NEC3 Engineering & Construction Contract

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

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

for **Hazardous Location Repairs for Compliance Certification at Matimba Power Station**

Contents: **No of pages**

CONTRACT No.

Part C1: Agreements & Contract Data

Contents: **No of pages**

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:

Hazardous Location Repairs for Compliance Certification at Matimba Power Station

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**
	Sub total	**R**
	Value Added Tax @ 15% is	**R**
	The offered total of the amount due inclusive of VAT is[1]	**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 (if applicable) .....

[1] This total is required by the *Employer* for budgeting purposes only. Actual amounts due will be assessed in terms of the *conditions of contract*.

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: Works Information
Part C4	Site 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 original copy signed between them of this document, including the Schedule of Deviations (if any).

Unless the tenderer (now *Contractor*) within five working days of the date of such receipt notifies the Employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the Parties.

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.

	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 ECC3 Contract Data

Part one - Data provided by the *Employer*

Clause	Statement	Data
1	**General**	
	The *conditions of contract* are the core clauses and the clauses for main Option	
		A: Priced contract with activity schedule
	dispute resolution Option	**W1: Dispute resolution procedure**
	and secondary Options	
		X2 Changes in the law
		X7: Delay damages
		X15: Limitation of *Contractor's* liability for design to reasonable skill and care
		X16: Retention
		X18: Limitation of liability
		Z: *Additional conditions of contract*
	of the NEC3 Engineering and Construction Contract, April 2013 (ECC3)	
10.1	The *Employer* is (Name):	**Eskom Holdings SOC Ltd (reg no: 2002/015527/30), a state owned company incorporated in terms of the company laws of the Republic of South Africa**
	Address	**Registered office at Megawatt Park, Maxwell Drive, Sandton, Johannesburg**
10.1	The *Project Manager* is: (Name)	**Georgie Lombard**
	Address	**Matimba Power Station**
	Tel	**+27 14 763 8405**
	e-mail	**Georgie.Lombard@eskom.co.za**
11.2(13)	The *works* are	**Hazardous Location Repairs for Compliance Certification**
11.2(14)	The following matters will be included in the Risk Register	**The Risks will recorded in the Risk Register as notified by the Contractor or the Employer during the execution of the Works**
11.2(15)	The *boundaries of the site* are	**Matimba Power Station Hazardous Locations**

		and the Contractor's yard
11.2(16)	The Site Information is in	**Part 4: Site Information**
11.2(19)	The Works Information is in	**Part 3: Scope of Work and all documents and drawings to which it makes reference.**
12.2	The *law of the contract* is the law of	**the Republic of South Africa**
13.1	The *language of this contract* is	**English**
13.3	The *period for reply* is	**3 days**
2	**The *Contractor's* main responsibilities**	**Data required by this section of the core clauses is provided by the *Contractor* in Part 2 and terms in italics used in this section are identified elsewhere in this Contract Data.**
3	**Time**	
11.2(3)	The *completion date* for the whole of the *works* is	**01 November 2023**
30.1	The *access dates* are:	**Part of the Site** / **Date** **1** **Matimba Power Station Hazloc areas** / **Start Date of the Contract**
31.1	The *Contractor* is to submit a first programme for acceptance within	**2 weeks of the Contract Date.**
31.2	The *starting date* is	**2021-11-01**
32.2	The *Contractor* submits revised programmes at intervals no longer than	**1 week.**
4	**Testing and Defects**	
42.2	The *defects date* is	**52 weeks after Completion of the whole of the *works*.**
43.2	The *defect correction period* is	**3 days**
5	**Payment**	
50.1	The *assessment interval* is	**Between the 25th day of each successive month.**
51.1	The *currency of this contract* is the	**South African Rand.**
51.4	The *interest rate* is	**the publicly quoted prime rate of interest (calculated on a 365 day year) charged from time to time by the Standard Bank of South Africa Limited (as certified, in the event of any dispute, by any manager of such bank, whose appointment it shall not be necessary to prove) for amounts due in Rands and** **(ii) the LIBOR rate applicable at the time for amounts due in other currencies. LIBOR is the 6 month London Interbank Offered Rate quoted under the caption "Money Rates" in The Wall Street Journal for the applicable currency or if**

		no rate is quoted for the currency in question then the rate for United States Dollars, and if no such rate appears in The Wall Street Journal then the rate as quoted by the Reuters Monitor Money Rates Service (or such service as may replace the Reuters Monitor Money Rates Service) on the due date for the payment in question, adjusted *mutatis mutandis* every 6 months thereafter and as certified, in the event of any dispute, by any manager employed in the foreign exchange department of The Standard Bank of South Africa Limited, whose appointment it shall not be necessary to prove.
6	**Compensation events**	
60.1(13)	The place where weather is to be recorded is:	**Matimba Power Station**
	The *weather measurements* to be recorded for each calendar month are,	**the cumulative rainfall (mm)** **the number of days with rainfall more than 10 mm** **the number of days with minimum air temperature less than 0 degrees Celsius** **the number of days with snow lying at 09:00 hours South African Time** **and these measurements:**
	The *weather measurements* are supplied by	**the Contractor**
	The *weather data* are the records of past *weather measurements* for each calendar month which were recorded at:	**The Contractor**
	and which are available from:	**the South African Weather Bureau and included in Annexure A to this Contract Data provided by the *Employer***
7	**Title**	**There is no reference to Contract Data in this section of the core clauses and terms in italics used in this section are identified elsewhere in this Contract Data.**
8	**Risks and insurance**	
84.1	The *Employer* provides these insurances from the Insurance Table	**as stated for "Format A available on** *http://www.eskom.co.za/Tenders/InsurancePoliciesProcedures/Pages/EIMS_Policies_From_1_April_2014_To_31_March_2015.aspx* **(See Annexure B for basic guidance)**
84.1	The *Employer* provides these additional insurances	**as stated for "Format A" available on** *http://www.eskom.co.za/Tenders/InsurancePoliciesProcedures/Pages/EIMS_Policies_From_1_April_2014_To_31_March_2015.aspx* **(See Annexure B for basic guidance)**

84.2	The minimum limit of indemnity for insurance in respect of loss of or damage to property (except the *works*, Plant, Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the *Contractor*) caused by activity in connection with this contract for any one event is	**Whatever the *Contractor* deems necessary in addition to that provided by the *Employer*.**
84.2	The minimum limit of indemnity for insurance in respect of death of or bodily injury to employees of the *Contractor* arising out of and in the course of their employment in connection with this contract for any one event is	**As prescribed by the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 and the *Contractor's* common law liability for people falling outside the scope of the Act with a limit of Indemnity of not less than R500 000 (Five hundred thousand Rands).**
9	**Termination**	**There is no reference to Contract Data in this section of the core clauses and terms in italics used in this section are identified elsewhere in this Contract Data.**
10	**Data for main Option clause**	
A	**Priced contract with activity schedule**	**There is no reference to Contract Data in this Option and terms in italics are identified elsewhere in this Contract Data.**
11	**Data for Option W1**	
W1.1	The *Adjudicator* is	**the person selected from the ICE-SA Division (or its successor body) of the South African Institution of Civil Engineering Panel of Adjudicators by the Party intending to refer a dispute to him. (see www.ice-sa.org.za). If the Parties do not agree on an Adjudicator the Adjudicator will be appointed by the Arbitration Foundation of Southern Africa (AFSA).**
	Address	
	Tel No.	
	Fax No.	
	e-mail	
W1.2(3)	The *Adjudicator nominating body* is:	**the Chairman of ICE-SA a joint Division of the South African Institution of Civil Engineering and the London Institution of Civil Engineers. (See www.ice-sa.org.za) or its successor body.**
W1.4(2)	The *tribunal* is:	**Arbitration.**
12	**Data for secondary Option clauses**	
X2	**Changes in the law**	**There is no reference to Contract Data in this Option and terms in italics are identified elsewhere in this Contract Data.**

X7	**Delay damages (but not if Option X5 is also used)**	
X7.1	Delay damages for Completion of the whole of the *works* are	**R10 000.00 per day up to a limit of R450 000.00**
X15	**Limitation of the *Contractor*'s liability for his design to reasonable skill & care**	**There is no reference to Contract Data in this Option and terms in italics are identified elsewhere in this Contract Data.**
X16	**Retention (not used with Option F)**	
X16.1	The *retention free amount* is	**R0**
	The *retention percentage* is	**5%**
X18	**Limitation of liability**	
X18.1	The *Contractor*'s liability to the *Employer* for indirect or consequential loss is limited to:	**R0.0 (zero Rand)**
X18.2	For any one event, the *Contractor*'s liability to the *Employer* for loss of or damage to the *Employer*'s property is limited to:	**the amount of the deductibles relevant to the event described in the insurance policy format selected in the data for clause 84.1 above, which policy is available on** *http://www.eskom.co.za/Tenders/InsurancePoliciesProcedures/Pages/EIMS_Policies_From_1_April_2014_To_31_March_2015.aspx*
X18.3	The *Contractor*'s liability for Defects due to his design which are not listed on the Defects Certificate is limited to	**The greater of** • **the total of the Prices at the Contract Date and** • **the amounts excluded and unrecoverable from the *Employer*'s assets policy for correcting the Defect (other than the resulting physical damage which is not excluded) plus R15M first amount payable in terms of the *Employer*'s assets policy.**
X18.4	The *Contractor*'s total liability to the *Employer* for all matters arising under or in connection with this contract, other than excluded matters, is limited to:	**The total of the Prices other than for the additional excluded matters.** **The *Contractor's* total liability for the additional excluded matters is not limited.** **The additional excluded matters are amounts for which the *Contractor* is liable under this contract for** • **Defects due to his design which arise before the Defects Certificate is issued,** • **Defects due to manufacture and fabrication outside the Site,** • **loss of or damage to property (other than the *works*, Plant and Materials),** • **death of or injury to a person and** • **infringement of an intellectual property right.**
X18.5	The *end of liability date* is	**(i) 5 years after the *defects date* for latent Defects and**

		(ii) The date on which the liability in question prescribes in accordance with the Prescription Act No. 68 of 1969 (as amended or in terms of any replacement legislation) for any other matter. **A latent Defect is a Defect which would not have been discovered on reasonable inspection by the *Employer* or the *Supervisor* before the *defects date*, without requiring any inspection not ordinarily carried out by the *Employer* or the *Supervisor* during that period. If the *Employer* or the *Supervisor* do undertake any inspection over and above the reasonable inspection, this does not place a greater responsibility on the *Employer* or the *Supervisor* to have discovered the Defect.**
Z	**The *Additional conditions of contract* are**	**Z1 to Z12 always apply.**

Z1 Cession delegation and assignment

Z1.1 The *Contractor* does not cede, delegate or assign any of its rights or obligations to any person without the written consent of the *Employer.*

Z1.2 Notwithstanding the above, the *Employer* may on written notice to the *Contractor* cede and delegate its rights and obligations under this contract to any of its subsidiaries or any of its present divisions or operations which may be converted into separate legal entities as a result of the restructuring of the Electricity Supply Industry.

Z2 Joint ventures

Z2.1 If the *Contractor* constitutes a joint venture, consortium or other unincorporated grouping of two or more persons or organisations then these persons or organisations are deemed to be jointly and severally liable to the *Employer* for the performance of this contract.

Z2.2 Unless already notified to the *Employer*, the persons or organisations notify the *Project Manager* within two weeks of the Contract Date of the key person who has the authority to bind the *Contractor* on their behalf.

Z2.3 The *Contractor* does not alter the composition of the joint venture, consortium or other unincorporated grouping of two or more persons without the consent of the *Employer* having been given to the *Contractor* in writing.

Z3 Change of Broad Based Black Economic Empowerment (B-BBEE) status

Z3.1 Where a change in the *Contractor's* legal status, ownership or any other change to his business composition or business dealings results in a change to the *Contractor*'s B-BBEE status, the *Contractor* notifies the *Employer* within seven days of the change.

Z3.2 The *Contractor* is required to submit an updated verification certificate and necessary supporting documentation confirming the change in his B-BBEE status to the *Project Manager* within thirty days of the notification or as otherwise instructed by the *Project Manager*.

Z3.3 Where, as a result, the *Contractor's* B-BBEE status has decreased since the Contract Date the

Employer may either re-negotiate this contract or alternatively, terminate the *Contractor*'s obligation to Provide the Works.

Z3.4 Failure by the *Contractor* to notify the *Employer* of a change in its B-BBEE status may constitute a reason for termination. If the *Employer* terminates in terms of this clause, the procedures on termination are P1, P2 and P3 as stated in clause 92, and the amount due is A1 and A3 as stated in clause 93.

Z4 Confidentiality

Z4.1 The *Contractor* does not disclose or make any information arising from or in connection with this contract available to Others. This undertaking does not, however, apply to information which at the time of disclosure or thereafter, without default on the part of the *Contractor*, enters the public domain or to information which was already in the possession of the *Contractor* at the time of disclosure (evidenced by written records in existence at that time). Should the *Contractor* disclose information to Others in terms of clause 25.1, the *Contractor* ensures that the provisions of this clause are complied with by the recipient.

Z4.2 If the *Contractor* is uncertain about whether any such information is confidential, it is to be regarded as such until notified otherwise by the *Project Manager*.

Z4.3 In the event that the *Contractor* is, at any time, required by law to disclose any such information which is required to be kept confidential, the *Contractor*, to the extent permitted by law prior to disclosure, notifies the *Employer* so that an appropriate protection order and/or any other action can be taken if possible, prior to any disclosure. In the event that such protective order is not, or cannot, be obtained, then the *Contractor* may disclose that portion of the information which it is required to be disclosed by law and uses reasonable efforts to obtain assurances that confidential treatment will be afforded to the information so disclosed.

Z4.4 The taking of images (whether photographs, video footage or otherwise) of the *works* or any portion thereof, in the course of Providing the Works and after Completion, requires the prior written consent of the *Project Manager*. All rights in and to all such images vests exclusively in the *Employer*.

Z4.5 The *Contractor* ensures that all his subcontractors abide by the undertakings in this clause.

Z5 Waiver and estoppel: Add to core clause 12.3:

Z5.1 Any extension, concession, waiver or relaxation of any action stated in this contract by the Parties, the *Project Manager*, the *Supervisor*, or the *Adjudicator* does not constitute a waiver of rights, and does not give rise to an estoppel unless the Parties agree otherwise and confirm such agreement in writing.

Z6 Health, safety and the environment: Add to core clause 27.4

Z6.1 The *Contractor* undertakes to take all reasonable precautions to maintain the health and safety of persons in and about the execution of the *works*. Without limitation the *Contractor*:

- accepts that the *Employer* may appoint him as the "Principal Contractor" (as defined and provided for under the Construction Regulations 2014 (promulgated under the Occupational Health & Safety Act 85 of 1993) ("the Construction Regulations") for the Site;
- warrants that the total of the Prices as at the Contract Date includes a sufficient amount for proper compliance with the Construction Regulations, all applicable health & safety laws and regulations and the health and safety rules, guidelines and procedures provided for in this contract and generally for the proper maintenance of health & safety in and about the execution of *works*; and
- undertakes, in and about the execution of the *works*, to comply with the Construction Regulations and with all applicable health & safety laws and regulations and rules,

guidelines and procedures otherwise provided for under this contract and ensures that his Subcontractors, employees and others under the *Contractor's* direction and control, likewise observe and comply with the foregoing.

Z6.2 The *Contractor*, in and about the execution of the *works*, complies with all applicable environmental laws and regulations and rules, guidelines and procedures otherwise provided for under this contract and ensures that his Subcontractors, employees and others under the *Contractor's* direction and control, likewise observe and comply with the foregoing.

Z7 Provision of a Tax Invoice and interest. Add to core clause 51

Z7.1 Within one week of receiving a payment certificate from the *Project Manager* in terms of core clause 51.1, the *Contractor* provides the *Employer* with a tax invoice in accordance with the *Employer*'s procedures stated in the Works Information, showing the amount due for payment equal to that stated in the payment certificate.

Z7.2 If the *Contractor* does not provide a tax invoice in the form and by the time required by this contract, the time by when the *Employer* is to make a payment is extended by a period equal in time to the delayed submission of the correct tax invoice. Interest due by the *Employer* in terms of core clause 51.2 is then calculated from the delayed date by when payment is to be made.

Z7.3 The *Contractor* (if registered in South Africa in terms of the companies Act) is required to comply with the requirements of the Value Added Tax Act, no 89 of 1991 (as amended) and to include the *Employer*'s VAT number 4740101508 on each invoice he submits for payment.

Z8 Notifying compensation events

Z8.1 Delete from the last sentence in core clause 61.3, "unless the *Project Manager* should have notified the event to the *Contractor* but did not".

Z9 *Employer's* limitation of liability

Z9.1 The *Employer's* liability to the *Contractor* for the *Contractor's* indirect or consequential loss is limited to R0.00 (zero Rand)

Z9.2 The *Contractor*'s entitlement under the indemnity in 83.1 is provided for in 60.1(14) and the *Employer*'s liability under the indemnity is limited.

Z10 Termination: Add to core clause 91.1, at the second main bullet point, fourth sub-bullet point, after the words "against it":

Z10.1 or had a business rescue order granted against it.

Z11 Addition to secondary Option X7 Delay damages (if applicable in this contract)

Z11.1 If the amount due for the *Contractor*'s payment of delay damages reaches the limits stated in this Contract Data for Option X7 or Options X5 and X7 used together, the *Employer* may terminate the *Contractor*'s obligation to Provide the Works using the same procedures and payment on termination as those applied for reasons R1 to R15 or R18 stated in the Termination Table.

Z12 Ethics

For the purposes of this Z-clause, the following definitions apply:

Affected Party means, as the context requires, any party, irrespective of whether it is the *Contractor* or a third party, such party's employees, agents, or Subcontractors or Subcontractor's employees, or any one or more of all of these parties' relatives or friends,

Coercive Action means to harm or threaten to harm, directly or indirectly, an Affected Party or the property of an Affected Party, or to otherwise influence or attempt to influence an Affected Party to act unlawfully or illegally,

Collusive Action means where two or more parties co-operate to achieve an unlawful or illegal purpose, including to influence an Affected Party to act unlawfully or illegally,

Committing Party means, as the context requires, the *Contractor*, or any member thereof in the case of a joint venture, or its employees, agents, or Subcontractors or the Subcontractor's employees,

Corrupt Action means the offering, giving, taking, or soliciting, directly or indirectly, of a good or service to unlawfully or illegally influence the actions of an Affected Party,

Fraudulent Action means any unlawfully or illegally intentional act or omission that misleads, or attempts to mislead, an Affected Party, in order to obtain a financial or other benefit or to avoid an obligation or incurring an obligation,

Obstructive Action means a Committing Party unlawfully or illegally destroying, falsifying, altering or concealing information or making false statements to materially impede an investigation into allegations of Prohibited Action and

Prohibited Action means any one or more of a Coercive Action, Collusive Action Corrupt Action, Fraudulent Action or Obstructive Action.

Z 12.1 A Committing Party may not take any Prohibited Action during the course of the procurement of this contract or in execution thereof.

Z 12.2 The *Employer* may terminate the *Contractor*'s obligation to Provide the Works if a Committing Party has taken such Prohibited Action and the *Contractor* did not take timely and appropriate action to prevent or remedy the situation, without limiting any other rights or remedies the *Employer* has. It is not required that the Committing Party had to have been found guilty, in court or in any other similar process, of such Prohibited Action before the *Employer* can terminate the *Contractor*'s obligation to Provide the Works for this reason.

Z 12.3 If the *Employer* terminates the *Contractor*'s obligation to Provide the Works for this reason, the procedures and amounts due on termination are respectively P1, P2 and P3, and A1 and A3.

Z 12.4 A Committing Party co-operates fully with any investigation pursuant to alleged Prohibited Action. Where the *Employer* does not have a contractual bond with the Committing Party, the *Contractor* ensures that the Committing Party co-operates fully with an investigation.

Annexure B: Insurance provided by the Employer

These notes are provided as guidance to tendering contractors and the Contractor about the insurance provided by the Employer. The Contractor must obtain its own advice. Details of the insurance itself are available from the internet web link given below.

1. For the purpose of works contracts, insurance provided by Eskom (the *Employer*) has been arranged on the basis of "project" or "contract" value, where the value is the total of the Prices at Completion of the whole of the works including VAT.

   A "project" is a collection of contracts or work packages to be undertaken as part of a single identified capital expansion or refurbishment of a particular asset or facility.

   A "contract" is a single contract not linked to or being part of a "project".

2. For ECC3 there are three main "formats" of cover and deductible structure; Format A, Format B and Format Dx.

   Format A is for a project or contract value less than or equal to R350M (three hundred and fifty million Rand) inclusive of VAT.

   Format B is for a project or contract value greater than R350M .(three hundred and fifty million Rand) inclusive of VAT.

   In the case of contracts / packages within a project:

   - For a contract / package of R50M which is part of a R400M project, Format B will apply
   - For a contract / package of R250M which is part of a R6 billion project, Format B will apply;
   - For a contract / package of R120M which is part of a R350M project Format A will apply;

   For a contract which is not part of a project the same limits apply:

   - For a contract of R50M, Format A will apply
   - For a contract of R355M, Format B will apply.

   Format Dx applies only to Distribution Division projects and contracts. If a Distribution Division project or contract exceeds the Format A limit, the Eskom Insurance Management Services [EIMS] need to be contacted for advice on how to formulate the insurance cover. Cover and deductibles for Distribution Division are per the relevant policy available on the internet web link given below.

   Format A generally applies to Transmission Division projects and contracts. If a Transmission Division project or contract exceeds the Format A limit, the Eskom Insurance Management Services [EIMS] need to be contacted for advice on how to formulate the insurance cover.

3. Tendering contractors should note that cover provided by the *Employer* is only per the policies available on the internet web link listed below and may not be the cover required by the tendering contractor or as intended by each of the listed insurances in the left hand column of the Insurance Table in clause 84.2. In terms of clause 84.1 "the *Contractor* provides the insurances stated in the Insurance Table except any insurance which the *Employer* is to provide". Hence the *Contractor* provides insurance which the *Employer* does not provide and in cases where the *Employer* does provide insurance the *Contractor* insures for the difference between what the Insurance Table requires and what the *Employer* provides.

4. When the Marine Insurance is required the *Contractor* needs to obtain a copy of the latest edition of Eskom's Marine Policies Procedures found at internet website given below.

5. **Further information and full details of all Eskom provided policies and procedures may be obtained from:**

http://www.eskom.co.za/live/content.php?Item_ID=9248

C1.2 Contract Data

Part two - Data provided by the *Contractor*

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(18)	The *working areas* are the Site and	
24.1	The *Contractor's* key persons are: 1 Name: Job: Responsibilities: Qualifications: Experience: 2 Name: Job Responsibilities: Qualifications: Experience:	**CV's (and further key persons data including CVs) are appended to Tender Schedule entitled .**
11.2(3)	The *completion date* for the whole of the *works* is	
11.2(14)	The following matters will be included in the Risk Register	
31.1	The programme identified in the Contract Data is	
A	**Priced contract with activity schedule**	
11.2(20)	The *activity schedule* is in	

11.2(30)	The tendered total of the Prices is	**(in figures)** **(in words), excluding VAT**

PART 2: PRICING DATA
ECC3 Option A

Document reference	Title	No of pages
C2.1	Pricing assumptions: Option A	
C2.2	The *activity schedule*	

C2.1 Pricing assumptions: Option A

How work is priced and assessed for payment

Clause 11 in NEC3 Engineering and Construction Contract, (ECC3) Option A states:

Identified and defined terms 11 11.2

(20) The Activity Schedule is the *activity schedule* unless later changed in accordance with this contract.

