V LDB W/SHOP & STORES GROUND FLOOR
11-06BLD01	380V LDB H2 GENERATING BUILDING
11-06BLQ01	380V LDB DIRTY WATER PMP STATION
11-05BLC01	380V LDB W/SHOP & STORES GROUND FLOOR
11-07BLA01	BRD, 380V LDB DEMIN BUILDING
11-07BLA02	BRD, 380V LDB DEMIN BUILDING
11-07BLA03	BRD, 380V LDB FILTER BUILDING
11-07BLA04	BRD, 380V LDB CLARIFIER BUILDING
11-07BLA05	BRD, 380V LDB NEUTRALISATION PIT
11-07BLA06	BRD, 380V LDB CHEMICAL BUILDING
11-07BLA07	BRD, 380V LDB AMMONIA STORAGE
11-07BLA08	BRD 380V LDB H2SO4 & CAUSTIC SODA
11-07BLC01	380V LDB W/SHOP & STORES GROUND FLOOR
11-08BLA01	380V LDB LAB BLOCK (SEWAGE TREATM PLANT)
11-08BLC01	380V LDB FIRE AND FIRST AID CENTRE
11-09BLB02	BRD, 380V LDB SECTY GUARD SLEEP QRTS
11-09BLB03	BRD, 380V LDB SECTY GUARD SLEEP QRTS
11-09BLC01	380V LDB SEC GUARDS SLEEPING QUATERS

Table 10: Station HML information

Plant Area	Location Description	No of Masts	Mast Height (estimated)	Luminaires per Mast	Lamp Type & Wattage	Luminaire Assembly Type
Coal Stockyard	Inner lighting – between two live stockpiles	4	30 m	16	1000 HPS	Ring
	Outer lighting – Perimeter lighting	6	30 m	10	1000 HPS	Ring
Terrace	Around the power station main area	17	30 m	24	1000 HPS	Ring
Security – Main Gate	Outer Area lighting	1	25 m	8	400 HPS	Ring
	Inner Area Lighting	1	25 m	8	400 HPS	Ring
Cross Over	Around cross over area	3	25 m	3	400 HPS	Fixed
Sewage	Tank Area Lighting	1	15 m	4	150 HPS	Fixed
	Near office / electrical panel room	1	15 m	2	150 HPS	Fixed
	Fence / Perimeter Lighting	6	20 m	2	250 HPS	Fixed
Weigh Bridge	By the weigh bridge	4	15 m	6	400 HPS	Fixed
	Fence lighting	2	8 m	4	250 HPS	Fixed
HV Yard	Within HV Yard area	2	25 m	18	150 HPS	Fixed