(27) The Price for Work Done to Date is the total of the Prices for

- each group of completed activities and
- each completed activity which is not in a group.

A completed activity is one which is without Defects which would either delay or be covered by immediately following work.

(30) The Prices are the lump sum prices for each of the activities on the Activity Schedule unless later changed in accordance with this contract.

This confirms that Option A is a lump sum form of contract where the work is broken down into activities, each of which is priced by the tendering contractor as a lump sum. Only completed activities are assessed for payment at each assessment date; no part payment is made if the activity is not completed by the assessment date.

Function of the Activity Schedule

Clause 54.1 in Option A states: “Information in the Activity Schedule is not Works Information or Site Information”. This confirms that specifications and descriptions of the work or any constraints on how it is to be done are not included in the Activity Schedule but in the Works Information. This is further confirmed by Clause 20.1 which states, “The *Contractor* Provides the Works in accordance with the Works Information”. Hence the *Contractor* does **not** Provide the Works in accordance with the Activity Schedule. The Activity Schedule is only a pricing document.

Link to the programme

Clause 31.4 states that “The *Contractor* provides information which shows how each activity on the Activity Schedule relates to the operations on each programme which he submits for acceptance”. Ideally the tendering contractor will develop a high level programme first then resource each activity and thus arrive at the lump sum price for that activity both of which can be entered into the *activity schedule*.

Preparing the *activity schedule*

Generally it is the tendering contractor who prepares the *activity schedule* by breaking down the work described within the Works Information into suitable activities which can be well defined, shown on a programme and priced as a lump sum.

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 his *activity schedule* and be priced accordingly.

It is assumed that in preparing his *activity schedule* the *Contractor:*

- Has taken account of the guidance given in the ECC3 Guidance Notes pages 19 and 20;
- Understands the function of the Activity Schedule and how work is priced and paid for;
- Is aware of the need to link the Activity Schedule to activities shown on his programme;
- Has listed and priced activities in the *activity schedule* which are inclusive of everything necessary and incidental to Providing the Works in accordance with the Works 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 activity within the Prices of other listed activities in order to fulfil the obligation to complete the *works* for the tendered total of the Prices.
- Understands there is no adjustment to the lump sum Activity Schedule price if the amount, or quantity, of work within that activity later turns out to be different to that which the *Contractor* estimated at time of tender. The only basis for a change to the Prices is as a result of a compensation event.

C2.2 the *activity schedule*

Item	Description	UoM	Qty	Rate	Total
1	The decommissioning of the existing metal detectors.	Ea	6		
2	Engineering and design of a suitable replacement metal detector.	Sum			
3	Supply and installation of six metal detectors; one metal detector for each belt.	Ea	6		
4	Supply and Install Metal detection system complete	Ea	6		
5	Supply and Install Marking device	Ea	6		
6	Supply and Install Clip detector	Ea	6		
7	Electrical and Mechanical consumables, including conduit with connectors for signal cables	Sum			
8	Provide and install communication system	Sum			
9	COC	Sum			
10	Commissioning of newly installed metal detectors	Sum			
11	Site Establishment				
11.1	Safety, Health and Environmental adherence (This includes but is not limited to the Safety File and, Environmental Management Plan and Waste Management Plan)	Sum			
11.2	Quality Assurance Adherence (This includes but is not limited to all quality documentation and all tests needed to prove the functioning of the works)	Sum			
11.3	Training (Includes manuals and any test models that may be required)	Sum			
11.4	Supply As-Built drawings and documentation of the total system	Sum			
11.5	Supply Maintenance, Engineering and Operating Manuals of all new equipment	Sum			

11.6	Transportation	Sum			
11.7	Traveling	Sum			
11.8	Accommodation	Sum			
11.9	List any other in detail	Sum			

PART 3: SCOPE OF WORK

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

C3.1: EMPLOYER'S WORKS INFORMATION

Contents

1 Description of the works

1.1 Executive overview

Matimba Power Station requires assistance with compliance to the Occupational, Health and Safety Act (1993) under Electrical Machinery Regulation (2011) Section 9. The contractor is to supply the required services in regard to all hazardous locations, assistance with all electrical installations, do repairs including installing new explosion equipment where required, issue specialized and normal area certificate of compliance, provide training and assistance with the applicable documentation as per the supplied scope of work.

1.2 *Employer*'s objectives and purpose of the *works*

To provide compliance service for the Hazardous locations as per SANS 10108 to Matimba Power Station and do repairs to comply as per the standard.

To ensure Matimba Power Station complies in terms of the Occupational, Health and Safety Act (1993) Under Electrical Machinery Regulation (2011) Section 9, and codes and standards as stipulated in section 3.1 of this document.

1.3 Interpretation and terminology

The following abbreviations are used in this Works Information:

Abbreviation	**Meaning given to the abbreviation**
EMD	Electrical Maintenance Department
EMF	Electromotive Force
EMR	Electrical Machinery Regulations
FRM	Fire Risk Management
GMR	General Machinery Regulations
HAZLOC	Hazardous Location
HOC	Hazardous Occurrence
IP	Ingress Protection
LEL	Lower Explosive Limit
MIE	Master Installation Electrician
MMD	Mechanical Maintenance Department
MSDS	Material Safety Data Sheets
OH&S	Occupational Hygiene and Safety
PPE	Personnel Protective Equipment
SABS	South African Bureau of Standards
SANS	South African National Standards

2 Management and start up

2.1 Management meetings

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

Title and purpose	Approximate time & interval	Location	Attendance by:
Project Kick-Off Meeting	Once, before contract start	Matimba Power Station	**Contractor's** Project Manager, Project Supervisor, Engineers and other attendees at the discretion of the *Contractor*. ***Employer's*** Project Team
Progress Meeting	Once a week.	Matimba Power Station	***Contractor's*** *Project Manager* or Project Supervisor and Engineer ***Employer's*** Project Team
Progress Report and Assessment Meeting	Monthly	Matimba Power Station	***Contractor's*** *Project Manager* ***Employer's*** Project Team
Risk Management Review	Monthly	Matimba Power Station	***Contractor's*** *Project Manager* or Project Supervisor ***Employer's*** Project Team
Project Meeting	When the need arises	Matimba Power Station	***Contractor's*** *Project Manager* ***Employer's*** Project Team

Meetings of a specialist nature may be convened as specified elsewhere in this Works Information or if not so specified by persons and at times and locations to suit the Parties, the nature and the progress of the *works*. Records of these meetings shall be submitted to the *Project 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.

2.2 Documentation

2.2.1 General

Documentation requirements covers the life cycle of the project from the initial engineering stages through to installation and commissioning including operating, maintenance and the training stages of the project. Not only must these documents be comprehensive and complete but comply too strict document control and revision procedures.

The *Contractor* is responsible to plan the supply of the documentation during the various project stages and to provide the documentation in accordance with the key scheduled project milestone dates. A document is thus any written or pictorial information describing, defining, specifying or certifying activities, requirements, procedures or results.

All the drawings issued by the *Employer* for this contract is copyright protected and are not to be copied by the *Contractor.*

The *Contractor* submits all documentation as per communication procedure to the *Project Manager.* All manuals, documents and engineering documentation shall be presented in British English.

The following standards are adhered to:

240-56536505	-	Hazardous Locations Eskom Standard
PA/177/001	-	Matimba Power Station Drawing Office Guideline
36-943	-	Engineering Drawing Office and Engineering Documentation Standard
240-93576498	-	KKS coding Standard
240-71432150	-	Plant Labelling Standard

2.2.2 Documentation Management System

A comprehensive documentation management system is provided. All documentation is maintained and updated until completion. Any change is propagated automatically to all related documentation. All documentation forms an integral part of the documentation system.

The *Contractor* to include the *Project Manager* accepted drawing head on all drawings submitted to the *Project Manager*. The format of all documents is submitted to the *Project Manager* for acceptance.

The following standards are adhered to:

- 240-86973501: Eskom Engineering Drawing Standard – Common Requirements

2.2.3 Modifications

The *Contractor* provides additional and amended pages sufficient for all copies of manuals or document sets to ensure that they are complete, inclusive of detail such as final settings and modifications. Such information is forwarded to the *Project Manager,* within the *period of reply*, following receipt of agreement to design modifications.

2.2.4 Documentation Control

The *Contractor* implements a comprehensive document control system for all documents, their revision status and of the document status in relation to the “as built” and "as designed” plant status. Procedures, document control, flow diagrams and indexes are included in this system. The drawing register contains the following information and is submitted monthly, in a Microsoft Excel format, to the *Project Manager*:

- Drawing number (Employer and maker’s number)
- Revision
- Approval status
- Location of drawing at that stage
- Drawing KKS number
- Drawing description
- Sheet number
- Transmittal number

2.2.5 CAD Systems

The *Employer* uses Bentley MicroStation V8i Select Series3 as their CAD system. All drawings supplied under this contract will be in the required MicroStation CAD format.

For documentation generated on the CAD system, the hardware and the software will enable the *Employer* to undertake the same level of design and changes as done by the *Contractor*. Thus, implying that all drawings supplied to the *Employer* shall be unprotected and fully editable by the *Employer.*

Acceptance is obtained from the *Project Manager* for the format, content, layout and quality of all drawings supplied as part of the *Works* and is included in the documentation synopsis.

At the completion of the last stage of the w*orks*, the *Contractor* supplies a copy of uncompressed data files reflecting all latest revisions of all drawings.

2.3 Health and safety risk management

2.3.1 General

The *Contractor* complies with the following:

- Matimba Power Station Health and Safety Standards as per Matimba Power Station Health & Safety Specifications for Contractors (PA/270/003) attached to the Invitation to Tender. This procedure will be handed over during tender enquiry and will enable the successful Tenderers to compile a Health & Safety plan that has to be approved by the Employer prior to commencement of work.
- Compliance with Eskom & Matimba No Smoking Policy.
- Adhere to the OHS Act 85 of 1993.
- All staff will undergo Safety Induction, presented by Matimba Risk Management Department.
- In the event that any grinding or welding activities will take place, the Contractor will apply for hot work approval. The Contractor will further ensure that there is always a designated fire watch when these activities are being conducted.

Employer's site regulations as stipulated in Form PA/270/003, covering the following:

- Clean lines
- Storage of material
- Safety precautions and fire prevention
- Permits to work
- Other Contractor's work
- Maintenance staff to witness erection
- Supervision
- Handing over of works
- Contractor's Site

2.3.2 Matimba Permit to Work System

The *Contractor* will ensure that he/she is informed of all the requirements of Eskom's Plant Safety Regulations and Operating regulations for High Voltage Systems (ORHVS) and that he/she at all times comply to the requirements of these Regulations. The Employer will provide the Contractor with a Responsible Person for the duration of the contract.

The Responsible Person shall ensure that:

- The conditions of permits and cautionary notices are strictly adhered to.
- The lockout procedures, mechanical as well as electrical, are strictly adhered to and any deviations shall be corrected immediately.
- The safe work procedures as laid down by Matimba Power Station and as determined by the Risk Assessment, shall be followed.
- The workers register and cautionary notices are discussed daily with workers.

2.3.3 SHE documentation required from the *Contractor* at tender

The *Contractor* shall provide the following documents in terms of Health, Safety and Environmental performance, should the *Contractor* not provide this information it will be assumed that it does not exist:

- Letter of good standing with COID or any insurance body.
- An Organogram indicating the names of all persons that will hold legal appointments on the project in terms of the Act.
- The expected roles, responsibilities and authority of those who are proposed to receive legal appointments.
- Provide an overview of the system / program that is utilized to manage Safety, Health and Environment.
- Proof of required working at heights training certificates according to Eskom's Working at Heights Procedure (32-418).

2.3.4 Health and Safety Plan (Construction Regulations)

The Contractor shall compile a Health and Safety Plan, filed in a Health and Safety File, comprising of the following:

- Proof of the contracting company's own Health and Safety Policy.
- Proof of appointments, assignments and designations as required in terms of the Occupational Health and Safety Act, No 85 of 1993.
- Proof of Risk Assessments regarding Hazards identified and proof of training of own employees regarding controls derived from the risk assessment.
- Proof of Safe Work Procedures that is derived out of the Risk Assessments.
- Proof of the contracting company's own Emergency Plan that will deal with their own emergencies on site.
- Proof of a Fall Protection Plan, if required to perform work at elevated levels developed by a competent person appointed by the contracting company. The Contractor ensures that Safety Harnesses are used for all work carried out in elevated positions, as defined in the Occupational Health and Safety Act, No 85 of 1993 or any other Code of Practice or standard or the Construction Regulations.
- Proof of "Notification to perform Construction Work" – a copy of the notification addressed to the Department of Labour as required Regulation 3 of the Construction Regulations.
- Proof of an Induction Program (it is advised that the Matimba SHE Rules are used as a Guide) and an attendance register signed by the Contractor's employees prior the commencement of any construction work on site.
- Proof of the contracting company's employees Medical Fitness Certificates. (Must still be valid – one year. May only have been issued by an occupational health practitioner.
- Proof of Contractor's weekly Health and Safety Rep Inspections regarding its own site and where detached work is performed.
- Proof of Personal Protective Equipment (PPE) issued to Contractor's employees.
- Proof of contracting company's Accident/Incident Reporting and Investigation System.
- Proof of checklists and where applicable test certificates, regarding Contractor's tools, equipment, machinery, mobile equipment, vessels under pressure and any other applicable checks required by the Act.
- A "Section 37(2) Agreement with Mandatory" needs to be drawn up by the Employer and co-signed by the Contractor before work can commence.
- The Safety Officer employed by Matimba Power Station will audit Health and Safety Plans to ensure compliance with the provisions of the Act.
- In terms of Clause 4 (b) of the Construction Regulations, the Employer points out the hazards or risks that are associated with the works.

2.3.5 Occupational Health and Safety Act, Section 37

The Contractor shall comply with the following:

- The Occupational Health and Safety Act and all Regulations made there under.
- All Employer Safety and Operating Procedures, which are attached hereto.

The Contractor acknowledges that he is fully aware of the requirements of all the above and undertakes to employ only people who have been duly authorised in terms thereof and who have received enough safety training to ensure that they can comply therewith.

The Contractor undertakes not to do, or not to allow anything to be done which will contravene any of the provisions of the Act, Regulations or Safety and Operating Procedures.

The Contractor shall appoint a person who will liaise with the Employer Safety Officer responsible for the premises relevant to this contract. The person so appointed shall on request:

- Supply the Employer's Safety Officer with copies of minutes of all Health and Safety Committee meetings, whenever he is required to do so.
- Supply the Employer's Safety Officer with copies of all appointments in respect of Employees employed on this contract, in terms of the Act and Regulations and shall advise the Employer's Safety Officer of any changes thereto.

The Employer may, at any stage during the currency of this agreement be entitled to:

- Do safety audits at the Contractor's premises, its work places and on its employees.
- Refuse any employees, sub-contractor or agent of the Contractor access to its premises if such persons are found to commit any unlawful act or any unsafe working practice or is found not to be authorised or qualified in terms of the Act.
- Issue the Contractor with a work-stop order or a compliance order should the Employer become aware of any unsafe working procedures or conditions or any non-compliance with the Act, Regulations and Procedures by the Contractor or any of its employees, sub-contractors or agents. Stoppages of this nature will not constitute a compensation event.

2.3.6 Occupational Health and Safety Act additional information

- The Medical Station is available on site during normal working hours. The afterhours emergency telephone number is 014-763-8311 or from a Matimba phone the extension is 5000 that can be phoned for assistance.
- Any injury needs to be reported to the Employer's Representative within 1 hour of the incident happening.
- Should any medical care be required the Employer's Representative needs to accompany the Contractor's employees to either medical station or hospital.
- Fire protection and rescue services are available on site 24 hours per day.
- The Contractor must comply with Matimba Power Station Contractor's Safety Manual. This manual is available on request from the Employer's Representative.
- The Contractor must comply with Eskom's No-Smoking Policy.
- The Contractor must comply with the Occupational Health and Safety Act 85 of 1993.
- The following will be an advantage:
- NOSA accreditation.
- NOSA MBO system in place.
- The Contractor must appoint a Safety Representative with at least five years' experience to assist the Employer's Representative to:
    - Identify possible hazards, dangers and risks.
    - Ensure a safe working environment.
    - Ensure potentially dangerous conditions and actions.
- The Employer's Representative shall be entitled to request the Contractor to stop work, without penalty to the Employer when the Contractor fails to conform to the prescribed and accepted health and safety standards or contravene the health and safety sections and regulations.

- The Employer's Representative must be informed within 24 hours of any injury or damage to property or equipment.

2.3.7 Housekeeping

Working areas are cleaned daily. All electrical cables and hoses are routed so as not to cross over floors and walkways. All equipment is packed neatly without interference to access. All excess scaffolding material is removed from working areas after the scaffolding has been erected. All skips required will be supplied by the Employer and needs to be arranged in advance by the Contractor. The Employer's Representative shall be entitled to request the Contractor to stop work, without penalty to the Employer when the Contractor fails to conform to the prescribed and accepted housekeeping standards.

2.3.8 Barricading

Access restriction to danger zones is done using handrail type guards of at least 1,2 meters high, which can block access to the danger zones. Symbolic safety signs depicting "Danger" and "No entry" are attached to the guards. All construction sites shall be adequately barricaded to prevent unauthorised entry.

2.3.9 Scaffolding

The Employer is responsible for the supply, erection and dismantling of scaffolding. The Contractor must give the Employer 7 days' notice of his scaffolding requirements.

2.4 Eskom Life Saving Rules

In the interest of promoting a safe and healthy working environment, the *Eskom* executive committee has approved the implementation of cardinal rules, to improve safety in the organisation. These rules will also be applicable to all contracting staff. The business is concerned about the emotional, social as well as economic effect of all unnecessary incidents, and would like to correct behaviour pro-actively. These rules are determined beforehand to enable the organisation to clearly communicate the established cardinal rules and how to deal with non-compliance to the workforce prior to the implementation of such rules. These rules have been implemented as from 1 January 2009 and will be strictly enforced. Failure by any person or *Contractor* engaged in doing business with *Eskom* to adhere to these rules, will lead to serious action being taken with serious consequences. These actions include termination of service of an individual and even blacklisting of contractors not taking the rules seriously. It is therefore strongly advised that these rules be taken seriously, communicated to all of the *Contractor's* staff, ensure that they all understand the rules, understand the consequences of violating a rule and sign documentation to indicate that they understand and acknowledge the implications of these rules.

There are 5 identified cardinal rules and they are as follows:

2.4.1 Rule 1: Open, isolate, test, earth, bond, and/or insulate before touch:

This rule is applicable to any person working on a plant operating above 1 000 V. No person may work on any electrical network unless:

- He/she is trained and authorised as competent for the task to be done;
- A pre-task risk assessment to identify all risks and hazards has been conducted prior to any work commencing;
- An equipotential zone is created for each worker on the job site by earthing, bonding, and/or insulating according to approved procedures;
- All conducting material is connected together, all staff on site wear electrical safety shoes, and insulating techniques are applied according to standards; and
- The authorised person (team leader) has certified and shown all team members that the apparatus is safe to work on.

2.4.2 Rule 2: Hook up at heights:

Working at height is defined as any work performed above a stable work surface or where a person puts himself/herself in a position where he/she exposes himself/herself to a fall from or into. No person may work at height where there is a risk of falling unless:

- A pre-task risk assessment to identify all risks and hazards has been conducted prior to commencing any work at height;
- He/she is appropriately trained;
- He/she is appropriately secured during ascending and descending; and
- He/she is using an approved fall arrest system where applicable.

2.4.3 Rule 3: Buckle up:

No person may drive any vehicle on Eskom business and/or on Eskom premises:

- Unless the driver and all passengers are wearing seat belts.

2.4.4 Rule 4: Be sober:

"Under the influence" means the use of alcohol, drugs, and/or a controlled substance to the extent that:

- The individual's faculties are in any way impaired by the consumption or use of the substances; or
- The individual is unable to perform in a safe, productive manner; or
- The individual has a level of any such substance in his/her body that corresponds to or exceeds accepted medical/legal standards; or
- The individual has a level of alcohol in his/her body that is greater than 0.02% blood alcohol concentration.

This includes any level of an illegal substance in the body, irrespective of when the substance was used.

2.4.5 Rule 5: Ensure that you have a permit to work:

Where an authorisation limitation exists, no person shall work without the required Permit to Work (PTW), which is governed by the Plant Safety Regulations, Operating Regulations for High Voltage Systems (ORHVS) etc.

- No plant is to be returned to service without the cancellation of all permits on that plant in accordance with procedure.

NB: in the case of live work, a "live work declaration form" is to be completed by the authorised person who is the person responsible for the safe execution of work according to relevant standards and procedures.

Please ensure that these rules are understood and communicated with the urgency that they deserve. If any of these rules are unclear or the consequences not understood, please do not hesitate to discuss it with Eskom, Matimba Power Station.

2.5 Environmental constraints and management

2.5.1 Hazardous Waste

All waste introduced to and/or produced on Employer's Premises by the Contractor for this order, 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 1994 Ref.: BN0621-16296-5. (A copy of this document is available at the Power Station for reference purposes). All hazardous waste shall be disposed of by the Contractor into a skip provided by the Employer.

2.5.2 Environmental Management

Matimba has an Environmental Policy, PP/240/001 and the Environmental Management System Requirements for the Contractors Guide, PG/240/008, to which the Contractor and his employees must adhere. It is the responsibility of the Contractor to ensure that he obtains copies of the Matimba Environmental Policy, the legal register applicable to his area of responsibility, the aspect register and the Matimba procedures (applicable to the Contractor's area of responsibility) and to familiarize themselves on such procedures, within 5 days from the date of commencement of work at Matimba, to assist the Contractor and his/her employees to prevent pollution and to comply with legislative requirements. Copies of the above-mentioned documents shall be obtained from the Project Manager or Environmental Officer on the first day prior to commencement of work at Matimba. The Contractor shall submit proof to the Environmental Officer of Matimba that he and his employees have done all the necessary training on procedures and Policies supplied to them and that they do understand the contents of the procedures, registers and policies and will always adhere to them.

The Contractor adheres to the following rules:

- Provide sufficient storage containers, labelled depicting general or hazardous waste and store in a designated storage area
- No hazardous waste may be stored for a period of more than 90 days on the Matimba premises.
- Ensure that the Contractor's site does comply with the general good housekeeping practices. Redundant materials are moved to allocated sites. No scrap shall be stored in the Contractor's yard. Scrap is to be cleared from Site daily.
- All spillages (whether oil, grease, diesel, chemical, etc) are prevented at all times and where accidents do occur, immediate remedial actions are taken to clean-up the affected land using the appropriate spill-cleaning chemicals / absorbents.
- The Employer has provided special colour coded refuse bins around the Station. The Contractor ensures that all workers under his control strictly adhere to the correct usage of the bins:

  ~ Blue - Glass
  ~ Yellow - General
  ~ Green - Plastic
  ~ White - Tins
  ~ Orange - Hazardous

All steel / building rubble shall be taken to Matimba's Waste Sorting Area by the *Contractor.*

2.6 Quality assurance requirements

2.6.1 Quality Management System

The Contractor shall implement and maintain a quality management system that as a minimum meets the requirements of Generation Standard GGS 0462 Quality Management for Engineering and Construction Works. If the Contractor is registered, the appropriate ISO 9001:2000 Registration certificate of compliance must be supplied with the tender.

The Contractor further ensures that the subcontractor's programmes comply with the requirements of the Works Information.

The Contractor notifies the Project Manager of any changes to the Quality System and obtains agreement prior to implementation on existing orders and contracts.

2.6.2 Quality Documents Submitted with the Tender

The Contractor submits a copy of his quality policy and quality system procedures relevant to the Works.

The Contractor also submits a typical quality control plan.

The Project Manager evaluates the Contractor's capabilities with regards to quality assurance and quality control based on these submissions and the performance history of the Contractor. The Project Manager

performs pre-award assessments where necessary, giving further information to aid the selection process.

2.6.3 Quality Documents Submitted after the Contract Date

The documents submitted by the Contractor shall include the following:

- Copy of the Quality Manual.
- Copy of the Quality System Procedure.
- Copy of the Contract Quality Management Plan.
- Copy of Quality Control Plans.
- Copy of the proposed index of the QA/QC, inspection and test records.

The Contractor will further submit the following documents during the contract:

- Non-conformance reports (NCR's) raised by the Contractor.
- Notification of any planned changes to the Contractor's quality manual, quality system procedures, contract quality management plan or quality plan for acceptance by the Project Manager prior to implementation.
- Concession/production permit applications and supporting documentation.
- Data books and/or data packages.

2.6.4 Contract Quality Management Plan Requirement

The Contractor prepares a contract quality management plan that, where appropriate, indicates the following:

- Indicates the interface with the Contractor's quality system and applicable documents such as procedures and work instructions.
- Establishes communication channels between the Contractor and the Project Manager in respect of quality and the integration of such with prescribed contract communication channels.
- Identifies items or activities for which quality control plans will be prepared.
- Identifies the specifications, drawings and acceptance criteria for material for which quality control plans are not required.
- Identifies the areas or processes requiring special controls.
- Identifies the Contractor's Management Representative and personnel responsible for the control of quality activities and their relationship to the Contractor's management structure.
- Identifies the documents which are to be submitted to the Project Manager.
- Identifies the Contractor's quality monitoring programme.
- Indicates how specific subcontractors will be monitored

The Contractor periodically updates the contract quality management plan to reflect changes in any of the above details. The frequency of such updates is determined by the Project Manager but will not be greater than one year.

2.6.5 Quality Control Plan (QCP)

The Contractor's quality control plans cover inspection and test proposals for items or activities to be supplied as part of the works.

The quality control plan indicates the following as appropriate:

- The identification of the item.
- The material used.
- A list of the sequence of operations including inspections and tests.
- The identification of the specification, drawings or procedures for each operation.
- The acceptance criteria with reference to the appropriate technical specification, in-house, national or international standard and relevant clause number.
- The inspections and tests the Contractor has nominated for hold and witness points.
- Provision for inspections and tests nominated by the Project Manager.

- Provision for inspection status indication.
- Inspection and test records that are generated by the Contractor.

The quality control plans are reviewed by the Project Manager to allow for insertion of his specific requirements, including hold and witness points, prior to commencement of work. The Contractor does not commence work until the Project Manager accepts the Quality Control Plan.

2.6.6 Access to the *Contractor's* Premises and Facilities

The Contractor and/or its subcontractor gives access to the Supervisor and/or the Authority/Agency and the Regulator where appropriate to their premises and facilities at reasonable times to conduct quality assessments, audits, surveillances and inspections to establish compliance with the contractual requirements.

2.6.7 Inspection and Testing

The Contractor gives at least 72 hours advance notification to the Supervisor or the Authority for inspection/test and hold or witness points, which require their attendance. The Contractor confirms readiness for inspection at least 24 hours prior to the test.

The Contractor ensures that all work has been fully inspected, accepted and documented prior to requesting any inspection by the Supervisor.

2.6.8 Quality Records

The *Contractor* prepares and submits to the Project *Manager* an Index of QA/QC and inspection and test records prior to the commencement of work.

The *Project Manager* determines which documents are to be submitted during the performance of work and reviews the index and requests changes if required. The *Contractor* conforms to the Index approved by the *Project Manager.*

The *Contractor* ensures all records identify the items, equipment and/or activities to which they pertain and collates indexes and securely stores the records in such a manner that they are readily retrievable.

The *Contractor* implements appropriate administrative controls to limit access to prevent inadvertent loss of or damage to records.

The *Contractor* stores all quality records. The *Contractor* only destroys or discards quality records with the approval of the *Project Manager.*

The *Contractor* presents on completion of the works all quality records in the form of a data package. The package is indexed and shows the entire contents.

2.7 Programming constraints

2.7.1 Purpose

The purpose of the program and planning is to define the Employer's requirements for the time, cost and resource planning and control when using the NEC contract.

2.7.2 Scope

All project programming and contract progress monitoring for projects is based on NEC contract conditions.

2.7.3 Requirements

Compliance with all requirements as defined in this document.

2.7.4 General

Definition of Plans

"Plans to be submitted" is defined as the collective submission of a programme, forecast rate of payment (FRP) schedule and resource schedule.

Contractor's Skilled Staff

The Contractor makes available, for the duration of the contract, skilled planning personnel to work with and liaise with the Project Manager as required.

The Costs of Project Planning and Progress Monitoring

The cost of complying with the requirements of this standard is entered in the appropriate Activity Schedule.

Contractual Dates Supplied by the Project Manager (key dates)

All contractual dates are integrated into the Contractor's programme.
These dates only change when an extension of time is granted by the Project Manager.

One Plan to be submitted

The Contractor submits only one programme. Project Key Milestones as supplied by the Project Manager, are incorporated into the programme as per the NEC Core Clause 31.2.

Likewise, the Project Manager only accepts one forecast rate of invoicing and resource schedule.

Computerised Planning and Reporting

Microsoft Project has been adopted by the Employer for all planning and progress of this project. The Contractor obtains this software and applies it for the planning and control of the works in line with the accepted Work Breakdown Structure.

Time Analysis

Should the Contractor require to reserve built in float to control shipping facilities and transport, such float is shown as an activity named "project float" thus eliminating unrealistically long activity durations.

The total "float" or "slack" of an activity is defined as the difference between the earliest completion and the latest completion dates of the activity. Automatic manipulation of "lags", "overlaps", "leads", "relations" or "dummies" (with positive, zero or negative duration's) to cause the float to remain constant when updates are performed is not acceptable.

All time analysis results and values of the original duration, remaining duration, "lags" etc., are clearly reflected in the 'general planning report" as described in 2.7.8.

The calendar(s) used are based on normal working hours per day and working days per week. Any changes to this are to be approved by the Project Manager.

2.7.5 Plans to be Submitted

Accepted Programme

The *Contractor* submits a detailed programme as a tender returnable. The program shall be in Microsoft Excel and MS Projects format and should indicate the following:

- The daily duration of each activity.
- The working calendar (number of work hours per day, days per week).

- The exact quantity of people per day.
- All phases and interfaces.

A summary programme (Hammock) is provided where the summarised activities including the possession dates, and major interfaces of services and or other contracts logically required for the completion of the contract, are clearly shown.

Forecast Rate of Payment

The forecast rate of payment schedule, linking the values of completed activities as per the Accepted Programme, indicates (at base date values) the following:

The expected value of monthly invoicing from the starting date to the completion date including a statement of all payments made by the Employer.

Separating the following price categories:

- Each primary option
- Each secondary option
- Each statutory charge whether included or excluded from the total of the prices.
- VAT

The project values do not reflect retention or price adjustment for inflation.

The values are at base date and in every way relate to the Accepted Programme, the resources to be applied and the Bill of quantities.

Resource Schedule(s)

Resource information for manpower, Plant and Equipment based on the Accepted Programme and reflected in resource histograms is provided.

Detailed Workshop Manufacturing Programmes

The Project Manager may request detailed workshop manufacturing bar charts which fit into the logic and time span of the Accepted Programme and reflects the required manufacturing completion dates.

2.7.6 Progress Reporting

Progress reports are submitted weekly within two weeks of the date in the programme to which the Contractor is reporting his progress (time now date). The “Time Now Date”, unless otherwise agreed between the Project Manager and the Contractor, is the last day of any given month.

The Contractor submits, together with the progress reports, a written report which contains the following:

- Statement and report on those sections of the works where delay against programme has occurred (if any), together with the reasons why delay has occurred and a plan denoting the action to be taken and the period necessary to recover such delay.

- Statement and report on those sections of the works that are currently ahead of programme (if any).

- The impact of any programming changes arising is reflected in revised forecast rate of payment schedules and resource schedules.

2.7.7 Progress Meetings

Progress meetings will be held weekly and as agreed to between the Project Manager and the Contractor.

2.7.8 Documentation

The Contractor submits all programming documentation described in this procedure. The layout of reports is agreed with the Project Manager.

Although the Project Manager does not intend on duplicating the Contractor's program and progress reporting effort, portions or high-level extraction's of the Contractor's programme may be used in an overall project programme if this is deemed necessary for control purposes.

Documents Required

- Comprehensive network and supporting computer generated time analysis.
- Summary or hammock network and reports - (computer generated).
- Key event report - (computer generated).
- Report selecting all the *Employer's* activities - (computer generated).
- Overseas manufacturing reports - (computer generated).
- Bar charts.
- Resource schedule and histogram.
- Forecast rate of payment schedules linked to the contract programme and *activity schedules*.
- Cost curve "S-curve" - (computer generated)

Progress Reports Required

- General planning report - (computer generated).
- Critical activities report - (computer generated).
- Updated summary of hammock report - (computer generated).
- Key event report - (computer generated).
- Overseas manufacturing report (computer generated).
- Report selecting all the Employer's activities - (computer generated).
- Updated bar charts.
- Updated resource schedule and histogram (If changed).
- Forecast rate of payment schedule updated with actual progress.
- Statement and report on sections of the works ahead and behind progress.

General Planning Report

This is a comprehensive report on all the activities included in the contract programme covering the network logic, actual performance on past activities, time analysis and expected performance for future activities.

Should the logic, duration's, "lags", etc., be updated, such changes are listed, flagged or highlighted so that changes are readily analysed by the *Project Manager*.

Critical Activities Report

The same format as for the general planning report is used. In this instance, however, only activities with negative float are shown. Activities are listed in ascending order of negative float.
Note: The requirements of progress reporting are submitted with this report.

Key Event Report (key dates)

All key events are shown. These represent the contractual dates of *possession*, *completion*, time periods for information submissions and key dates supplied by the *Project Manager* or *Contractor* as identified in the relevant schedules forming part of the contract documents.

2.7.9 Updated Bar Chart

If the *Contractor* submits progress information in the form of an updated bar chart, the latest information available is used.
Note: In all cases, submission of documentation is subject to the *Project Manager's* acceptance.

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

The contractor must submit organogram of the project team with clear reporting lines from the lowest to the highest level of the structure.

Lines of authority / communication should be clearly indicated.
Key people and decision makers should be indicated. The decision makers shall be present in all meetings that are deemed critical by the both the employer and the contractor.

All work conducted in areas classified as red zones, level 0, 1, 2 and zone 20, 21, 22 areas or Hazardous locations must be led by a Master Installation Electrician registered with the Department of Labour. The MIE is the only person who is allowed to certify the plant to be compliant. All other team members must have been trained to perform work/maintenance in Hazardous locations.

All work conducted in areas classified as red zones, level 0, 1 or 2 areas or Hazardous locations must be supervised. The supervisor must be appointed by the contractor and must be competent to supervise all works contained in this document and be conversant with all standards and regulations referenced in this document.

The contractor shall supply all the names of the key people and supervisors. This shall be in an organogram form clearly stating where they fit on the whole contractor structure.

2.9 Invoicing and payment

Within one week of receiving a payment certificate from the *Project 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:

Matimba Power Station,
P.O Box 215,
Lephalale,
0555

The following information to be included in the tax invoice:

- Name and address of the *Contractor* and the *Project 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;

After each assessment the *Contractor* needs to compile the invoice and the original copy must be submitted to:

Invoiceseskomlocal@eskom.co.za

All invoice should be submitted by 25th of every month for payments in local currency (ZAR), commercial invoices for payments in foreign current should be submitted by 19th every month.

2.10 Insurance provided by the *Employer*

As per NEC insurance cover clause 80.1

2.11 Contract change management

Any change to the contract should be discussed and be approved in writing by the *Employer's Project Manager.*

3 Engineering and the *Contractor*'s design

3.1 *Employer*'s design

The employer supplies the contractor with available existing drawings and layout, for the contractor to produce classification drawings. The employer shall supply the contractor with available hazardous locations file for updating and correcting. The contractor shall comply but not limited to the following standards:

- Occupational Health and Safety Act 85 of 1993, Electrical Regulations 9
- SANS 10086-1 The installation, inspection and maintenance of equipment used in explosive atmospheres Part 1: Installations including surface installations on mines
- SANS 10087-3 The handling, storage, distribution and maintenance of liquefied petroleum gas in domestic, commercial, and industrial installations Part 3: Liquified petroleum gas installations involving storage vessels of individual water capacity exceeding 500 L
- SANS 10089-3 The petroleum industry Part 3: The installation, modification, and decommissioning of underground storage tanks, pumps/dispensers and pipework at service stations and consumer installations
- SANS 10108 The classification of hazardous locations and the selection of equipment for use in such locations
- SANS 10142-1 The wiring of premises Part1: Low Voltage Installations
- SANS 10142-2 The wiring of premises Part 2: Medium – Voltage installations above 11kV AC not exceeding 22 kV AC and up to and including 3 MVA installed capacity
- SANS 60079-0 Explosive atmospheres - Part 0: Equipment - General requirements
- SANS 60079-10-1 Explosive atmospheres Part 10-1: Classification of areas - Explosive gas atmospheres
- SANS 60079-10-2 Explosive atmospheres Part 10-2: Classification of areas - Combustible dust atmospheres
- SANS 60079-14 Explosive atmospheres Part 14: Electrical installations design, selection and erection
- SANS 60079-17 Explosive atmospheres Part 17: Electrical installations inspection and maintenance
- SANS 60079-19 Explosive atmospheres - Part 19: Equipment repair, overhaul and reclamation
- 240-103031952 Application of Certificate of Compliance (CoC) and Safety Clearance Certificate on Electrical Installations in Generating Power Plant Work Instruction
- 240-76619615 Classification of Battery Rooms Procedure
- 36-681 Generation Plant Safety Regulations
- 240-56536505 Hazardous Locations Standard (Eskom)

3.2 Parts of the *works* which the *Contractor* is to design

3.2.1 Scope of work for the contractor

Ensure Matimba Power Station complies in terms of the Occupational, Health and Safety Act (1993) Under Electrical Machinery Regulation (2011) Section 9, and codes and standards as stipulated in section 3.1 of this document.

The scope of work for performing repairs as per Appendix A and ensure plant compliance.

3.2.2 Procedures

- Compile a hazardous location (HAZLOC) areas access control procedure (up to approval state by the employer).
- Compile a procedure for tools, test instruments and equipment used in HAZLOC areas (up to approval state by the employer).
- Type of maintenance and Authorization of maintenance personnel procedure for HAZLOC areas (up to approval state by the employer).
- Compile a HAZLOC areas maintenance strategy procedure (up to approval state by the employer).
- Compile a procedure for issuing of gas free or hot work permits (PTW system) in HAZLOC areas (up to approval state by the employer).

- Design and develop a certificate of compliance test procedure (up to approval state by the employer) for normal and specialized installations, and the procedure must include comprehensive details about the test equipment to be used.
- Develop a procedure for the selection of the contractors and equipment to be utilized for electrical installation in classified locations (up to approval state by the employer).
- Update HAZLOC information file for each classified area as per index from employer
- Update HAZLOC management file as per index from employer

3.2.3 Training

- It will be the responsibility of the Contractor to train 15 Matimba Employees to do Hazardous location. Once they have completed the training they must be certified competent to perform inspection and maintenance in Hazardous Locations as per the OSH Act. The training must be provided by an accredited service provider verified by the project manager.

3.2.4 Plant in general

- Perform required test as per SANS 10142 on all hazardous locations and issue the certificate of compliance for both normal Installations and specialized Installations.
- Ensure demarcation of HAZLOC areas once classified excluding signs.
- Develop work instruction procedure for all task performed in HAZLOC areas.
- Develop task observation documents for all tasks performed in HAZLOC areas.
- Supply valid Inspection Authority (IA) certificate from an authorized inspection authority for all Ex equipment
- Supply all required documentation for the newly purchased ex equipment

3.2.5 General conditions

- Spares will be sourced by the contractor. However, the employer will have to approve the order before it is placed. The contractor will then be liable until it is handed back to Eskom after the installation is completed and handover certificate has been signed.
- After the contractor has been appointed, the contractor must provide a program for executing the scope of work and submit to the project manager for review with the involvement of the HAZLOC Systems Engineer. Specific tasks to be completed and the due date for these tasks should be stipulated in the programme. An electronic copy of the programme will be submitted to the Project Manager and HAZLOC Systems Engineer for acceptance.
- The contractor will be audited regularly for these general conditions

3.2.6 Materials delivered to the Employer by the Supplier as part of providing the Services.

- The contractor will be responsible for supplying all material equipment to complete the works.

3.3 Constraints

- Plant availability leading to delays in the project
- The project implementation shall not influence the current running plant
- The project shall be implemented within the allowed and agreed period
- All equipment shall be installed and will operate within the existing on-site environmental conditions (dust, humidity and temperature)

3.4 Restrictions

- The Contractor shall handle information and documentation provided by the employer as confidential and used for Matimba Power Station purposes only.
- Written permission should be obtained from Employer by Contractor to use information from Matimba Power Station outside of Matimba Power Station.
- Contractor’s employees who require access in Matimba Power Station must communicate with the Employers representative.
- Access to the site of Matimba Power Station will be withdrawn once the contract has expired.

3.5 Documentation Management

- A certificate of compliance test procedure for normal and specialized installations and the certificate to be used.
- An explosion inspection schedule (log books) for all equipment in classified locations.
- A technical specification procedure on flameproof equipment regarding the selection, certification, and installation and testing thereof.
- A procedure on maintenance work to be done by authorized persons
- Perform required test as per SANS 10142 on all hazardous locations and issue certificates of compliance in each area.
- Design and develop a testing schedule, procedure and log book for tests on earthing at any classified location.
- Submit a monthly compliance and progress report
- Responsible to compile a report for every evaluation period with respect to the contracted tasks progress and performance. This report is used to facilitate assessment at the end of each assessment interval.
- Review existing drawings indicating Hazardous locations at Matimba power station and submit updated drawings where required.
- Documentation compiled as part of the contract needs to be stored in the Matimba Documentation Centre.
- The Supplier should provide assistance with taking samples and performing calculations regarding the concentration of Hazardous substances in Hazardous locations as required for compliance.

3.5.1 KKS Coding

The KKS plant position codes must be identified in the documentation. KKS codes, down to third level, are to be used on the drawing documentation. The *Contractor* to include the *Project Manager* accepted drawing head on all drawings submitted to the *Project Manager*. The format of all documents is submitted to the *Project Manager* for acceptance.

3.5.2 Cabling Documentation

The *Contractor* provides the cable schedules inclusive of origin, target, type and size specification for all new cables required for the *Works,* where required. The *Employer* will assist with the assignment of cable numbers for all cables installed.
The *Contractor* provides a cable management system for duration of the *works*, for acceptance by the *Project Manager.*

The cable information supplied by the *Contractor* should also include all the relevant information regarding the cables that are decommissioned as part of the *Works.*

3.5.3 Licences

The *Contractor* provides all applicable licenses including their associated licenses fees as part of the final *works.* These licences become the property of Matimba Power Station.

3.6 Material provided by the Employer for the services.

- The Employer will provide documentation which is available in HAZLOC Files in the Matimba Documentation to contractor when requested.
- Available drawings of Hazardous locations additional to the drawings in HAZLOC Files will be supplied to contractor on request.

3.7 Procedure for submission and acceptance of *Contractor*'s design

All designs done by the contractor must be approved by the Employer. Once the designs has been submitted, the Employer will have 5 working days to review and approve the designs. Should the designs not

be acceptable, the Contractor will be given 3 working days to rework the designs. The employer will then have 3 days to review and approve the designs.

All designs and drawings must be submitted in hard copy to the Employer in A3 format.

3.8 Other requirements of the *Contractor*'s design

The contractor must include cable schedules on new, red lined or as build drawings. All the explosion equipment must have identification that they are Ex proof. Every Ex equipment must have a valid IA certificate. The contractor must ensure that after replacing the Ex equipment which form part of a plant system, that the whole system functional as before the works was done.

3.9 As-built drawings, operating manuals and maintenance schedules

All preliminary drawings developed and existing drawings that were changed to facilitate all the works as well as the cabling at the stage of completion of erection shall be available prior handing over of the works done.

It will be the responsibility of the Contractor to revise the drawings and to update all the existing relevant documentation to reflect the “as build” status after the project and forwards these drawings to the Project Manager 15 working days prior the Completion Date.

The Contractor’s documentation will include all circuit diagrams, program listings and all manuals for the installed equipment. The Contractor, for ease of use by Employer personnel, shall extensively comment on all drawings developed and with changes and manuals for the installed equipment where possible.

All drawings and manuals must be provided in hard and soft copy form. Soft copy forms shall be in PDF.

The *Contractor* provides additional and amended pages sufficient for all copies of manuals or document sets (3 copies of each document set) to ensure that they are complete, inclusive of detail such as final settings and modifications. Such information is forwarded to the *Project Manager,* within the *period of reply*, following receipt of agreement to equipment or system design modifications. The following documents at a minimum will be required but are not limited to these:

- As built drawings - Autodesk Design and hard copy format
- Manuals - Hard copy and PDF format
- Equipment Certificate - PDF and Hard copy

3.10 Contractor’s Equipment

All equipment used by the contractor must be in a correct working state and fit for its respective purpose in carrying out the works. Should equipment require any kind of calibration, configuration or certification for its use within the works, these must be obtained by the contractor before the equipment is used.

The tools and equipment has to be suitable to be used in the Hazardous location areas.

4 Procurement

4.1 People

4.1.1 Minimum requirements of people employed on the Site

It is the responsibility of the contractor to ensure all persons employed to provide the works are competent to perform the activities required for the works. Should any of the works require persons to be certified or trained in any way, the contractor must ensure that these persons have what is required. The Contractor must ensure persons providing the works have all relevant permits to work.

4.2 Subcontracting

4.2.1 Preferred subcontractors

The *Contracto*r also indicates on a list as shown below, the names of any sub-contractors whose services may be used to provide the *works*. The *Contractor* provides a short description of the work it is proposed to sub-contract to each, together with an approximate value of the work to be executed by each.

Where the sub-contractor will be required to do physical work on site the *Contractor* provides details on the experiences of the mentioned sub-contractor as well as a list of references involving work of a similar nature.

Notwithstanding the inclusion of a sub-contractor's name below, the *Contractor* obtains the written acceptance of the *Project Manager* prior to the employment of such sub-*Contractor* on the Site.

The *Contractor* will provide details of previous works and references of work done by the intended

Sub-*Contractor*	Description of work	Approximate value

4.2.2 Subcontract documentation, and assessment of subcontract tenders

If the contractor makes use of a subcontract, the NEC system is compulsory.

4.2.3 Limitations on subcontracting

The contractor shall not subcontract all the critical work, only non-critical work can be subcontracted and not more than 30% of this works can be subcontracted.

Critical works shall be performed by skilled personnel where the level of competence can be proven.

4.3 Plant and Materials

4.3.1 Quality

All electrical equipment to be used has to have the correct type, (temperature class and gas group) to qualify to be installed in the classified areas (SABS IEC 60079-10)

4.3.2 Plant & Materials provided "free issue" by the *Employer*

None. It will be the responsibility of the Contractor to provide all Plant and Material required to perform the work.

4.3.3 *Contractor*'s procurement of Plant and Materials

The contractor is responsible for all the procurement of all required material and equipment required to execute the works.

5 Construction

1.1 Temporary works, Site services & construction constraints

1.1.1 *Employer*'s Site entry and security control, permits, and Site regulations

a) The *Contractor* applies for access permits for all works via the *Project Manager*, who will co-ordinate this.
b) The *Contractor* applies for *Contractor's* Permits for all his employees at the security gate, at least 24 hours prior to entry of the Matimba Power Station Security Area.
c) The *Contractor* completes the specific form in the Matimba Power Station *Contractors*' Safety Manual, listing all of the personnel that he intends on using on site.
d) The completed list, identified with the *Contractor's* name, contains the following information:
- Employee Name
- Employee ID Number
- Eskom Safety Co-ordinator signature
- Eskom Project Manager signature
- Validity Date

e) No permits are issued to personnel who have not attended safety induction.
f) The Contractor photocopies the first page of the ID book of every one of his employees.
g) This completed list, together with the photocopies of the ID books is delivered to Protective Services for the preparation of the Contractor's Permits.
h) The Contractor allows at least 24 hours for the preparation of the security permits, before he collects the permits from the Protective Services offices.
i) The Contractor's personnel are always required to be in possession of a Contractor's Permit inside Matimba Power Station.
j) All Contractors' permits are submitted back to Protective Services when the workers leave the site after completion of the works. Failure to return the permits will result in a R30.00 penalty for each non-returned permit.
k) The Contractor compiles a detailed Tool List (obtainable from Protective Services) of all tools and equipment to be taken on site before arriving at the power station.
l) Authorised copies of these lists are retained to be used again when the tools and equipment is removed from site.
m) The Contractor's visitors and all personnel conform to the security arrangements in force at Matimba Power Station.
n) Application forms for visitors are filled in by the Contractor's Site Manager and approved by the Project Manager and submitted to the Employer's Protective Services office one day prior to the visit.
o) Visitors will not be allowed on site if the necessary forms are not in the possession of security staff.
p) The Chief Security Officer may, with valid cause, remove any of the Contractor's personnel from the site, either temporarily or permanently. He may deny access to the site to any person whom, in the opinion of the said Chief Security Officer, constitutes a security risk.
q) No unauthorised vehicles will be allowed on site. Only Contractor's vehicles with displayed Contract Vehicle Permits Disks will be allowed on site. Contractor Vehicle Applications are directed to the Project Manager for consideration and approval.
r) The Contractor is restricted to the Site where the work is to commence. The Contractor is forbidden to enter any other areas and ensures that his employees abide by these regulations.
s) No recruiting of casual labour may be done on Eskom premises, including the area outside the Power Station Security Gate.
t) Security personnel may search any premises, property or person within the security area of Matimba Power Station.
u) No Photographic equipment will be allowed within the security area of the Power Station without obtaining permission. Application forms for such permission is available from the Protective Services offices. Any person found in possession of such equipment will be prosecuted in terms of the National Key Point Act.
v) No firearms, weapons, alcohol, or illegal substances are permitted on Site.
w) No 'Private Work' is carried out for or on behalf of any Eskom employee.
x) Any person suspected of being under the influence of alcohol is tested and if proven positive, is refused entry to the security area.

1.1.2 Restrictions to access on Site, roads, walkways and barricades

a) Pedestrian crossings are placed at regular intervals for crossing the road. The Contractor must ensure that all his workers make use of the pedestrian crossings when crossing the road.
b) Walkways are provided within and around the plant. The walkways are provided to ensure a safe path free of tripping hazards and falling objects. The Contractor's employees to adhere to the walkways.
c) Any open trenches and manholes should be barricaded. Barricading that must be used include; solid steel/plastic barricades as well as material sheeting. The use of danger tape as a suitable barricade will not be allowed. The Contractor is responsible for providing all barricading material.
d) The Contractor shall occupy only such ground as is necessary to carry out the works.
e) All fences and other structures or equipment that have been damaged or interfered with by the Contractor shall be restored to be in a condition at least equivalent to their original condition.

1.1.3 People restrictions on Site; hours of work, conduct and records

a) The *Contractor's* personnel will only be allowed in areas where work is to commence.
b) Matimba's working hours is from 07:00 in the morning to 16:30 in the afternoon from Monday to Thursday and from 07:00 to 12:00 on Fridays. The *Contractor* is not obliged to follow the same working hours but needs to submit his proposed working hours to the *Project manager* for approval.

1.1.4 Health and safety facilities on Site

a) The *Contractor* provides a First Aid service to his employees. In the case where these prove to be inadequate, like in the event of a serious injury, the *Employer's* Medical Centre and facilities will be available. The *Employer* shall be entitled, however, to recover the costs incurred, in the use of the above *Employer*'s facilities, from the *Contractor.*
b) Outside the *Employer*'s office hours, the *Employer's* First Aid Services will only be available for serious injuries and life-threatening situations.
c) The *Contractor* to ensure that qualified and competent First Aiders and Emergency Care staff are permanently on site and at the actual construction site for emergency situations.
d) The *Contractor* or his staff shall not move the injured party from the incident position and site unless the person's life is in danger or the person is moved by a qualified and trained Emergency Care Worker.
e) If the Evacuation Alarm or Fire Alarm sounds, all persons will assemble at the nearest emergency assembly point until the All-clear Alarm sounds.

1.1.5 Environmental controls, fauna & flora, dealing with objects of historical interest

The *Contractor* has no title to an object of value or historical or other interest within the site. The *Contractor* shall notify the *Project Manager* when such an object is found, and the *Project Manager* will instruct the *Contractor* on how to deal with it. The *Contractor* does not move the object without instruction.

1.1.6 Title to materials from demolition and excavation

The *Contractor* will remove all redundant material 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 and Matimba waste management procedure number: PS/244/001

1.1.7 Cooperating with and obtaining acceptance of others

a) The *Contractor* shall co-operate with others in obtaining and providing information which they need in connecting with the works.
b) The *Contractor* shall share the working area with others in executing the works.

1.1.8 Publicity and progress photographs

Should publicity and or progress photographs be required an application shall be made via the Project Manager.

1.1.9 *Contractor*'s Equipment

a) All the equipment that is required to perform any work will be supplied by the *Contractor.*
b) The *Contractor's* equipment may not impair operation or prevent access to site.
c) The *Contractor* must provide all or any temporary facilities for the storage of material and equipment.
d) The *Contractor's* attention is drawn to the applicable regulation framed under the Machinery and Occupational Safety Act, 1983 (Act No. 6 OF 1983).
e) When working in built-in areas, the *Contractor* shall provide and use suitable and effective silencing devices for pneumatic tools and other plants that would otherwise cause a noise level exceeding 85 Db(A) during excavation and other works. Alternatively, the *Contractor* shall by means of barriers, effectively isolate the source of any such noise in order to comply with the said regulation.
f) Any equipment used by the *Contractor* must conform to the OHS Act Safety Standards and must be kept in a good working condition. The *Project Manager* has the right to stop any work if in their opinion the equipment does not comply.
g) The *Contractor* removes equipment from site when it is no longer used unless the *Project Manager* allows it to be left in the works.
h) The *Contractor* shall register all their equipment and declare all their belongings at the security gate upon arrival. Unregistered belongings upon arrival will not be allowed to be removed offsite.

1.1.10 Equipment provided by the *Employer*

None

1.1.11 Site services and facilities

a) Electrical power supply

- Power is available at the existing points free of charge.
- The *Employer* does not guarantee continuity of supply and no claims for standing time as a result of power failures will be considered.
- The *Contractor* provides his own portable 380V electrical distribution boards, and supply cables to and from the boards, for all his power supply requirements to execute the works.
- *Contractors'* Electrical Distribution Boards complies with OHSA as referred to in the Electrical Installation Regulations and the Electrical Machinery Regulations.
- Each board brought onto site has a Certificate of Compliance (CoC) issued by an accredited person.
- The *Contractors'* electrical distribution boards are installed at the works on a time negotiated with the Supervisor, prior to the possession date.
- The *Employer* connects the distribution boards to a 380V three-phase Alternating Current (AC) power supply, only after the *Contractor* has submitted the valid Certificate of Compliance.
- All *Contractors*' Electrical Distribution Boards are earthed to the steel structure of the plant.
- If there is no electricity supply available at a certain point, the *Contractor* will be responsible to provide their own power supply.

b) Potable water supply

- Potable water is available at the existing points.

c) Toilet facilities

- The Employer provides the Contractor access to existing toilet facilities.

d) Dining facilities

- The Contractor is not allowed to use the Employer's dining facilities, unless a specific agreement has been made between the Contractor and Eskom Catering and Accommodation Services (ECAS).
- The Site tuck-shop will be open to the Contractor during the Employer's working hours.

1.1.12 Facilities provided by the *Contractor*.

- All transport i.e. Tractors,Trucks,L.D.V.'s, etc.
- All lifting equipment such as cranes and forklifts.
- Accommodation is for the Contractor's own account.
- All tools must be provided by the Contractor for the works.
- All workshop machinery must be provided by the Contractor for the works.
- All office equipment must be provided by the Contractor for the works.
- Telephone bills will be paid by the Contractor.
- The Contractor must provide working procedures for each activity to the Employer's Representative at least 2 weeks before work may proceed. This procedure will include "Safe working procedures".
- The Contractor must provide all the material needed for the works. The safeguarding, care and security of all equipment and materials while the Contractor is performing the works is the responsibility of the Contractor.
- All redundant Contractor's material must be moved to allocated sites. No scrap shall be stored in the Contractor's yard. Scrap must be cleared of site daily.

Offices, workshops and stores

The *Contractor* is to provide office, workshop and storage space for all works and material to be stored during the project. The offices, workshops and storage facilities to be of an acceptable standard. The *Contractor* complies with the environmental policy given in Matimba SHEQ Policy Statement, PS/270/083 Rev 4. The *Contractor* is to maintain these provisions to Eskom's standards. Security services must be provided by the *Contractor* to ensure the protection of all works, equipment and material for the duration of the project. The *Employer* shall **not** be held responsible for the theft of any of the *Contractor's* plant or materials. On completion of the Works or as soon as the facilities provided by the *Contractor* are no longer required, the *Contractor* shall remove such facilities and clear away all surface indications of his/her presence. A stand with potable water and electricity supply within the Station perimeter will be provided by the *Employer* for the *Contractor's* site establishment.

Electricity

The *Contractor* provides at his own expense all temporary wiring and cabling to lead power from the *Employer's* supply points, to where it is required, maintain same and remove on completion. These points of supply are transformers designated by the *Employer*. The *Contractor's* distribution boxes conform to the *Employer's* requirements and are approved by the *Project Manager* prior to use. All installations comply with the details set out in Matimba Maintenance Procedure *PAM/233/002 - Contractor's Temporary Electrical Equipment Supply.*

Any electrical equipment or appliance used by the *Contractor* conforms to the applicable South African safety standards and is maintained in safe and proper working condition. The *Employer* has the right to stop the *Contractor's* use of any electrical equipment or appliance which in the *Employer*'s opinion does not conform to the foregoing.

Conditions of supply for erection

In order to comply with the Electrical Installation Regulations under the Occupational Health and Safety Act, no 85 of 1993 the following requirements must be met:

- Before the Contractor's cabling is connected to the Employer's supply point and before any electricity is supplied the Contractor must be in possession of a valid certificate of compliance for its reticulation system.
- The Contractor's electrical installation is inspected and tested by an accredited person to ensure that it complies with the requirements of the Occupational Health and Safety Act, 1993 and the code of Practice for wiring of premises.
- After a CoC is obtained, the Employer inspects the electrical installation and if satisfied, it is connected and supplied from the construction power supply.

WARNING

Phase rotation may change during a power supply break. The *Contractor* checks rotation of their equipment before recommencing of work**.**

1.1.13 Existing premises, inspection of adjoining properties and checking work of others

N/A

1.1.14 Survey control and setting out of the *works*

Prior to any manufacturing or building activities, the *Contractor* will be required to take dimensions and levels on site.

1.1.15 Underground services, other existing services, cable and pipe trenches and covers

N/A

1.1.16 Control of noise, dust, water and waste

a) The *Contractor* is always responsible to keep the work area clean and comply with general good housekeeping procedures.
b) It is the *Contractor's* responsibility to dispose of all steel at Matimba's waste sorting area.
c) The *Contractor* shall take all necessary steps to minimise dust and noise pollution during construction.

1.1.17 Sequences of construction or installation

No installation will commence before all material is not on site.

1.1.18 Giving notice of work to be covered up

All work must be inspected by the Project Manager and Engineer before it may be covered up.

1.1.19 Hook ups to existing works

The Employer will provide personnel who will do the connections in cases where the Hazardous Location plant interfaces with non-classified plant.

The Contractor will be responsible for all connection within the hazardous location area.

5.1 Completion, testing, commissioning and correction of Defects

5.1.1 Work to be done by the Completion Date

On or before the Completion Date the *Contractor* shall have done everything required to Provide the Works except for the work listed below which may be done after the Completion Date but in any case before the dates stated. The *Project Manager* cannot certify Completion until all the work except that listed below has been done and is also free of Defects which would have, in his opinion, prevented the *Employer* from using the *works* and others from doing their work.

	Item of work	**To be completed by**
	As built drawings and documentation as part of the whole of the works	Within 14 days prior to Completion
	Performance testing of the *works* in use as specified in this Works Information.	See performance testing requirements.

5.1.2 Use of the *works* before Completion has been certified

All Works needs to be certified, handed over, approved and signed over before it can be used. This can be sectional completion or on complete installation.

5.1.3 Commissioning

The commissioning activities are carried out in conjunction with the Supervisor. The Contractor is responsible for the hot commissioning of all the equipment forming part of the works to satisfy the requirements of the Works Information.

The Employer is responsible for plant preparation for hot commissioning. However, for that portion of the equipment, which cannot be commissioned separately from other plant, the commissioning is at the discretion of the Project Manager for the stage of commissioning. In cases where various components (existing or new) are connected to form an integrated system, the Contractor, at the time of commissioning, carries the responsibility for the correct functioning of the whole of the system. If a defect is identified in the equipment interfacing or external to the Contractor's scope the Contractor directs the Project Manager's Representative/s to rectify the defects.

The Contractor provides a sample of the type of functional test forming part of the hot commissioning with typical test durations.

Tests to be performed by the Contractor:

Test 1: Continuity of all bonding conductors.
Test 2: Resistance of earth continuity conductors
Test 3: Resistance of ring circuit
Test 4: Earth Fault loop impedance and PSC test
Test 5: Elevated Voltage on Neutral
Test 6: Earth electrode resistance
Test 7: Insulation Resistance
Test 8: Voltages (Main Db) no load
Test 9: Voltage (Main Db) on load
Test 10: Voltage at available load (worst condition)
Test 11: Operation of ELCB units
Test 12: Operation of ELCB test button
Test 13: Polarity of points of consumption
Test 14: All switching devices, M&B circuits

6 List of drawings

6.1 Drawings issued by the *Employer*

This is the list of drawings issued by the *Employer* at or before the Contract Date and which apply to this contract.

Note: Some drawings may contain both Works Information and Site Information.
Note: The Classification drawings are not yet converted to the Eskom format. They are available in Autodesk Design format.

Drawing number	Revision	Title
HAZ - 066 - 18103	1	Coal Plant Diesel Dispenser
HAZ - 066 -18089	1	Coal Plant Incline Conveyors Bottom Unit 1_6
HAZ - 066 - 18094A	1	Coal Plant Incline Conveyors Top 1_6
HAZ - 066 - 18093	1	LP Gas Bottle Storage
HAZ - 066 - 18092	1	Main H2 Plant
HAZ - 066 -18087	1	Petrol Pump Station
HAZ - 066 - 18091	1	Propane Tank
HAZ - 066 -18090	1	Spray Paint Booth EMF
HAZ - 066 - 18096	1	Spray Paint Booth
HAZ - 066 -18088	1	Station Battery Room
HAZ - 066 - 18079	1	Station Generator Diesel Tank
HAZ - 066 -18080	1	Station Services Building Battery Room
HAZ - 066 -18081	1	U1 Battery Room
HAZ - 066 - 18097	1	U1 Generator Diesel Tank
HAZ - 066 -18082	1	U2 Battery Room
HAZ - 066 - 18098	1	U2 Generator Diesel Tank
HAZ - 066 -18083	1	U3 Battery Room
HAZ - 066 - 18100	1	U3 Generator Diesel Tank
HAZ - 066 -18084	1	U4 Battery Room
HAZ - 066 - 18099	1	U4 Generator Diesel Tank
HAZ - 066 -18085	1	U5 Battery Room
HAZ - 066 - 18101	1	U5 Generator Diesel Tank
HAZ - 066 -18086	1	U6 Battery Room
HAZ - 066 - 18102	1	U6 Generator Diesel Tank
HAZ - 066 - 18104	1	Unitized H2 Flow Meter Station Unit 1_6
HAZ - 066 -18095	1	Unitized H2 Meter Unit 1_6

7 APPENDIX A

7.1 SCOPE FOR COAL SILO TRANSFER HOUSE 1 – ZONE 22

7.1.1 Coal Silo Transfer House 1 Detailed list

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
1	Matimba	Coal Transfer house 1	Pull Switch	20ECB20CG301	N/A	N/A	Not visible	IP Rating below IP68
2	Matimba	Coal Transfer house 1	Pull Switch	20ECB20CG308	N/A	N/A	Not visible	IP Rating below IP68
3	Matimba	Coal Transfer house 1	Magnetic separator panel	20ECB20AT001	N/A	N/A	1163/A	Panel does not seal properly
4	Matimba	Coal Transfer house 1	HSP Lights	N/A	N/A	N/A	Not visible	Damaged and broken lights
5	Matimba	Coal Transfer house 1	HSP Lights	N/A	N/A	N/A	Not visible	Damaged and broken lights
6	Matimba	Coal Transfer house 1	HSP Lights	N/A	N/A	N/A	Not visible	Damaged and broken lights
7	Matimba	Coal Transfer house 1	HSP Lights	N/A	N/A	N/A	Not visible	Damaged and broken lights
8	Matimba	Coal Transfer house 1	HSP Lights	N/A	N/A	N/A	Not visible	Damaged and broken lights
9	Matimba	Coal Transfer house 1	Pull Switch	10ECB20CG308	N/A	N/A	Not visible	IP Rating below IP68
10	Matimba	Coal Transfer house 1	Pull Switch	10ECB20CG301	N/A	N/A	Not visible	IP Rating below IP68
11	Matimba	Coal Transfer house 1	Magnetic separator panel	10ECB20AT001	N/A	N/A	1163/B	Panel does not seal properly
12	Matimba	Coal Transfer house 1	Feeder belt slip sensor	10ECB10CS310	N/A	N/A	Not visible	Completely covered with Coal dust
13	Matimba	Coal Transfer house 1	Feeder belt slip sensor	20ECB10CS310	N/A	N/A	Not visible	Completely covered with Coal dust
14	Matimba	Coal Transfer house 1	Unit 1 Magnetic belt motor	N/A	N/A	N/A	Not visible	Could not access Motor
15	Matimba	Coal Transfer house 1	Unit 2 Magnetic belt motor	N/A	N/A	N/A	Not visible	Could not access Motor

7.1.2 Coal Silo Transfer House 1 Fault list

Item Nr.on Detail List	Equipment Description	Fault Description	QTY	Rectification Action Required
1	Pull Switch	IP Rating below IP 68	1	Replace with IP 68 equipment
2	Pull Switch	IP Rating below IP 68	1	Replace with IP 68 equipment
3	Magnetic separator panel	Panel does not seal properly	1	Repair door and ensure that seals are still in order
4-8	HSP Lights	Damaged and broken lights	5	Replace lights with IP68 Lights
9	Pull Switch	IP Rating below IP68	1	Replace with IP 68 equipment
10	Pull Switch	IP Rating below IP68	1	Replace with IP 68 equipment
11	Magnetic separator panel	Panel does not seal properly	1	Repair door and ensure that seals are still in order
12	Feeder belt slip sensor	Area not clean	1	Keep slip ring clean from coal
13	Feeder belt slip sensor	Area not clean	1	Keep slip ring clean from coal
14	Unit 3 Auto Bin detector	No identification	1	Install identification for instrument
15	Unit 4 Auto bin detector	No identification	1	Install identification for instrument
16	Unit 3 Magnetic belt motor	Motor rated for IP 55	1	Replace current motor replaced with (DIP) motor (See Spec below on Equipment detail)
17	Unit 4 Magnetic belt motor	Motor rated for IP 55	1	Replace current motor replaced with (DIP) motor (See Spec below on Equipment detail)

7.1.3 Detailed Material List for upgrade

ITEM	EQUIPMENT DETAIL	QTY	Ex Rating
1	50W IP68 LED SPOT LIGHTS	5	None (Only IP 68)
2	Demarcation Boards	2	
3	IP68 Pull Switch	4	
4	7.5kW, BX132, FEMCO, 380V, 16.5A, class F insulation, IP65, Star or Delta	2	None (Only IP 65)

7.2 SCOPE FOR COAL SILO TRANSFER HOUSE 2 – ZONE 22

7.2.1 Coal Silo Transfer House 2 Detailed list

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
1	Matimba	Coal Transfer house 2	Pull Switch	40ECB20CG301	N/A	N/A	Not visible	IP Rating below IP68
2	Matimba	Coal Transfer house 2	Pull Switch	40ECB20CG308	N/A	N/A	Not visible	IP Rating below IP68
3	Matimba	Coal Transfer house 2	Magnetic separator panel	40ECB20AT001	N/A	N/A	1163.4	Panel does not seal properly
4	Matimba	Coal Transfer house 2	HSP Lights	N/A	N/A	N/A	Not visible	Damaged and broken lights
5	Matimba	Coal Transfer house 2	HSP Lights	N/A	N/A	N/A	Not visible	Damaged and broken lights
6	Matimba	Coal Transfer house 2	HSP Lights	N/A	N/A	N/A	Not visible	Damaged and broken lights
7	Matimba	Coal Transfer house 2	HSP Lights	N/A	N/A	N/A	Not visible	Damaged and broken lights
8	Matimba	Coal Transfer house 2	HSP Lights	N/A	N/A	N/A	Not visible	Damaged and broken lights
9	Matimba	Coal Transfer house 2	Pull Switch	30ECB20CG308	N/A	N/A	Not visible	IP Rating below IP68
10	Matimba	Coal Transfer house 2	Pull Switch	30ECB20CG301	N/A	N/A	Not visible	IP Rating below IP68
11	Matimba	Coal Transfer house 2	Magnetic separator panel	30ECB20AT001	N/A	N/A	1163.3	Panel does not seal properly
12	Matimba	Coal Transfer house 2	Feeder belt slip sensor	N/A	N/A	N/A	Not visible	No KKS Labelling
13	Matimba	Coal Transfer house 2	Feeder belt slip sensor	N/A	N/A	N/A	Not visible	No KKS Labelling
14	Matimba	Coal Transfer house 2	Unit 3 Auto Bin detector	N/A	N/A	N/A	Not visible	No identification
15	Matimba	Coal Transfer house 2	Unit 4 Auto bin detector	N/A	N/A	N/A	Not visible	No identification
16	Matimba	Coal Transfer house 2	Unit 3 Magnetic belt motor	N/A	N/A	N/A	0072	Motor rated for IP 55
17	Matimba	Coal Transfer house 2	Unit 4 Magnetic belt motor	N/A	N/A	N/A	Not visible	Motor was not installed at time of inspection

7.2.2 Coal Silo Transfer House 2 Fault list

Item Nr.on Detail List	Equipment Description	Fault Description	QTY	Rectification Action Required
1	Pull Switch	IP Rating below IP68	1	Replace with IP 68 equipment
2	Pull Switch	IP Rating below IP68	1	Replace with IP 68 equipment
3	Magnetic separator panel	Panel does not seal properly	1	Repair door and ensure that seals are still in order
4-8	HSP Lights	Damaged and broken lights	5	Replace lights with IP68 Lights
9	Pull Switch	IP Rating below IP68	1	Replace with IP 68 equipment
10	Pull Switch	IP Rating below IP68	1	Replace with IP 68 equipment
11	Magnetic separator panel	Panel does not seal properly	1	Repair door and ensure that seals are still in order
12	Feeder belt slip sensor	No KKS Labelling	1	Label instrument
13	Feeder belt slip sensor	No KKS Labelling	1	Label instrument
14	Unit 5 Auto Bin detector	No identification	1	Install identification for instrument
15	Unit 6 Auto bin detector	No identification	1	Install identification for instrument
16	Unit 5 Magnetic belt motor	Motor rated for IP 55	1	Replace current motor replaced with (DIP) motor (See Spec below on Equipment detail)
17	Unit 6 Magnetic belt motor	Motor was not installed at time of inspection	1	Replace current motor replaced with (DIP) motor (See Spec below on Equipment detail)

7.2.3 Detailed Material List for upgrade

ITEM	EQUIPMENT DETAIL	QTY	Ex Rating
1	50W IP68 LED SPOT LIGHTS	5	None (Only IP 68)
2	Demarcation Boards	2	
3	IP68 Pull Switch	4	
4	7.5kW, BX132, FEMCO, 380V, 16.5A, class F insulation, IP65, Star or Delta	2	None (Only IP 65)

7.3 SCOPE FOR COAL SILO TRANSFER HOUSE 3 – ZONE 22

7.3.1 Coal Silo Transfer House 3 Detailed list

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
1	Matimba	Coal Transfer house 3	Pull Switch	60ECB20CG301	N/A	N/A	Not visible	IP Rating below IP68
2	Matimba	Coal Transfer house 3	Pull Switch	60ECB20CG308	N/A	N/A	Not visible	IP Rating below IP68
3	Matimba	Coal Transfer house 3	Magnetic separator panel	60ECB20AT001	N/A	N/A	1163.6	Panel does not seal properly
4	Matimba	Coal Transfer house 3	HSP Lights	N/A	N/A	N/A	Not visible	Damaged and broken lights
5	Matimba	Coal Transfer house 3	HSP Lights	N/A	N/A	N/A	Not visible	Damaged and broken lights
6	Matimba	Coal Transfer house 3	HSP Lights	N/A	N/A	N/A	Not visible	Damaged and broken lights
7	Matimba	Coal Transfer house 3	HSP Lights	N/A	N/A	N/A	Not visible	Damaged and broken lights
8	Matimba	Coal Transfer house 3	HSP Lights	N/A	N/A	N/A	Not visible	Damaged and broken lights
9	Matimba	Coal Transfer house 3	Pull Switch	50ECB20CG308	N/A	N/A	Not visible	IP Rating below IP68
10	Matimba	Coal Transfer house 3	Pull Switch	50ECB20CG301	N/A	N/A	Not visible	IP Rating below IP68
11	Matimba	Coal Transfer house 3	Magnetic separator panel	50ECB20AT001	N/A	N/A	1163.5	Panel does not seal properly
12	Matimba	Coal Transfer house 3	Feeder belt slip sensor	60ECB10CS311	N/A	N/A	Not visible	Area not clean
13	Matimba	Coal Transfer house 3	Feeder belt slip sensor	50ECB10CS311	N/A	N/A	Not visible	Area not clean
14	Matimba	Coal Transfer house 3	Unit 6 Auto Bin detector	N/A	N/A	N/A	Not visible	No identification
15	Matimba	Coal Transfer house 3	Unit 5 Auto bin detector	N/A	N/A	N/A	Not visible	No identification
16	Matimba	Coal Transfer house 3	Unit 6 Magnetic belt motor	N/A	N/A	N/A	71.01083142.01.0001.08.	Motor rated for IP 55
17	Matimba	Coal Transfer house 3	Unit 5 Magnetic belt motor	N/A	N/A	N/A	Not visible	Motor was not installed at time of inspection

7.3.2 Coal Silo Transfer House 3 Fault list

Item Nr.on Detail List	Equipment Description	Fault Description	QTY	Rectification Action Required
1	Pull Switch	IP Rating below IP 68	1	Replace with IP 68 equipment
2	Pull Switch	IP Rating below IP 68	1	Replace with IP 68 equipment
3	Magnetic separator panel	Panel does not seal properly	1	Repair door and ensure that seals are still in order
4-8	HSP Lights	Damaged and broken lights	5	Replace lights with IP68 Lights
9	Pull Switch	IP Rating below IP68	1	Replace with IP 68 equipment
10	Pull Switch	IP Rating below IP68	1	Replace with IP 68 equipment
11	Magnetic separator panel	Panel does not seal properly	1	Repair door and ensure that seals are still in order
12	Feeder belt slip sensor	Area not clean	1	Keep slip ring clean from coal
13	Feeder belt slip sensor	Area not clean	1	Keep slip ring clean from coal
14	Unit 3 Auto Bin detector	No identification	1	Install identification for instrument
15	Unit 4 Auto bin detector	No identification	1	Install identification for instrument
16	Unit 3 Magnetic belt motor	Motor rated for IP 55	1	Replace current motor replaced with (DIP) motor (See Spec below on Equipment detail)
17	Unit 4 Magnetic belt motor	Motor rated for IP 55	1	Replace current motor replaced with (DIP) motor (See Spec below on Equipment detail)

7.3.3 Detailed Material List for upgrade

ITEM	EQUIPMENT DETAIL	QTY	Ex Rating
1	50W IP68 LED SPOT LIGHTS	5	None (Only IP 68)
2	Demarcation Boards	2	
3	IP68 Pull Switch	4	
4	7.5kW, BX132, FEMCO, 380V, 16.5A, class F insulation, IP65, Star or Delta	2	None (Only IP 65)

7.4 SCOPE FOR DIESEL DISPENSER COAL PLANT – ZONE 2

7.4.1 Diesel Dispenser Coal Plant Detailed list

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
2	Matimba	Diesel Dispenser (Rail w ay)	Diesel pump	N/A	N/A	EX d IIA T6	MK27605	Pump needs to be serviced

7.4.2 Diesel Dispenser Coal Plant Fault list

Item Nr.on Detail List	Equipment Description	Fault Description	QTY	Rectification Action Required
1	Diesel pumps	Equipment out of date	1	Equipment should be serviced

7.4.3 Detailed Material List for upgrade

Equipment needs to be serviced

7.5 SCOPE FOR DIESEL DISPENSER RAILWAY – ZONE 2

7.5.1 Diesel Dispenser Railway Detailed list

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
1	Matimba	Diesel Dispenser (Rail w ay)	Diesel pump	N/A	N/A	EX d IIA T6	MK27605	Pump needs to be serviced

7.5.2 Diesel Dispenser Railway Fault list

Item Nr.on Detail List	Equipment Description	Fault Description	QTY	Rectification Action Required
1	Diesel pumps	Equipment out of date	1	Equipment should be serviced

7.5.3 Detailed Material List for upgrade

Equipment not in service

7.6 SCOPE FOR EMF SPRAY BOOTH – ZONE 1

7.6.1 EMF Spray Booth Detailed list

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
1	Matimba	Spray booth- EMF	Light Fittings - Nordland	N/A	SABS S/P 781	Ex ed II T4	Not visible	Gland and stoppers not correctly ex rated/ light fitting does not specify w hich gas group
2	Matimba	Spray booth- EMF	Light Fittings - Nordland	N/A	SABS S/P 782	Ex ed II T4	Not visible	
3	Matimba	Spray booth- EMF	SPRAY PAINT BOOTH MOTOR	N/A	N/A	N/A	286640/02/QC	No feed from/ Control Point indication

7.6.2 EMF Spray Booth Fault list

Item Nr.on Detail List	Equipment Description	Fault Description	QTY	Rectification Action Required
1-2	Light Fittings - Nordland	Gland and stoppers not correctly ex rated/ light fitting does not specify which gas group	2	Provide documentation for light fittings/ replace glands and stoppers
3	Spray Paint Booth Motor	No feed from/ Control Point indication	1	Provide labelling

7.6.3 Detailed Material List for upgrade

ITEM	EQUIPMENT DETAIL	QTY	Ex Rating
1	Cable Gland, SWA	6	Ex e IIB T3 - T6
2	Stoppers	3	Ex e IIB T3 - T6
3	SWA 2.5mm2 3core	50	SABS Approved
4	Fire Extinguisher - 9 Kg Power Type	2	
5	Demarcation Boards	2	
6	CCG Junction Box with Terminals 2xL 2xN and Earth, with barriers between L/N/E	1	Ex e IIB T3-T6
7	Miscellanies (Cable Straps / Lugs / Insulation Tape / Stanley Knife Blades / Conduit / Wall Plugs / Saddles)	As Per Site	

7.6.4 General fault list

- Plant earth should be installed in battery room, and confirmed
- All equipment with conductive casings should be bonded to the plant earth

7.7 SCOPE FOR GENERATOR DIESEL TANK STATION – ZONE 2

7.7.1 Generator Diesel Tank Station Detailed list

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
1	Matimba	Station Gen Diesel Tank	Diesel Pump Motor	N/A	N/A	N/A	393140	Pump motor not rated for area / incorrect equipment type for area.
2	Matimba	Station Gen Diesel Tank	Tank Level Switch	N/A	N/A	N/A	N/A	Tank level switch not rated for area / incorrect equipment type for area.

7.7.2 Generator Diesel Tank Station Fault list

Item Nr.on Detail List	Equipment Description	Fault Description	QTY	Rectification Action Required
1	Diesel Pump Motor	Motor not Ex rated	1	Replace existing motor with Ex rated motor
2	Motor Isolator	Incorrect equipment for area, no Ex rating	1	Replace with Ex rated isolator
3	Tank Level Switch	Incorrect equipment for area, no Ex rating	1	Replace with Ex rated level switch

7.7.3 Detailed Material List for upgrade

ITEM	EQUIPMENT DETAIL	QTY	Ex Rating
1	Calpeda, 0.55 KW, 3Phase, CA90, 2850rpm motor / pump unit	1	Ex d IIC T1 - T6
2	Cable Gland, SWA	4	Ex d
3	SWA 2.5mm2 3core	150m	SABS Approved
4	Motor isolator	1	Ex de IIC T6
5	Tank Level Switch	1	Ex ia IIC T6

7.8 SCOPE FOR GENERATOR DIESEL TANK UNIT 1 – ZONE 2

7.8.1 Generator Diesel Tank Unit 1 Detailed list

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
1	Matimba	Unit 1 Gen Diesel Tank	Diesel Pump Motor	N/A	N/A	N/A	131471	Pump motor not rated for area / incorrect equipment type for area.
2	Matimba	Unit 1 Gen Diesel Tank	Tank Level Switch	N/A	N/A	N/A	N/A	Tank level switch not rated for area / incorrect equipment type for area.

7.8.2 Generator Diesel Tank Unit 1 Fault list

Item Nr.on Detail List	Equipment Description	Fault Description	QTY	Rectification Action Required
1	Diesel Pump Motor	Motor not Ex rated	1	Replace existing motor with Ex rated motor
2	Tank Level Switch	Incorrect equipment for area, no Ex rating	1	Replace with Ex rated level switch

7.8.3 Detailed Material List for upgrade

ITEM	EQUIPMENT DETAIL	QTY	Ex Rating
1	Calpeda, 0.55 KW, 3Phase, CA90, 2850rpm motor / pump unit	1	Ex d IIC T1 - T6
2	Cable Gland, SWA	4	Ex d
3	SWA 2.5mm2 3core	150m	SABS Approved
4	Motor isolator	1	Ex de IIC T6
5	Tank Level Switch	1	Ex ia IIC T6

7.9 SCOPE FOR GENERATOR DIESEL TANK UNIT 2 – ZONE 2

7.9.1 Generator Diesel Tank Unit 2 Detailed list

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
1	Matimba	Unit 2 Gen Diesel Tank	Diesel Pump Motor	N/A	N/A	N/A	N/A	Pump motor not rated for area / incorrect equipment type for area.
2	Matimba	Unit 2 Gen Diesel Tank	Motor Isolator	N/A	N/A	N/A	N/A	Motor isolator not rated for area / incorrect equipment type for area.
3	Matimba	Unit 2 Gen Diesel Tank	Tank Level Switch	N/A	N/A	N/A	N/A	Tank level switch not rated for area / incorrect equipment type for area.

7.9.2 Generator Diesel Tank Unit 2 Fault list

Item Nr.on Detail List	Equipment Description	Fault Description	QTY	Rectification Action Required
1	Diesel Pump Motor	Motor not Ex rated	1	Replace existing motor with Ex rated motor
2	Motor Isolator	Incorrect equipment for area, no Ex rating	1	Replace with Ex rated isolator
3	Tank Level Switch	Incorrect equipment for area, no Ex rating	1	Replace with Ex rated level switch

7.9.3 Detailed Material List for upgrade

ITEM	EQUIPMENT DETAIL	QTY	Ex Rating
1	Calpeda, 0.55 KW, 3Phase, CA90, 2850rpm motor / pump unit	1	Ex d IIC T1 - T6
2	Cable Gland, SWA	4	Ex d
3	SWA 2.5mm2 3core	150m	SABS Approved
4	Motor isolator	1	Ex de IIC T6
5	Tank Level Switch	1	Ex ia IIC T6

7.10 SCOPE FOR GENERATOR DIESEL TANK UNIT 3 – ZONE 2

7.10.1 Generator Diesel Tank Unit 3 Detailed list

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
1	Matimba	Unit 3 Gen Diesel Tank	Diesel Pump Motor	N/A	N/A	N/A	-	Pump motor not rated for area / incorrect equipment type for area.
2	Matimba	Unit 3 Gen Diesel Tank	Motor Isolator	N/A	N/A	N/A	N/A	Motor isolator not rated for area / incorrect equipment type for area.
3	Matimba	Unit 3 Gen Diesel Tank	Tank Level Switch	N/A	N/A	N/A	N/A	Tank level switch not rated for area / incorrect equipment type for area.

7.10.2 Generator Diesel Tank Unit 3 Fault list

Item Nr.on Detail List	Equipment Description	Fault Description	QTY	Rectification Action Required
1	Diesel Pump Motor	Motor not Ex rated	1	Replace existing motor with Ex rated motor
2	Motor Isolator	Incorrect equipment for area, no Ex rating	1	Replace with Ex rated isolator
3	Tank Level Switch	Incorrect equipment for area, no Ex rating	1	Replace with Ex rated level switch

7.10.3 Detailed Material List for upgrade

ITEM	EQUIPMENT DETAIL	QTY	Ex Rating
1	Calpeda, 0.55 KW, 3Phase, CA90, 2850rpm motor / pump unit	1	Ex d IIC T1 - T6
2	Cable Gland, SWA	4	Ex d
3	SWA 2.5mm2 3core	150m	SABS Approved
4	Motor isolator	1	Ex de IIC T6
5	Tank Level Switch	1	Ex ia IIC T6

7.11 SCOPE FOR GENERATOR DIESEL TANK UNIT 4 – ZONE 2

7.11.1 Generator Diesel Tank Unit 4 Detailed list

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
1	Matimba	Unit 4 Gen Diesel Tank	Diesel Pump Motor	N/A	N/A	N/A	8757	Pump motor not rated for area / incorrect equipment type for area.
2	Matimba	Unit 4 Gen Diesel Tank	Motor Isolator	N/A	N/A	N/A	N/A	Motor isolator not rated for area / incorrect equipment type for area.
3	Matimba	Unit 4 Gen Diesel Tank	Tank Level Switch	N/A	N/A	N/A	N/A	Tank level switch not rated for area / incorrect equipment type for area.

7.11.2 Generator Diesel Tank Unit 4 Fault list

Item Nr.on Detail List	Equipment Description	Fault Description	QTY	Rectification Action Required
1	Diesel Pump Motor	Motor not Ex rated	1	Replace existing motor with Ex rated motor
2	Motor Isolator	Incorrect equipment for area, no Ex rating	1	Replace with Ex rated isolator
3	Tank Level Switch	Incorrect equipment for area, no Ex rating	1	Replace with Ex rated level switch

7.11.3 Detailed Material List for upgrade

ITEM	EQUIPMENT DETAIL	QTY	Ex Rating
1	Calpeda, 0.55 KW, 3Phase, CA90, 2850rpm motor / pump unit	1	Ex d IIC T1 - T6
2	Cable Gland, SWA	4	Ex d
3	SWA 2.5mm2 3core	150m	SABS Approved
4	Motor isolator	1	Ex de IIC T6
5	Tank Level Switch	1	Ex ia IIC T6

7.12 SCOPE FOR GENERATOR DIESEL TANK UNIT 5 – ZONE 2

7.12.1 Generator Diesel Tank Unit 5 Detailed list

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
1	Matimba	Unit 5 Gen Diesel Tank	Diesel Pump Motor	N/A	N/A	N/A	8841	Pump motor not rated for area / incorrect equipment type for area.
2	Matimba	Unit 5 Gen Diesel Tank	Motor Isolator	N/A	N/A	N/A	N/A	Motor isolator not rated for area / incorrect equipment type for area.
3	Matimba	Unit 5 Gen Diesel Tank	Tank Level Switch	N/A	N/A	N/A	N/A	Tank level switch not rated for area / incorrect equipment type for area.

7.12.2 Generator Diesel Tank Unit 5 Fault list

Item Nr.on Detail List	Equipment Description	Fault Description	QTY	Rectification Action Required
1	Diesel Pump Motor	Motor not Ex rated	1	Replace existing motor with Ex rated motor
2	Motor Isolator	Incorrect equipment for area, no Ex rating	1	Replace with Ex rated isolator
3	Tank Level Switch	Incorrect equipment for area, no Ex rating	1	Replace with Ex rated level switch

7.12.3 Detailed Material List for upgrade

ITEM	EQUIPMENT DETAIL	QTY	Ex Rating
1	Calpeda, 0.55 KW, 3Phase, CA90, 2850rpm motor / pump unit	1	Ex d IIC T1 - T6
2	Cable Gland, SWA	4	Ex d
3	SWA 2.5mm2 3core	150m	SABS Approved
4	Motor isolator	1	Ex de IIC T6
5	Tank Level Switch	1	Ex ia IIC T6

7.13 SCOPE FOR GENERATOR DIESEL TANK UNIT 6 – ZONE 2

7.13.1 Generator Diesel Tank Unit 6 Detailed list

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
1	Matimba	Unit 6 Gen Diesel Tank	Diesel Pump Motor	N/A	N/A	N/A	88127	Pump motor not rated for area / incorrect equipment type for area.
2	Matimba	Unit 6 Gen Diesel Tank	Motor Isolator	N/A	N/A	N/A	N/A	Motor isolator not rated for area / incorrect equipment type for area.
3	Matimba	Unit 6 Gen Diesel Tank	Tank Level Switch	N/A	N/A	N/A	N/A	Tank level switch not rated for area / incorrect equipment type for area.

7.13.2 Generator Diesel Tank Unit 6 Fault list

Item Nr.on Detail List	Equipment Description	Fault Description	QTY	Rectification Action Required
1	Diesel Pump Motor	Motor not Ex rated	1	Replace existing motor with Ex rated motor
2	Motor Isolator	Incorrect equipment for area, no Ex rating	1	Replace with Ex rated isolator
3	Tank Level Switch	Incorrect equipment for area, no Ex rating	1	Replace with Ex rated level switch

7.13.3 Detailed Material List for upgrade

ITEM	EQUIPMENT DETAIL	QTY	Ex Rating
1	Calpeda, 0.55 KW, 3Phase, CA90, 2850rpm motor / pump unit	1	Ex d IIC T1 - T6
2	Cable Gland, SWA	4	Ex d
3	SWA 2.5mm2 3core	150m	SABS Approved
4	Motor isolator	1	Ex de IIC T6
5	Tank Level Switch	1	Ex ia IIC T6

7.14 SCOPE FOR H2 PLANT –ZONE 2

7.14.1 H2 Main Plant Detailed list

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
1	Matimba	H2 Main Plant Electrolyser	LIGHT FITTINGS - NORDLAND	NONE	SABS S/P 781	Ex ed II T4	NONE	Glands should be PVC/Incorrect stoppers used/ no protection on lights
2	Matimba	H2 Main Plant Electrolyser	LIGHT FITTINGS - NORDLAND	NONE	SABS S/P 781	Ex ed II T4	NONE	
3	Matimba	H2 Main Plant Electrolyser	LIGHT FITTINGS - NORDLAND	NONE	SABS S/P 781	Ex ed II T4	NONE	
4	Matimba	H2 Main Plant Electrolyser	LIGHT FITTINGS - NORDLAND	NONE	SABS S/P 781	Ex ed II T4	NONE	
5	Matimba	H2 Main Plant Electrolyser	EMERGENCY STOP STATIONS	NONE	NONE	Ex edm IIC T6	NONE	No indication to w hat it control
6	Matimba	H2 Main Plant Electrolyser	EMERGENCY STOP STATIONS	NONE	NONE	Ex edm IIC T6	NONE	No indication to w hat it control
7	Matimba	H2 Main Plant Electrolyser	GAS COOLING AGGREGATE CIRCULATING PUMP	00QGB10AP010	NONE	Ex e II	NONE	Equipment corroded, Poor maintenance
8	Matimba	H2 Main Plant Electrolyser	LYE PUMP	00QGA10AP010	NONE	Ex n T3	3926398/13	KKS labelling painted. No guard over shaft, stopper not rated for location
9	Matimba	H2 Main Plant Electrolyser	SELECTOR SWITCH	NONE	NONE	Ex de IIC T6	NONE	No indication to w hat it control
10	Matimba	H2 Main Plant Electrolyser	H2 PURITY METER	NONE	NONE	Ex ia IIB T3	A000126	No cap on un used port
11	Matimba	H2 Main Plant Electrolyser	PRESSURE GAUGE	00QGA10CP530	NONE	Ex ia IIC T6	15956T022985	Incorrect stoppers installed
12	Matimba	H2 Main Plant Electrolyser	LEVEL SWITCH	NONE	NONE	Ex ia IIC T6	5541127	instrument not in use
13	Matimba	H2 Main Plant Electrolyser	SOLINOID VALVE	NONE	NONE	NONE	NONE	No info on instrument
14	Matimba	H2 Main Plant Gas holder	EMERGENCY STOP	NONE	NONE	Ex edm IIC T6	NONE	No indication to w hat it control
15	Matimba	H2 Main Plant Gas holder	LIGHT FITTINGS - NORDLAND	NONE	SABS S/P 781	Ex ed II T4	NONE	Glands should be PVC/Incorrect stoppers used/ no protection on lights
16	Matimba	H2 Main Plant Gas holder	LIGHT FITTINGS - NORDLAND	NONE	SABS S/P 781	Ex ed II T4	NONE	
17	Matimba	H2 Main Plant Gas holder	LIGHT FITTINGS - NORDLAND	NONE	SABS S/P 781	Ex ed II T4	NONE	
18	Matimba	H2 Main Plant Gas holder	LIGHT FITTINGS - NORDLAND	NONE	SABS S/P 781	Ex ed II T4	NONE	
19	Matimba	H2 Main Plant Gas holder	LIMIT SWITCH	00QGE10CL310	NONE	GROUP 1 SA 2B 2C	NONE	Information plate rusted/ painted
20	Matimba	H2 Main Plant Gas holder	LIMIT SWITCH	00QGE10CL320	NONE	GROUP 1 SA 2B 2C	NONE	
21	Matimba	H2 Main Plant Gas holder	LIMIT SWITCH	00QGE10CL330	NONE	GROUP 1 SA 2B 2C	NONE	
22	Matimba	H2 Main Plant Gas holder	LIMIT SWITCH	00QGE10CL340	NONE	GROUP 1 SA 2B 2C	NONE	
23	Matimba	H2 Main Plant Gas holder	GAS INLET VALVE PRESSURE SWITCH	NONE	NONE	NONE	A1407	Equipment not properly fitted/ Equipment not Ex Rated
24	Matimba	H2 Main Plant Compressor room	JUNCTION BOX	NONE	NONE	Ex e II T6	14615	Gland not rated for the area
25	Matimba	H2 Main Plant Compressor room	SOLINOIDE VALVE 1	00QGH10AA210	NONE	Ex ed IIC T5	NONE	No Serial Numbers
26	Matimba	H2 Main Plant Compressor room	SOLINOIDE VALVE 2	00QGH10AA220	NONE	Ex ed IIC T5	NONE	
27	Matimba	H2 Main Plant Compressor room	SOLINOIDE VALVE 3	00QGH10AA230	NONE	Ex ed IIC T5	NONE	
28	Matimba	H2 Main Plant Compressor room	SOLINOIDE VALVE 4	00QGH10AA240	NONE	Ex ed IIC T5	NONE	
29	Matimba	H2 Main Plant Compressor room	SOLINOIDE VALVE 5	00QGH10AA250	NONE	Ex ed IIC T5	NONE	
30	Matimba	H2 Main Plant Compressor room	SOLINOIDE VALVE 6	00QGH10AA260	NONE	Ex ed IIC T5	NONE	
31	Matimba	H2 Main Plant Compressor room	SOLINOIDE VALVE 7	00QGH10AA330	NONE	Ex ed IIC T5	NONE	
32	Matimba	H2 Main Plant Compressor room	SOLINOIDE VALVE 8	00QGH10AA271	NONE	Ex ed IIC T5	NONE	
33	Matimba	H2 Main Plant Compressor room	FLOW METER	NONE	NONE	Ex ib IIC T4	000100902X002	No bonding on equipment
34	Matimba	H2 Main Plant Compressor room	MEDIUM PRESSURE COMPRESSOR MOTOR	00QGF20AN010	NONE	Ex II T2	B2578/1IH	Gland not properly fitted
35	Matimba	H2 Main Plant Compressor room	SOLINOID VALVE	NONE	NONE	Ex d 11 T3	22138 EF	No KKS labelling
36	Matimba	H2 Main Plant Compressor room	KEY SWITCH	NONE	NONE	Ex edm IIC T6	89/336/EWG	No indication to w hat it control
37	Matimba	H2 Main Plant Compressor room	COMPRESSOR FAN MOTOR	NONE	NONE	Ex n T3	3117	No bonding on equipment
38	Matimba	H2 Main Plant Compressor room	KEY SWITCH	NONE	NONE	Ex edm IIC T6	NONE	No indication to w hat it control
39	Matimba	H2 Main Plant Compressor room	JUNCTION BOX	NONE	NONE	Ex e II T6	14594	Gland not rated for the area

40	Matimba	H2 Main Plant Compressor room	SOLINOID VALVE 1	00QGH20AA210	NONE	Ex d IIC T5	NONE	No Serial Numbers
41	Matimba	H2 Main Plant Compressor room	SOLINOID VALVE 2	00QGH20AA220	NONE	Exd d IIC T5	NONE	
42	Matimba	H2 Main Plant Compressor room	SOLINOID VALVE 3	00QGH20AA230	NONE	EX d IIC T5	NONE	
43	Matimba	H2 Main Plant Compressor room	SOLINOID VALVE 4	00QGH20AA240	NONE	Exd IIC T5	NONE	
44	Matimba	H2 Main Plant Compressor room	SOLINOID VALVE 5	00QGH20AA250	NONE	Ex d IIC T5	NONE	
45	Matimba	H2 Main Plant Compressor room	SOLINOID VALVE 6	00QGH20AA260	NONE	Ex d IIC T5	NONE	
46	Matimba	H2 Main Plant Compressor room	SOLINOID VALVE 7	00QGH20AA270	NONE	Ex d IIC T5	NONE	
47	Matimba	H2 Main Plant Compressor room	SOLINOID VALVE 8	00QGH20AA330	NONE	Ex d IIC T5	NONE	
48	Matimba	H2 Main Plant Compressor room	FLOW METER	NONE	NONE	Ex ib IIC T4	000100902/X001	No bonding on equipment
49	Matimba	H2 Main Plant Compressor room	MEDIUM PRESSURE COMPRESSOR MOTOR	00QGF10AN010	NONE	Ex n T3	B5833/4IJ	Cable number missing
50	Matimba	H2 Main Plant Compressor room	SOLINOID VALVE	NONE	NONE	Ex d T3	EFX B3 2A 184	No KKS labelling
51	Matimba	H2 Main Plant Compressor room	KEY SWITCH	NONE	NONE	Ex edm IIC T6	NONE	No indication to w hat it control
52	Matimba	H2 Main Plant Compressor room	COOLING FAN MOTOR	NONE	NONE	Ex n T3	WDX 7375/43	No bonding on equipment
53	Matimba	H2 Main Plant Compressor room	HIGH PRESSURE COMPRESSOR MOTOR	00QGF30AN010	NONE	Ex n T3	D7446/13JD	Unused cables to be disconnected in area
54	Matimba	H2 Main Plant Compressor room	EMERGENCY STOP	NONE	NONE	Ex edm IIC T6	NONE	No indication to w hat it control
55	Matimba	H2 Main Plant Compressor room	SOLINOID VALVE	NONE	NONE	NONE	NONE	No Ex rating on equipment, No bonding
56	Matimba	H2 Main Plant Compressor room	PRESSURE TRANSMITTER	00QGU30CP510	NONE	Ex ia IIC T6	15936T022184	Incorrect stoppers installed
57	Matimba	H2 Main Plant Compressor room	SOLINOID VALVE (WITH PRATLEY BOX)	00QGU30AA210	NONE	Ex m II T4	3921	Instrument broken
58	Matimba	H2 Main Plant Compressor room	FLOW METER	00QGU30CF310	NONE	Ex ia IIC T1	5/164856.001	Stopper and gland not rated for area
59	Matimba	H2 Main Plant Compressor room	LIGHT FITTINGS - NORDLAND	NONE	SABS S/P 781	Ex ed II T4	NONE	Glands should be PVC/Incorrect stoppers used/ no protection on lights
60	Matimba	H2 Main Plant Compressor room	LIGHT FITTINGS - NORDLAND	NONE	SABS S/P 781	Ex ed II T4	NONE	
61	Matimba	H2 Main Plant Compressor room	LIGHT FITTINGS - NORDLAND	NONE	SABS S/P 781	Ex ed II T4	NONE	
62	Matimba	H2 Main Plant Analyser panel	PRESSURE TRANSMITTER	NONE	NONE	Ex ia IIC T6	15936T022988	Incorrect stoppers installed
63	Matimba	H2 Main Plant Analyser panel	Flp Enclosure	0 0QGS10 AA605	S-SM7/11.0051X	Ex d IIC	14/018 V5590	Equipment not in use
64	Matimba	H2 Main Plant Analyser panel	Flp Enclosure	0 0QGS10 CQ011	S.SM7/11.0051X	Ex d IIC	14/019 V6690	
65	Matimba	H2 Main Plant Analyser panel	O2 Purity Analyser	0 0QGS10 CM010	SAEx S/13-038X	Ex ia IIC T4	3771E	
66	Matimba	H2 Main Plant Analyser panel	Moisture probe	0 0QGS10 CQ010	S-XPL/12.0234X	Ex ia IIC T4	260036-A	
67	Matimba	H2 Main Plant Analyser panel	Flow Switch	NONE	S-XPL/13.1060	Ex ia IIC T6	NONE	
68	Matimba	H2 Main Plant Analyser panel	Display	0 0QGS10 CM011	S-SAEx/12-016X(R1)	Ex tD IIC T6	2286412	
69	Matimba	H2 Main Plant Analyser panel	Display	0 0QGS10 CM021	SAEx S/12-099	Ex ia IIC T5	065037/01/001	
70	Matimba	H2 Main Plant Analyser panel	Thermal Conductivity Analyser	0 0QGS10 CM020	S-XPL/14.1655X	Ex d IIC T6	n4237	

7.14.2 H2 Main Plant Fault list

Item Nr.on Detail List	Equipment Description	Fault Description	QTY	Rectification Action Required
1-4	LIGHT FITTINGS - NORDLAND	Glands should be PVC/Incorrect stoppers used/ no protection on lights	4	Replace lights, Glands and Stoppers
5-6	EMERGENCY STOP STATIONS	No indication to what it control	2	Label indication for which it opperate
7	GAS COOLING AGGREGATE CIRCULATING PUMP	Equipment corroded, Poor maintenance	1	Send motor for repairs at an approved Ex lab
8	LYE PUMP	KKS labelling painted. No guard over shaft, stopper not rated for location	1	Clean of paint from KKS, cover motor shaft with guard
9	SELECTOR SWITCH	No indication to what it control	1	Label indication for which it opperate
10	H2 PURITY METER	No cap on un used port	1	Place cap over unused port
11	PRESSURE GAUGE	Incorrect stoppers installed	1	Install Ex rated stoppers
12	LEVEL SWITCH	instrument not in use	1	Disconnect/ remove instrument or repair instrument
13	SOLINOID VALVE	No info on instrument	1	Replace Instrument
14	EMERGENCY STOP	No indication to what it control	1	Label indication for which it opperate
15-18	LIGHT FITTINGS - NORDLAND	Glands should be PVC/Incorrect stoppers used/ no protection on lights	4	Replace lights, Glands and Stoppers
19-22	LIMIT SWITCH	Information plate rusted/ painted	4	Replace equipment
23	GAS INLET VALVE PRESSURE SWITCH	Equipment not properly fitted/ Equipment not Ex rated	1	Properly fit equipment to base/ Replace equipment
24	JUNCTION BOX	Gland not rated for the area	1	Replace glands
25-32	SOLINOIDE VALVE'S	No Serial Numbers	8	Replace instrument with unique serial number
33	FLOW METER	No bonding on equipment	1	Bond equipment to plant earth
34	MEDIUM PRESSURE COMPRESSOR MOTOR	Gland not properly fitted	1	Propperly fit gland toequipment
35	SOLINOID VALVE	No KKS labelling	1	Install KKS labels atequipment
36	KEY SWITCH	No indication to what it control	1	Label indication for which it opperate
37	COMPRESSOR FAN MOTOR	No bonding on equipment	1	Bond equipment to plant earth
38	KEY SWITCH	No indication to what it control	1	Label indication for which it opperate
39	JUNCTION BOX	Gland not rated for the area	1	Replace glands
40-47	SOLINOIDE VALVE'S	No Serial Numbers	8	Replace instrument with unique serial number
48	FLOW METER	No bonding on equipment	1	Bond equipment to plant earth
49	MEDIUM PRESSURE COMPRESSOR MOTOR	Cable number missing	1	Install cable number
50	SOLINOID VALVE	No KKS labelling	1	Install KKS labels atequipment
51	KEY SWITCH	No indication to what it control	1	Label indication for which it opperate
52	COOLING FAN MOTOR	No bonding on equipment	1	Bond equipment to plant earth
53	HIGH PRESSURE COMPRESSOR MOTOR	Unused cables to be disconnected in area	1	Remove unused cables and equipment
54	EMERGENCY STOP	No indication to what it control	1	Label indication for which it opperate
55	SOLINOID VALVE	No Ex rating on instrument, No bonding	1	Provide instrument supporting documentation, bond instrument to plant earth
56	PRESSURE TRANSMITTER	Incorrect stoppers installed	1	Install Ex rated stoppers
57	SOLINOID VALVE (WITH PRATLEY BOX)	Instrument broken	1	Replace instrument
58	FLOW METER	Stopper and gland not rated for area	1	Replace with Ex rated stoppers and glands
59-61	LIGHT FITTINGS - NORDLAND	Glands should be PVC/Incorrect stoppers used/ no protection on lights	3	Replace lights, Glands and Stoppers
62	PRESSURE TRANSMITTER	Incorrect stoppers installed	1	Install Ex rated stoppers

7.14.3 Detailed Material List for upgrade

ITEM	EQUIPMENT DETAIL	QTY	Ex Rating
1	LED Light fitting 40 Watt Double tube,	14	Ex e IIC T1 - T6
2	Cable Gland, SWA	75	Ex e IIC T1 - T6
	Cable Gland, PVC	16	Ex e IIC T1 - T6
	Stoppers	20	Ex e IIC T1 - T6
3	SWA 2.5mm2 3core	180	SABS Approved
4	Hydrogen Detector system complete	3	Eex ia IIC T6
5	Hydrogen Detection Sensors	15	Eex ia IIC T4
6	Fire Break glass Unit	3	Eex ia IIC T4
7	Fire Extinguisher - 9 Kg Power Type	6	
9	Demarcation Boards	3	
10	4mm earth/ bonding cables	300	
	Solinoid Valve	19	Ex ed IIC T5
	Limit switch	4	Eex ia IIC T6
11	CCG Junction Box with Terminals 2xL 2xN and Earth, with barriers between L/N/E	14	Ex e IIC T1-T6

7.15 SCOPE FOR MMD SPRAY BOOTH – ZONE 1

7.15.1 MMD Spray Booth Detailed list

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
1	Matimba	Spray booth- MMD	LIGHT FITTING - VOLTEX	N/A	SABS S/V520A	Ex n IIC T4	Not visible	Stopper not Ex rated/ No gland utilized/ Illegal entry made into light fitting
2	Matimba	Spray booth- MMD	EXTRANCTION FAN MOTOR	N/A	N/A	N/A	P18	No feed from/ Control Point indication

7.15.2 MMD Spray Booth Fault list

Item Nr.on Detail List	Equipment Description	Fault Description	QTY	Rectification Action Required
1	LIGHT FITTING - VOLTEX	Stopper not Ex rated/ No gland utilized/ Illegal entry made into light fitting	2	Provide documentation for light fittings/ replace glands and stoppers
2	EXTRANCTION FAN MOTOR	No feed from/ Control Point indication/ No bonding	1	Provide labelling

7.15.3 Detailed Material List for upgrade

ITEM	EQUIPMENT DETAIL	QTY	Ex Rating
1	LED Light fitting 40 Watt Double tube,	1	Ex e IIB T3 - T6
2	Cable Gland, SWA	2	Ex e IIB T3 - T6
3	Stoppers	3	Ex e IIB T3 - T6
4	SWA 2.5mm2 3core	150	SABS Approved
5	Fire Extinguisher - 9 Kg Power Type	2	
6	Demarcation Boards	2	
7	4mm earth/ bonding cables	150	
8	Miscellanies (Cable Straps / Lugs / Insulation Tape / Stanley Knife Blades / Conduit / Wall Plugs / Saddles)	As Per Site	

7.15.4 General fault list

- Plant earth should be installed in battery room, and confirmed
- All equipment with conductive casings should be bonded to the plant earth

7.16 SCOPE FOR OUTSIDE PLANT BATTERY ROOM – ZONE 2

7.16.1 Outside Plant Battery Room Detailed list

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
1	Matimba	Outside Plant Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
2	Matimba	Outside Plant Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
3	Matimba	Outside Plant Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
4	Matimba	Outside Plant Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
5	Matimba	Outside Plant Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
6	Matimba	Outside Plant Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
7	Matimba	Outside Plant Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
8	Matimba	Outside Plant Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
9	Matimba	Outside Plant Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
10	Matimba	Outside Plant Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	Incorrect glands and cable use/ Incorrect stoppers used/ no protection on lights
11	Matimba	Outside Plant Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
12	Matimba	Outside Plant Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
13	Matimba	Outside Plant Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
14	Matimba	Outside Plant Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
15	Matimba	Outside Plant Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
16	Matimba	Outside Plant Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
17	Matimba	Outside Plant Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
18	Matimba	Outside Plant Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
19	Matimba	Outside Plant Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
20	Matimba	Outside Plant Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	

7.16.2 Outside Plant Battery Room Detailed list

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
21	Matimba	Outside Plant Battery Room	Emergency Light Fittings	N/A	N/A	N/A	N/A	Emergency lights should be verified
22	Matimba	Outside Plant Battery Room	Emergency Light Fittings	N/A	N/A	N/A	N/A	
23	Matimba	Outside Plant Battery Room	Emergency Light Fittings	N/A	N/A	N/A	N/A	
24	Matimba	Outside Plant Battery Room	Emergency Light Fittings	N/A	N/A	N/A	N/A	
25	Matimba	Outside Plant Battery Room	IR³ Flames Detector	N/A	BAS02ATEX1001X	EX ia 11C T4	18072	Sprague tube not rated for area/ inspection box not rated for area/ incorrect equipment type for area
26	Matimba	Outside Plant Battery Room	IR³ Flames Detector	N/A	BAS02ATEX1001X	EX ia 11C T4	18072	Sprague tube not rated for area/ inspection box not rated for area/ incorrect equipment type for area
27	Matimba	Outside Plant Battery Room	Entrance door	N/A	N/A	N/A	N/A	Door lock struggle to open/ Fire barrier damaged
28	Matimba	None	Main Supply DB	N/A	N/A	N/A	N/A	Could not locate Main Supply DB
29	Matimba	Outside Plant Battery Room	Battery Bank	NO	N/A	N/A	N/A	108 x Chloride YAP17 2v 64Ah
30	Matimba	Outside Plant Battery Room	Battery Bank	NO	N/A	N/A	N/A	12 x Chloride YCP13 2v 161Ah
31	Matimba	Outside Plant Battery Room	Battery Bank	NO	N/A	N/A	N/A	12 x Chloride YCP13 2v 161Ah
32	Matimba	Outside Plant Battery Room	Battery Bank	00 GYK 11	N/A	N/A	N/A	13 x Chloride YCP33 2v 429Ah
33	Matimba	Outside Plant Battery Room	Battery Bank	NO	N/A	N/A	N/A	13 x Chloride YCP33 2v 429Ah
34	Matimba	Outside Plant Battery Room	Battery Bank	00 GYK 13	N/A	N/A	N/A	108 x Chloride YCP9 2v 107AH
35	Matimba	Outside Plant Battery Room	Battery Bank	NO	N/A	N/A	N/A	108 x Chloride YCP9 2v 107AH
36	Matimba	Outside Plant Battery Room	Demarcation Boards	N/A	N/A	N/A	N/A	No demarcation boards available
37	Matimba	Outside Plant Battery Room	Wire Ways and Trunking	N/A	N/A	N/A	N/A	Sealing of conduit/wire way runs into safe area
38	Matimba	Outside Plant Battery Room	Fire Extingushers	N/A	N/A	N/A	N/A	No Fire Extinguishers available
39	Matimba	Outside Plant Battery Room	Hydrogen Detection	N/A	N/A	N/A	N/A	No Hydrogen Detection Visible
40	Matimba	Outside Plant Battery Room	Maintenance Cabinet	N/A	N/A	N/A	N/A	Fit with Thermometer / Gloves / Jug / Funnel / Eye wash / Apron
41	Matimba	None	HVAC Ventilation System	N/A	N/A	N/A	N/A	1) Bonding of equipment in safe area
			HVAC Ventilation System	N/A	N/A	N/A	N/A	2) Area to be cleaned and maintained
			HVAC Ventilation System	N/A	N/A	N/A	N/A	3) Earthing & Bonding to be fitted unto ducting
			HVAC Ventilation System	N/A	N/A	N/A	N/A	4) Ducting, vents & filters to be cleaned, remove residue
			HVAC Ventilation System	N/A	N/A	N/A	N/A	5) Wall entries to be sealed off

7.16.3 Outside Plant Battery Room Fault list

Item Nr.on Detail List	Equipment Description	Fault Description	QTY	Rectification Action Required
1-20	Light Fittings - Nordland	Incorrect glands and cable use/ Incorrect stoppers used/ no protection on lights	20	Install SWA cable, appropriate glands and junction boxes/ Replace lights
21-24	Emergency Light Fittings	Could not verify emergency lights	4	Lights should verified
25-26	IR³ Flames Detector	Incorrect equipment for area/ no Ex rated inspection box or spraque used/ Duplicated serial numbers	2	Replace with Ex rated gas detector/ Install Ex rated junction box/ Remove spraque
27	Entrance door	Door is damaged and does not seal properly/ Door lock struggle to open/ Fire barrier damaged	1	Replace door/ Seal off all openings in walls
28	Main Supply DB Board	Could not locate Main supply DB	1	Feed from locatation should be indicated on equipment
36	Battery Room	Demarcation Boards	2	Install approved Demarcation Boards
37	Battery Room	Wire Ways and Trunking	2	Properly seal off wire ways and trunking
38	Battery Room	Fire Extingushers	2	No Fire Extinguishers available
39	Battery Room	Hydrogen Detection	2	No Hydrogen Detection Visible
40	Battery Room	Maintenance Cabinet	1	Fit with Thermometer / Gloves / Jug / Funnel / Eye wash / Apron
41	Battery Room	HVAC Ventilation System	1	Do maintenance and bonding on equipment

7.16.4 Detailed Material List for upgrade

ITEM	EQUIPMENT DETAIL	QTY	Ex Rating
1	LED Light fitting 40 Watt Double tube,	22	Ex e IIC T1 - T6
2	Cable Gland, SWA	110	Ex e IIC T1 - T6
3	SWA 2.5mm2 3core	180	SABS Approved
4	Hydrogen Detector system complete	1	Eex ia IIC T6
5	Hydrogen Detection Sensors	5	Eex ia IIC T4
6	Fire Break glass Unit	1	Eex ia IIC T4
7	Fire Extinguisher - 9 Kg Power Type	2	
8	Stock Maintenance Equipment Cabinet with Thermometer / Gloves / Jug / Funnel / Eye wash / Apron	1	
9	Demarcation Boards	2	
10	4mm earth/ bonding cables	250	
11	CCG Junction Box with Terminals 2xL 2xN and Earth, with barriers between L/N/E	22	Ex e IIC T1-T6

7.17 SCOPE FOR OUTSIDE PLANT SPRAY BOOTH – ZONE 1

7.17.1 MMD Spray Booth Detailed list

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
1	Matimba	Spray booth- Outside plant	Light Fittings - Nordland	N/A	SABS S/P 781	Ex ed II T4	Not visible	Gland and stoppers not correctly ex rated/ light fitting does not specify w hich gas group
2	Matimba	Spray booth- Outside plant	Light Fittings - Nordland	N/A	SABS S/P 782	Ex ed II T4	Not visible	
3	Matimba	Spray booth- Outside plant	Light Fittings - Nordland	N/A	SABS S/P 783	Ex ed II T4	Not visible	
4	Matimba	Spray booth- Outside plant	Light Fittings - Nordland	N/A	SABS S/P 784	Ex ed II T4	Not visible	
5	Matimba	Spray booth- Outside plant	Light Fittings - Nordland	N/A	SABS S/P 785	Ex ed II T4	Not visible	
6	Matimba	Spray booth- Outside plant	SPRAY PAINT BOOTH MOTOR	OUST 11 AN001-MO1	N/A	N/A	0412300/27/UE	No feed from/ Control Point indication

7.17.2 Outside Plant Spray Booth Fault list

Item Nr.on Detail List	Equipment Description	Fault Description	QTY	Rectification Action Required
1-5	Light Fittings - Nordland	Gland and stoppers not correctly ex rated/ light fitting does not specify which gas group	5	Provide documentation for light fittings/ replace glands and stoppers
6	Spray Paint Booth Motor	No feed from/ Control Point indication	1	Provide labelling

7.17.3 Detailed Material List for upgrade

ITEM	EQUIPMENT DETAIL	QTY	Ex Rating
1	Cable Gland, SWA	25	Ex e IIB T3 - T6
2	Stoppers	5	Ex e IIB T3 - T6
3	SWA 2.5mm2 3core	40	SABS Approved
4	Fire Extinguisher - 9 Kg Power Type	2	
5	Demarcation Boards	2	
6	CCG Junction Box with Terminals 2xL 2xN and Earth, with barriers between L/N/E	5	Ex e IIB T3-T6

7.17.4 General fault list

- Plant earth should be installed in battery room, and confirmed
- All equipment with conductive casings should be bonded to the plant earth

7.18 SCOPE FOR PETROL PUMP STATION – ZONE 1 & 2

7.18.1 Petrol Pump Station Detailed list

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
1	Matimba	Pertol Pump Station	Petrol pump	N/A	SXPL05101	EX d IIA T3	R-1085	
2	Matimba	Pertol Pump Station	Diesel pump	N/A	SXPL05101	EX d IIA T3	R-448	

7.18.2 Petrol Pump Station Fault list

Item Nr.on Detail List	Equipment Description	Fault Description	QTY	Rectification Action Required
1-2	Petrol/ Diesel pumps	Wire ways damaged	1	Replace Wire way
1-2	Petrol/ Diesel pumps	Wire colour coding incorrect in the DB	1	Apply correct colour coding for neutral and earth conductors using heat shrink
3	Petrol Pump Glass register cover	No glass installed	1	Replace glass

7.18.3 Detailed Material List for upgrade

ITEM	EQUIPMENT DETAIL	QTY	Ex Rating
1	50X50mm Galvenised wire way with lid	5	
2	50mm Steel pipe	6	
3	Petrol Pump Glass register cover	1	

7.18.4 General fault list

- All equipment with conductive casings should be bonded to the plant earth

7.19 SCOPE FOR STATION BATTERY ROOM – ZONE 2

7.19.1 Station Battery Room Detailed list

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
1	Matimba	Station Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
2	Matimba	Station Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
3	Matimba	Station Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
4	Matimba	Station Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
5	Matimba	Station Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
6	Matimba	Station Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
7	Matimba	Station Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
8	Matimba	Station Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
9	Matimba	Station Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
10	Matimba	Station Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
11	Matimba	Station Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
12	Matimba	Station Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	Incorrect glands and cable use/ Incorrect stoppers used/ no protection on lights
13	Matimba	Station Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
14	Matimba	Station Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
15	Matimba	Station Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
16	Matimba	Station Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
17	Matimba	Station Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
18	Matimba	Station Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
19	Matimba	Station Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
20	Matimba	Station Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
21	Matimba	Station Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
22	Matimba	Station Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
23	Matimba	Station Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	

7.19.2 Station Battery Room Detailed list (continued)

24	Matimba	Station Battery Room	IR³ Flames Detector	N/A	BAS02ATEX1001	EX ia 11C T4	16251	Sprague tube not rated for area/ inspection box not rated for area/ incorrect equipment type for area
25	Matimba	Station Battery Room	Entrance door	N/A	N/A	N/A	N/A	Door is damaged and does not seal properly/ Door lock struggle to open/ Fire barrier damaged
26	Matimba	Station Battery Room	Battery Bank	00 BTD 20	N/A	N/A	N/A	108 x Chloride YHP13 2v 643Ah
27	Matimba	Station Battery Room	Battery Bank	00 BTD 10	N/A	N/A	N/A	108 x Chloride YHP13 2v 643Ah
28	Matimba	Station Battery Room	Demarcation Boards	N/A	N/A	N/A	N	No demarcation boards available
29	Matimba	Station Battery Room	Wire Ways and Trunking	N/A	N/A	N/A	N/A	Sealing of conduit/wire way runs into safe area
30	Matimba	Station Battery Room	Fire Extingushers	N/A	N/A	N/A	N/A	No Fire Extinguishers available
31	Matimba	Station Battery Room	Hydrogen Detection	N/A	N/A	N/A	N/A	No Hydrogen Detection Visible
32	Matimba	Station Battery Room	Maintenance Cabinet	N/A	N/A	N/A	N/A	Fit with Thermometer / Gloves / Jug / Funnel / Eye wash / Apron
33	Matimba	None	HVAC Ventilation System	N/A	N/A	N/A	N/A	1) Bonding of equipment in safe area
			HVAC Ventilation System	N/A	N/A	N/A	N/A	2) Area to be cleaned and maintained
			HVAC Ventilation System	N/A	N/A	N/A	N/A	3) Earthing & Bonding to be fitted unto ducting
			HVAC Ventilation System	N/A	N/A	N/A	N/A	4) Ducting, vents & filters to be cleaned, remove residue
			HVAC Ventilation System	N/A	N/A	N/A	N/A	5) Wall entries to be sealed off
			HVAC Ventilation System	N/A	N/A	N/A	N	6) Ventilation sustem couldn't be found

7.19.3 Station Battery Room Fault list

Item Nr.on Detail List	Equipment Description	Fault Description	QTY	Rectification Action Required
1-23	Light Fittings - Nordland	Incorrect glands and cable use/ Incorrect stoppers used/ no protection on lights	23	Install SWA cable, appropriate glands and junction boxes/ Replace lights
24	IR³ Flames Detector	Incorrect equipment for area/ no Ex rated inspection box or spraque used	1	Replace with Ex rated gas detector/ Install Ex rated junction box/ Remove spraque
25	Entrance door	Door is damaged and does not seal properly/ Door lock struggle to open/ Fire barrier damaged	1	Replace door/ Seal off all openings in walls
28	Battery Room	Demarcation Boards	2	Install approved Demarcation Boards
29	Battery Room	Wire Ways and Trunking	2	Properly seal off wire ways and trunking
30	Battery Room	Fire Extingushers	2	No Fire Extinguishers available
31	Battery Room	Hydrogen Detection	2	No Hydrogen Detection Visible
32	Battery Room	Maintenance Cabinet	1	Fit with Thermometer / Gloves / Jug / Funnel / Eye wash / Apron
33	Battery Room	HVAC Ventilation System Generalized	1	Do maintenance and bonding on equipment/ ventilation fans could not be found

7.19.4 Detailed Material List for upgrade

EQUIPMENT DETAIL	QTY	Ex Rating
LED Light fitting 40 Watt Double tube,	25	Ex e IIC T1 - T6
Cable Gland, SWA	125	Ex e IIC T1 - T6
SWA 2.5mm2 3core	180	SABS Approved
Hydrogen Detector system complete	1	Eex ia IIC T6
Hydrogen Detection Sensors	5	Eex ia IIC T4
Fire Break glass Unit	1	Eex ia IIC T4
Fire Extinguisher - 9 Kg Power Type	2	
Stock Maintenance Equipment Cabinet with Thermometer / Gloves / Jug / Funnel / Eye wash / Apron	1	
Demarcation Boards	2	
4mm earth/ bonding cables	250	
CCG Junction Box with Terminals 2xL 2xN and Earth, with barriers between L/N/E	25	Ex e IIC T1-T6
Miscellanies (Cable Straps / Lugs / Insulation Tape / Stanley Knife Blades / Conduit / Wall Plugs / Saddles)	As Per Site	

7.20 SCOPE FOR UNIT 1 BATTERY ROOM – ZONE 2

7.20.1 Unit 1 Battery Room Detailed list

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
1	Matimba	Unit 1 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
2	Matimba	Unit 1 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
3	Matimba	Unit 1 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
4	Matimba	Unit 1 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
5	Matimba	Unit 1 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
6	Matimba	Unit 1 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
7	Matimba	Unit 1 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
8	Matimba	Unit 1 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
9	Matimba	Unit 1 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
10	Matimba	Unit 1 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
11	Matimba	Unit 1 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
12	Matimba	Unit 1 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	Incorrect glands and cable use/ Incorrect stoppers used/ no protection on lights
13	Matimba	Unit 1 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
14	Matimba	Unit 1 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
15	Matimba	Unit 1 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
16	Matimba	Unit 1 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
17	Matimba	Unit 1 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
18	Matimba	Unit 1 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
19	Matimba	Unit 1 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
20	Matimba	Unit 1 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
21	Matimba	Unit 1 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
22	Matimba	Unit 1 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
23	Matimba	Unit 1 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
24	Matimba	Unit 1 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	

7.20.2 Unit 1 Battery Room Detailed list (continued)

25	Matimba	Unit 1 Battery Room	IR³ Flames Detector	N/A	BAS02ATEX1001	EX ia IIC T4	18072	Sprague tube not rated for area/ inspection box not rated for area/ incorrect equipment type for area
26	Matimba	Unit 1 Battery Room	Entrance door	N/A	N/A	N/A	N/A	Door lock struggle to open/ Fire barrier damaged
27	Matimba	Unit 1 Battery Room	Battery Bank	10 BTD 40	N/A	N/A	N/A	12 X Chloride YCP13 2V 161Ah
28	Matimba	Unit 1 Battery Room	Battery Bank	10 BTA 20	N/A	N/A	N/A	108 X Chloride YCP13 2V 161Ah
29	Matimba	Unit 1 Battery Room	Battery Bank	10 BTA 40	N/A	N/A	N/A	108 X Chloride YCP13 2V 161Ah
30	Matimba	Unit 1 Battery Room	Battery Bank	10 BTA 10	N/A	N/A	N/A	104 X Chloride YHP13 2V 643Ah
31	Matimba	Unit 1 Battery Room	Battery Bank	00 BTA 10	N/A	N/A	N/A	108 X Chloride YCP33 2V 429Ah
32	Matimba	Unit 1 Battery Room	Battery Bank	00 BTA 20	N/A	N/A	N/A	108 X Chloride YCP33 2V 429Ah
33	Matimba	Unit 1 Battery Room	Battery Bank	10 BTD 10	N/A	N/A	N/A	13 X Chloride YHP41 2V 2144Ah
34	Matimba	Unit 1 Battery Room	Battery Bank	10 BTD 30	N/A	N/A	N/A	13 X Chloride YHP41 2V 2144Ah
35	Matimba	Unit 1 Battery Room	Battery Bank	10 BTD 20	N/A	N/A	N/A	12 X Chloride YCP13 2V 161Ah
36	Matimba	Unit 1 Battery Room	Demarcation Boards	N/A	N/A	N/A	N	No demarcation boards available
37	Matimba	Unit 1 Battery Room	Wire Ways and Trunking	N/A	N/A	N/A	N/A	Sealing of conduit/w ire w ay runs into safe area
38	Matimba	Unit 1 Battery Room	Fire Extingushers	N/A	N/A	N/A	N/A	No Fire Extinguishers available
39	Matimba	Unit 1 Battery Room	Hydrogen Detection	N/A	N/A	N/A	N/A	No Hydrogen Detection Visible
40	Matimba	Unit 1 Battery Room	Maintenance Cabinet	N/A	N/A	N/A	N/A	Fit w ith Thermometer / Gloves / Jug / Funnel / Eye w ash / Apron
41	Matimba	None	HVAC Ventilation System	N/A	N/A	N/A	N/A	1) Bonding of equipment in safe area
			HVAC Ventilation System	N/A	N/A	N/A	N/A	2) Area to be cleaned and maintained
			HVAC Ventilation System	N/A	N/A	N/A	N/A	3) Earthing & Bonding to be fitted unto ducting
			HVAC Ventilation System	N/A	N/A	N/A	N/A	4) Ducting, vents & filters to be cleaned, remove residue
			HVAC Ventilation System	N/A	N/A	N/A	N/A	5) Wall entries to be sealed off
42	Matimba	None	Extraction fan motor 1	N/A	N/A	N/A	J36540/2	Not rated for location used
43	Matimba	None	Extraction fan motor 2	N/A	N/A	N/A	J36540/1	Not rated for location used

7.20.3 Unit 1 Battery Room Fault list

Item Nr.on Detail List	Equipment Description	Fault Description	QTY	Rectification Action Required
1-24	Light Fittings - Nordland	Incorrect glands and cable use/ Incorrect stoppers used/ no protection on lights	24	Install SWA cable, appropriate glands and junction boxes/ Replace lights
25	IR³ Flames Detector	Incorrect equipment for area/ no Ex rated inspection box or spraque used	1	Replace with Ex rated gas detector/ Install Ex rated junction box/ Remove spraque
26	Entrance door	Door is damaged and does not seal properly/ Door lock struggle to open/ Fire barrier damaged	1	Replace door/ Seal off all openings in walls
36	Battery Room	Demarcation Boards	2	Install approved Demarcation Boards
37	Battery Room	Wire Ways and Trunking	2	Properly seal off wire ways and trunking
38	Battery Room	Fire Extingushers	2	No Fire Extinguishers available
39	Battery Room	Hydrogen Detection	2	No Hydrogen Detection Visible
40	Battery Room	Maintenance Cabinet	1	Fit with Thermometer / Gloves / Jug / Funnel / Eye wash / Apron
41	Battery Room	HVAC Ventilation System	1	Do maintenance and bonding on equipment
42-43	Extraction fan motors	Not rated for location used	2	Replace motors with Ex rated equipment

7.20.4 Detailed Material List for upgrade

ITEM	EQUIPMENT DETAIL	QTY	Ex Rating
1	LED Light fitting 40 Watt Double tube,	26	Ex d IIC T1 - T6
2	Cable Gland, SWA	132	Ex d IIC T1 - T6
3	Stoppers/ Blanking plugs	30	Ex d IIC T1 - T6
4	SWA 2.5mm2 3core	330	SABS Approved
5	Hydrogen Detector system complete	1	Eex ia IIC T6
6	Hydrogen Detection Sensors	5	Eex ia IIC T4
7	Fire Break glass Unit	1	Eex ia IIC T4
8	Fire Extinguisher - 9 Kg Power Type	2	
9	Stock Maintenance Equipment Cabinet with Thermometer / Gloves / Jug / Funnel / Eye wash / Apron	1	
10	Demarcation Boards	2	
11	4mm earth/ bonding cables	250	
12	CCG Junction Box with Terminals 2xL 2xN and Earth, with barriers between L/N/E	26	Ex e IIC T1-T6
13	1.5kW 630m 26 3Phase Motor 1440RPM	2	Ex n IIC T1-T6

7.21 SCOPE FOR UNIT 2 BATTERY ROOM – ZONE 2

7.21.1 Unit 2 Battery Room Detailed list

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
1	Matimba	Unit 2 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
2	Matimba	Unit 2 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
3	Matimba	Unit 2 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
4	Matimba	Unit 2 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
5	Matimba	Unit 2 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
6	Matimba	Unit 2 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
7	Matimba	Unit 2 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
8	Matimba	Unit 2 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
9	Matimba	Unit 2 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
10	Matimba	Unit 2 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	Incorrect glands and cable use/ Incorrect stoppers used/ no protection on lights
11	Matimba	Unit 2 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
12	Matimba	Unit 2 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
13	Matimba	Unit 2 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
14	Matimba	Unit 2 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
15	Matimba	Unit 2 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
16	Matimba	Unit 2 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
17	Matimba	Unit 2 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
18	Matimba	Unit 2 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
19	Matimba	Unit 2 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
20	Matimba	Unit 2 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	

7.21.2 Unit 2 Battery Room Detailed list

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
21	Matimba	Unit 2 Battery Room	IR³ Flames Detector	N/A	BAS02ATEX1001	EX ia 11C T4	18078	Sprague tube not rated for area/ inspection box not rated for area/ incorrect equipment type for area
22	Matimba	Unit 2 Battery Room	Entrance door	N/A	N/A	N/A	N/A	Door lock struggle to open/ Fire barrier damaged
23	Matimba	Unit 2 Battery Room	Battery Bank	2 OBTA30	N/A	N/A	N/A	108 x Chloride YCP13 2v 161Ah
24	Matimba	Unit 2 Battery Room	Battery Bank	2 OBTA 10	N/A	N/A	N/A	104 x Chloride YHP13 2v 643Ah
25	Matimba	Unit 2 Battery Room	Battery Bank	2 OBTA 40	N/A	N/A	N/A	108 x Chloride YCP13 2v 161Ah
26	Matimba	Unit 2 Battery Room	Battery Bank	2 OBTD 40	N/A	N/A	N/A	12 x Chloride YCP13 2v 161Ah
27	Matimba	Unit 2 Battery Room	Battery Bank	2 OBTD 20	N/A	N/A	N/A	12 x Chloride YCP13 2v 161Ah
28	Matimba	Unit 2 Battery Room	Battery Bank	2 OBTD 30	N/A	N/A	N/A	13 x Chloride YHP41 2v 2144AH
29	Matimba	Unit 2 Battery Room	Battery Bank	2 OBTD 10	N/A	N/A	N/A	13 x Chloride YHP41 2v 2144AH
30	Matimba	Unit 2 Battery Room	Demarcation Boards	N/A	N/A	N/A	N	No demarcation boards available
31	Matimba	Unit 2 Battery Room	Wire Ways and Trunking	N/A	N/A	N/A	N/A	Sealing of conduit/wire way runs into safe area
32	Matimba	Unit 2 Battery Room	Fire Extingushers	N/A	N/A	N/A	N/A	No Fire Extinguishers available
33	Matimba	Unit 2 Battery Room	Hydrogen Detection	N/A	N/A	N/A	N/A	No Hydrogen Detection Visible
34	Matimba	Unit 2 Battery Room	Maintenance Cabinet	N/A	N/A	N/A	N/A	Fit with Thermometer / Gloves / Jug / Funnel / Eye wash / Apron
35	Matimba	None	HVAC Ventilation System	N/A	N/A	N/A	N/A	1) Bonding of equipment in safe area
			HVAC Ventilation System	N/A	N/A	N/A	N/A	2) Area to be cleaned and maintained
			HVAC Ventilation System	N/A	N/A	N/A	N/A	3) Earthing & Bonding to be fitted unto ducting
			HVAC Ventilation System	N/A	N/A	N/A	N/A	4) Ducting, vents & filters to be cleaned, remove residue
			HVAC Ventilation System	N/A	N/A	N/A	N/A	5) Wall entries to be sealed off
36	Matimba	None	Extraction fan motor 1	N/A	N/A	N/A	J36542/2	Not rated for location used
37	Matimba	None	Extraction fan motor 2	N/A	N/A	N/A	J36542/1	Not rated for location used

7.21.3 Unit 2 Battery Room Fault list

Item Nr.on Detail List	Equipment Description	Fault Description	QTY	Rectification Action Required
1-20	Light Fittings - Nordland	Incorrect glands and cable use/ Incorrect stoppers used/ no protection on lights	20	Install SWA cable, appropriate glands and junction boxes/ Replace lights
21	IR³ Flames Detector	Incorrect equipment for area/ no Ex rated inspection box or spraque used	1	Replace with Ex rated gas detector/ Install Ex rated junction box/ Remove spraque
22	Entrance door	Door lock struggle to open/ Fire barrier damaged	1	Replace door lock/ Seal off all openings in walls
30	Battery Room	Demarcation Boards	2	Install approved Demarcation Boards
31	Battery Room	Wire Ways and Trunking	2	Properly seal off wire ways and trunking
32	Battery Room	Fire Extingushers	2	No Fire Extinguishers available
33	Battery Room	Hydrogen Detection	2	No Hydrogen Detection Visible
34	Battery Room	Maintenance Cabinet	1	Fit with Thermometer / Gloves / Jug / Funnel / Eye wash / Apron
35	Battery Room	HVAC Ventilation System	1	Do maintenance and bonding on equipment
36-37	Extraction fan motors	Not rated for location used	2	Replace motors with Ex rated equipment

7.21.4 Detailed Material List for upgrade

ITEM	EQUIPMENT DETAIL	QTY	Ex Rating
1	LED Light fitting 40 Watt Double tube,	22	Ex d IIC T1 - T6
2	Cable Gland, SWA	114	Ex d IIC T1 - T6
3	Stoppers/ Blanking plugs	30	Ex d IIC T1 - T6
4	SWA 2.5mm2 3core	330	SABS Approved
5	Hydrogen Detector system complete	1	Eex ia IIC T6
6	Hydrogen Detection Sensors	5	Eex ia IIC T4
7	Fire Break glass Unit	1	Eex ia IIC T4
8	Fire Extinguisher - 9 Kg Power Type	2	
9	Stock Maintenance Equipment Cabinet with Thermometer / Gloves / Jug / Funnel / Eye wash / Apron	1	
10	Demarcation Boards	2	
11	4mm earth/ bonding cables	250	
12	CCG Junction Box with Terminals 2xL 2xN and Earth, with barriers between L/N/E	22	Ex e IIC T1-T6
13	1.5kW 630m 32 3Phase Motor 1440RPM	2	Ex n IIC T1-T6

7.22 SCOPE FOR UNIT 3 BATTERY ROOM – ZONE 2

7.22.1 Unit 3 Battery Room Detailed list

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
1	Matimba	Unit 3 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
2	Matimba	Unit 3 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
3	Matimba	Unit 3 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
4	Matimba	Unit 3 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
5	Matimba	Unit 3 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
6	Matimba	Unit 3 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
7	Matimba	Unit 3 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
8	Matimba	Unit 3 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
9	Matimba	Unit 3 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
10	Matimba	Unit 3 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	Incorrect glands and cable use/ Incorrect stoppers used/ no protection on lights
11	Matimba	Unit 3 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
12	Matimba	Unit 3 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
13	Matimba	Unit 3 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
14	Matimba	Unit 3 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
15	Matimba	Unit 3 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
16	Matimba	Unit 3 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
17	Matimba	Unit 3 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
18	Matimba	Unit 3 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
19	Matimba	Unit 3 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
20	Matimba	Unit 3 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	

7.22.2 Unit 3 Battery Room Detailed list (continued)

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
21	Matimba	Unit 3 Battery Room	IR³ Flames Detector	N/A	BAS02ATEX1001	EX ia IIC T4	17201	Sprague tube not rated for area/ inspection box not rated for area/ incorrect equipment type for area
22	Matimba	Unit 3 Battery Room	Entrance door	N/A	N/A	N/A	N/A	Door lock struggle to open/ Fire barrier damaged
23	Matimba	Unit 3 Battery Room	Battery Bank	3 OBTA30	N/A	N/A	N/A	108 x Chloride YCP13 2v 161Ah
24	Matimba	Unit 3 Battery Room	Battery Bank	3 OBTA 10	N/A	N/A	N/A	104 x Chloride YHP13 2v 643Ah
25	Matimba	Unit 3 Battery Room	Battery Bank	3 OBTA 40	N/A	N/A	N/A	108 x Chloride YCP13 2v 161Ah
26	Matimba	Unit 3 Battery Room	Battery Bank	3 OBTD 40	N/A	N/A	N/A	12 x Chloride YCP13 2v 161Ah
27	Matimba	Unit 3 Battery Room	Battery Bank	3 OBTD 20	N/A	N/A	N/A	12 x Chloride YCP13 2v 161Ah
28	Matimba	Unit 3 Battery Room	Battery Bank	3 OBTD 30	N/A	N/A	N/A	13 x Chloride YHP41 2v 2144AH
29	Matimba	Unit 3 Battery Room	Battery Bank	3 OBTD 10	N/A	N/A	N/A	13 x Chloride YHP41 2v 2144AH
30	Matimba	Unit 3 Battery Room	Demarcation Boards	N/A	N/A	N/A	N	No demarcation boards available
31	Matimba	Unit 3 Battery Room	Wire Ways and Trunking	N/A	N/A	N/A	N/A	Sealing of conduit/wire way runs into safe area
32	Matimba	Unit 3 Battery Room	Fire Extingushers	N/A	N/A	N/A	N/A	No Fire Extinguishers available
33	Matimba	Unit 3 Battery Room	Hydrogen Detection	N/A	N/A	N/A	N/A	No Hydrogen Detection Visible
34	Matimba	Unit 3 Battery Room	Maintenance Cabinet	N/A	N/A	N/A	N/A	Fit with Thermometer / Gloves / Jug / Funnel / Eye wash / Apron
35	Matimba	None	HVAC Ventilation System	N/A	N/A	N/A	N/A	1) Bonding of equipment in safe area
			HVAC Ventilation System	N/A	N/A	N/A	N/A	2) Area to be cleaned and maintained
			HVAC Ventilation System	N/A	N/A	N/A	N/A	3) Earthing & Bonding to be fitted unto ducting
			HVAC Ventilation System	N/A	N/A	N/A	N/A	4) Ducting, vents & filters to be cleaned, remove residue
			HVAC Ventilation System	N/A	N/A	N/A	N/A	5) Wall entries to be sealed off
36	Matimba	None	Extraction fan motor 1	N/A	N/A	N/A	J75701/1	Not rated for location used
37	Matimba	None	Extraction fan motor 2	N/A	N/A	N/A	J44378/2	Not rated for location used

7.22.3 Unit 3 Battery Room Fault list

Unit 3 Battery Room - Zone 2				
Item Nr.on Detail List	**Equipment Description**	**Fault Description**	**QTY**	**Rectification Action Required**
1-20	Light Fittings - Nordland	Incorrect glands and cable use/ Incorrect stoppers used/ no protection on lights	20	Install SWA cable, appropriate glands and junction boxes/ Replace lights
21	IR³ Flames Detector	Incorrect equioment for area/ no Ex rated inspection box or spraque used	1	Replace with Ex rated gas detector/ Install Ex rated junction box/ Remove spraque
22	Entrance door	Door lock struggle to open/ Fire barrier damaged	1	Replace door locks/ Seal off all openings in walls
23-29	Battery Banks	Poor maintenance	7	Do monthly inspections on equipment/ Install missing parts
30	Battery Room	Demarcation Boards	2	Install approved Demarcation Boards
31	Battery Room	Wire Ways and Trunking	2	Properly seal off wire ways and trunking
32	Battery Room	Fire Extingushers	2	No Fire Extinguishers available
33	Battery Room	Hydrogen Detection	2	No Hydrogen Detection Visible
34	Battery Room	Maintenance Cabinet	1	Fit with Thermometer / Gloves / Jug / Funnel / Eye wash / Apron
35	Battery Room	HVAC Ventilation System	1	Do maintenance and bonding on equipment
36-37	Extraction fan motors	Not rated for location used	2	Replace motors with Ex rated equipment

7.22.4 Detailed Material List for upgrade

ITEM	EQUIPMENT DETAIL	QTY	Ex Rating
1	LED Light fitting 40 Watt Double tube,	22	Ex d IIC T1 - T6
2	Cable Gland, SWA	112	Ex d IIC T1 - T6
3	Stoppers/ Blanking plugs	30	Ex d IIC T1 - T6
4	SWA 2.5mm2 3core	330	SABS Approved
5	Hydrogen Detector system complete	1	Eex ia IIC T6
6	Hydrogen Detection Sensors	5	Eex ia IIC T4
7	Fire Break glass Unit	1	Eex ia IIC T4
8	Fire Extinguisher - 9 Kg Power Type	2	
9	Stock Maintenance Equipment Cabinet with Thermometer / Gloves / Jug / Funnel / Eye wash / Apron	1	
10	Demarcation Boards	2	
11	4mm earth/ bonding cables	250	
12	CCG Junction Box with Terminals 2xL 2xN and Earth, with barriers between L/N/E	20	Ex e IIC T1-T6
13	0.55kW 500A-1/1 3Phase Motor 1440RPM	2	Ex n IIC T1-T6
14	Miscellanies (Cable Straps / Lugs / Insulation Tape / Stanley Knife Blades / Conduit / Wall Plugs / Saddles)	As Per Site	

7.23 SCOPE FOR UNIT 4 BATTERY ROOM – ZONE 2

7.23.1 Unit 4 Battery Room Detailed list

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
1	Matimba	Unit 4 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
2	Matimba	Unit 4 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
3	Matimba	Unit 4 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
4	Matimba	Unit 4 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
5	Matimba	Unit 4 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
6	Matimba	Unit 4 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
7	Matimba	Unit 4 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
8	Matimba	Unit 4 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
9	Matimba	Unit 4 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	Incorrect glands and cable use/ Incorrect stoppers used/ no protection on lights
10	Matimba	Unit 4 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
11	Matimba	Unit 4 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
12	Matimba	Unit 4 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
13	Matimba	Unit 4 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
14	Matimba	Unit 4 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
15	Matimba	Unit 4 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
16	Matimba	Unit 4 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
17	Matimba	Unit 4 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	

7.23.2 Unit 4 Battery Room Detailed list (Continued)

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
18	Matimba	Unit 4 Battery Room	IR³ Flames Detector	N/A	BAS02ATEX1001	EX ia IIC T4	16251	Sprague tube not rated for area/ inspection box not rated for area/ incorrect equipment type for area
19	Matimba	Unit 4 Battery Room	Entrance door	N/A	N/A	N/A	N/A	Door lock struggle to open/ Fire barrier damaged
20	Matimba	Unit 4 Battery Room	Battery Bank	4 OBTA30	N/A	N/A	N/A	108 x Chloride YCP13 2v 161Ah
21	Matimba	Unit 4 Battery Room	Battery Bank	4 OBTA 10	N/A	N/A	N/A	104 x Chloride YHP13 2v 643Ah
22	Matimba	Unit 4 Battery Room	Battery Bank	4 OBTA 40	N/A	N/A	N/A	108 x Chloride YCP13 2v 161Ah
23	Matimba	Unit 4 Battery Room	Battery Bank	4 OBTD 40	N/A	N/A	N/A	12 x Chloride YCP13 2v 161Ah
24	Matimba	Unit 4 Battery Room	Battery Bank	4 OBTD 20	N/A	N/A	N/A	12 x Chloride YCP13 2v 161Ah
25	Matimba	Unit 4 Battery Room	Battery Bank	4 OBTD 30	N/A	N/A	N/A	13 x Chloride YHP41 2v 2144AH
26	Matimba	Unit 4 Battery Room	Battery Bank	4 OBTD 10	N/A	N/A	N/A	13 x Chloride YHP41 2v 2144AH
27	Matimba	Unit 4 Battery Room	Demarcation Boards	N/A	N/A	N/A	N	No demarcation boards available
28	Matimba	Unit 4 Battery Room	Wire Ways and Trunking	N/A	N/A	N/A	N/A	Sealing of conduit/wire way runs into safe area
29	Matimba	Unit 4 Battery Room	Fire Extingushers	N/A	N/A	N/A	N/A	No Fire Extinguishers available
30	Matimba	Unit 4 Battery Room	Hydrogen Detection	N/A	N/A	N/A	N/A	No Hydrogen Detection Visible
31	Matimba	Unit 4 Battery Room	Maintenance Cabinet	N/A	N/A	N/A	N/A	Fit with Thermometer / Gloves / Jug / Funnel / Eye wash / Apron
32	Matimba	None	HVAC Ventilation System	N/A	N/A	N/A	N/A	1) Bonding of equipment in safe area
			HVAC Ventilation System	N/A	N/A	N/A	N/A	2) Area to be cleaned and maintained
			HVAC Ventilation System	N/A	N/A	N/A	N/A	3) Earthing & Bonding to be fitted unto ducting
			HVAC Ventilation System	N/A	N/A	N/A	N/A	4) Ducting, vents & filters to be cleaned, remove residue
			HVAC Ventilation System	N/A	N/A	N/A	N/A	5) Wall entries to be sealed off
33	Matimba	None	Extraction fan motor 1	N/A	N/A	N/A	J44394/2	Not rated for location used
34	Matimba	None	Extraction fan motor 2	N/A	N/A	N/A	J44394/1	Not rated for location used

7.23.3 Unit 4 Battery Room Fault list

Unit 4 Battery Room - Zone 2				
Item Nr.on Detail List	**Equipment Description**	**Fault Description**	**QTY**	**Rectification Action Required**
1-17	Light Fittings - Nordland	Incorrect glands and cable use/ Incorrect stoppers used/ no protection on lights	17	Install SWA cable, appropriate glands and junction boxes/ Replace lights
18	IR³ Flames Detector	Incorrect equioment for area/ no Ex rated inspection box or spraque used	1	Replace with Ex rated gas detector/ Install Ex rated junction box/ Remove spraque
19	Entrance door	Door lock struggle to open/ Fire barrier damaged	1	Replace door lock/ Seal off all openings in walls
20-26	Battery Banks	Poor maintenance	7	Do monthly inspections on equipment/ Install missing parts
27	Battery Room	Demarcation Boards	2	Install approved Demarcation Boards
28	Battery Room	Wire Ways and Trunking	2	Properly seal off wire ways and trunking
29	Battery Room	Fire Extingushers	2	No Fire Extinguishers available
30	Battery Room	Hydrogen Detection	2	No Hydrogen Detection Visible
31	Battery Room	Maintenance Cabinet	1	Fit with Thermometer / Gloves / Jug / Funnel / Eye wash / Apron
32	Battery Room	HVAC Ventilation System	1	Do maintenance and bonding on equipment
33-34	Extraction fan motors	Not rated for location used	2	Replace motors with Ex rated equipment

7.23.4 Detailed Material List for upgrade

ITEM	EQUIPMENT DETAIL	QTY	Ex Rating
1	LED Light fitting 40 Watt Double tube,	22	Ex d IIC T1 - T6
2	Cable Gland, SWA	114	Ex d IIC T1 - T6
3	Stoppers/ Blanking plugs	30	Ex d IIC T1 - T6
4	SWA 2.5mm2 3core	330	SABS Approved
5	Hydrogen Detector system complete	1	Eex ia IIC T6
6	Hydrogen Detection Sensors	5	Eex ia IIC T4
7	Fire Break glass Unit	1	Eex ia IIC T4
8	Fire Extinguisher - 9 Kg Power Type	2	
9	Stock Maintenance Equipment Cabinet with Thermometer / Gloves / Jug / Funnel / Eye wash / Apron	1	
10	Demarcation Boards	2	
11	4mm earth/ bonding cables	250	
12	CCG Junction Box with Terminals 2xL 2xN and Earth, with barriers between L/N/E	22	Ex e IIC T1-T6
13	1.5kW 630m 32 3Phase Motor 1440RPM	2	Ex n IIC T1-T6

7.24 SCOPE FOR UNIT 5 BATTERY ROOM – ZONE 2

7.24.1 Unit 5 Battery Room Detailed list

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
1	Matimba	Unit 5 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
2	Matimba	Unit 5 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
3	Matimba	Unit 5 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
4	Matimba	Unit 5 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
5	Matimba	Unit 5 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
6	Matimba	Unit 5 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
7	Matimba	Unit 5 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
8	Matimba	Unit 5 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
9	Matimba	Unit 5 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	Incorrect glands and cable use/ Incorrect stoppers used/ no protection on lights
10	Matimba	Unit 5 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
11	Matimba	Unit 5 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
12	Matimba	Unit 5 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
13	Matimba	Unit 5 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
14	Matimba	Unit 5 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
15	Matimba	Unit 5 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
16	Matimba	Unit 5 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
17	Matimba	Unit 5 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	

7.24.2 Unit 5 Battery Room Detailed list

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
18	Matimba	Unit 5 Battery Room	IR³ Flames Detector	N/A	BAS02ATEX1001	EX ia IIC T4	18072	Sprague tube not rated for area/ inspection box not rated for area/ incorrect equipment type for area
19	Matimba	Unit 5 Battery Room	Entrance door	N/A	N/A	N/A	N/A	Door is damaged and does not seal properly/ Door lock struggle to open/ Fire barrier damaged
20	Matimba	Unit 5 Battery Room	Battery Bank	5 OBTA30	N/A	N/A	N/A	108 x Chloride YCP13 2v 161Ah
21	Matimba	Unit 5 Battery Room	Battery Bank	5 OBTA 10	N/A	N/A	N/A	104 x Chloride YHP13 2v 643Ah
22	Matimba	Unit 5 Battery Room	Battery Bank	5 OBTA 40	N/A	N/A	N/A	108 x Chloride YCP13 2v 161Ah
23	Matimba	Unit 5 Battery Room	Battery Bank	5 OBTD 40	N/A	N/A	N/A	12 x Chloride YCP13 2v 161Ah
24	Matimba	Unit 5 Battery Room	Battery Bank	5 OBTD 20	N/A	N/A	N/A	12 x Chloride YCP13 2v 161Ah
25	Matimba	Unit 5 Battery Room	Battery Bank	5 OBTD 30	N/A	N/A	N/A	13 x Chloride YHP41 2v 2144AH
26	Matimba	Unit 5 Battery Room	Battery Bank	5 OBTD 10	N/A	N/A	N/A	13 x Chloride YHP41 2v 2144AH
27	Matimba	Unit 5 Battery Room	Demarcation Boards	N/A	N/A	N/A	N	No demarcation boards available
28	Matimba	Unit 5 Battery Room	Wire Ways and Trunking	N/A	N/A	N/A	N/A	Sealing of conduit/wire way runs into safe area
29	Matimba	Unit 5 Battery Room	Fire Extingushers	N/A	N/A	N/A	N/A	No Fire Extinguishers available
30	Matimba	Unit 5 Battery Room	Hydrogen Detection	N/A	N/A	N/A	N/A	No Hydrogen Detection Visible
31	Matimba	Unit 5 Battery Room	Maintenance Cabinet	N/A	N/A	N/A	N/A	Fit with Thermometer / Gloves / Jug / Funnel / Eye wash / Apron
32	Matimba	None	HVAC Ventilation System	N/A	N/A	N/A	N/A	1) Bonding of equipment in safe area
			HVAC Ventilation System	N/A	N/A	N/A	N/A	2) Area to be cleaned and maintained
			HVAC Ventilation System	N/A	N/A	N/A	N/A	3) Earthing & Bonding to be fitted unto ducting
			HVAC Ventilation System	N/A	N/A	N/A	N/A	4) Ducting, vents & filters to be cleaned, remove residue
			HVAC Ventilation System	N/A	N/A	N/A	N/A	5) Wall entries to be sealed off
33	Matimba	None	Extraction fan motor 1	N/A	N/A	N/A	J49423/1	Not rated for location used
34	Matimba	None	Extraction fan motor 2	N/A	N/A	N/A	J49423/2	Not rated for location used

7.24.3 Unit 5 Battery Room Fault list

Item Nr.on Detail List	Equipment Description	Fault Description	QTY	Rectification Action Required
1-17	Light Fittings - Nordland	Incorrect glands and cable use/ Incorrect stoppers used/ no protection on lights	17	Install SWA cable, appropriate glands and junction boxes/ Replace lights
18	IR³ Flames Detector	Incorrect equipment for area/ no Ex rated inspection box or spraque used	1	Replace with Ex rated gas detector/ Install Ex rated junction box/ Remove spraque
19	Entrance door	Door lock struggle to open/ Fire barrier damaged	1	Replace door lock/ Seal off all openings in walls
27	Battery Room	Demarcation Boards	2	Install approved Demarcation Boards
28	Battery Room	Wire Ways and Trunking	2	Properly seal off wire ways and trunking
29	Battery Room	Fire Extingushers	2	No Fire Extinguishers available
30	Battery Room	Hydrogen Detection	2	No Hydrogen Detection Visible
31	Battery Room	Maintenance Cabinet	1	Fit with Thermometer / Gloves / Jug / Funnel / Eye wash / Apron
32	Battery Room	HVAC Ventilation System	1	Do maintenance and bonding on equipment
33-34	Extraction fan motors	Not rated for location used	2	Replace motors with Ex rated equipment

7.24.4 Detailed Material List for upgrade

ITEM	EQUIPMENT DETAIL	QTY	Ex Rating
1	LED Light fitting 40 Watt Double tube,	19	Ex d IIC T1 - T6
2	Cable Gland, SWA	97	Ex d IIC T1 - T6
3	Stoppers/ Blanking plugs	20	Ex d IIC T1 - T6
4	SWA 2.5mm2 3core	330	SABS Approved
5	Hydrogen Detector system complete	1	Eex ia IIC T6
6	Hydrogen Detection Sensors	5	Eex ia IIC T4
7	Fire Break glass Unit	1	Eex ia IIC T4
8	Fire Extinguisher - 9 Kg Power Type	2	
9	Stock Maintenance Equipment Cabinet with Thermometer / Gloves / Jug / Funnel / Eye wash / Apron	1	
10	Demarcation Boards	2	
11	4mm earth/ bonding cables	250	
12	CCG Junction Box with Terminals 2xL 2xN and Earth, with barriers between L/N/E	19	Ex e IIC T1-T6
13	0.75kW 650-20.D.8 3Phase Motor 1440RPM	2	Ex n IIC T1-T6

7.25 SCOPE FOR UNIT 6 BATTERY ROOM – ZONE 2

7.25.1 Unit 6 Battery Room Detailed list

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
1	Matimba	Unit 6 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
2	Matimba	Unit 6 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
3	Matimba	Unit 6 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
4	Matimba	Unit 6 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
5	Matimba	Unit 6 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
6	Matimba	Unit 6 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
7	Matimba	Unit 6 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
8	Matimba	Unit 6 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
9	Matimba	Unit 6 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	Incorrect glands and cable use/ Incorrect stoppers used/ no protection on lights
10	Matimba	Unit 6 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
11	Matimba	Unit 6 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
12	Matimba	Unit 6 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
13	Matimba	Unit 6 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
14	Matimba	Unit 6 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
15	Matimba	Unit 6 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
16	Matimba	Unit 6 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	
17	Matimba	Unit 6 Battery Room	Light Fittings - Nordland	N/A	V 693	EX e T1-T4 Class 1 DIV	Not visible	

7.25.2 Unit 6 Battery Room Detailed list (continued)

ID	Hazardous Plant	Hazardous area	Description	KKS Number	IA	Ex Rating	Serial No	Comments
18	Matimba	Unit 6 Battery Room	IR³ Flames Detector	N/A	BAS02ATEX1001	EX ia IIC T4	18078	Sprague tube not rated for area/ inspection box not rated for area/ incorrect equipment type for area
19	Matimba	Unit 6 Battery Room	Entrance door	N/A	N/A	N/A	N/A	Door is damaged and does not seal properly/ Door lock struggle to open/ Fire barrier damaged
20	Matimba	None	Main Supply DB Board	66 BMC 01	N/A	N/A	N/A	Conductor exposed from wire way
21	Matimba	Unit 6 Battery Room	Battery Bank	6 OBTA30	N/A	N/A	N/A	108 x Chloride YCP13 2v 161Ah
22	Matimba	Unit 6 Battery Room	Battery Bank	6 OBTA 10	N/A	N/A	N/A	104 x Chloride YHP13 2v 643Ah
23	Matimba	Unit 6 Battery Room	Battery Bank	6 OBTA 40	N/A	N/A	N/A	108 x Chloride YCP13 2v 161Ah
24	Matimba	Unit 6 Battery Room	Battery Bank	6 OBTD 40	N/A	N/A	N/A	12 x Chloride YCP13 2v 161Ah
25	Matimba	Unit 6 Battery Room	Battery Bank	6 OBTD 20	N/A	N/A	N/A	12 x Chloride YCP13 2v 161Ah
26	Matimba	Unit 6 Battery Room	Battery Bank	6 OBTD 30	N/A	N/A	N/A	13 x Chloride YHP41 2v 2144AH
27	Matimba	Unit 6 Battery Room	Battery Bank	6 OBTD 10	N/A	N/A	N/A	13 x Chloride YHP41 2v 2144AH
28	Matimba	Unit 6 Battery Room	Demarcation Boards	N/A	N/A	N/A	N/A	No demarcation boards available
29	Matimba	Unit 6 Battery Room	Wire Ways and Trunking	N/A	N/A	N/A	N/A	Sealing of conduit/wire way runs into safe area
30	Matimba	Unit 6 Battery Room	Fire Extingushers	N/A	N/A	N/A	N/A	No Fire Extinguishers available
31	Matimba	Unit 6 Battery Room	Hydrogen Detection	N/A	N/A	N/A	N/A	No Hydrogen Detection Visible
32	Matimba	Unit 6 Battery Room	Maintenance Cabinet	N/A	N/A	N/A	N/A	Fit with Thermometer / Gloves / Jug / Funnel / Eye wash / Apron
33	Matimba	None	HVAC Ventilation System	N/A	N/A	N/A	N/A	1) Bonding of equipment in safe area
			HVAC Ventilation System	N/A	N/A	N/A	N/A	2) Area to be cleaned and maintained
			HVAC Ventilation System	N/A	N/A	N/A	N/A	3) Earthing & Bonding to be fitted unto ducting
			HVAC Ventilation System	N/A	N/A	N/A	N/A	4) Ducting, vents & filters to be cleaned, remove residue
			HVAC Ventilation System	N/A	N/A	N/A	N/A	5) Wall entries to be sealed off
34	Matimba	None	Extraction fan motor 1	N/A	N/A	N/A	J49423/1	Not rated for location used
35	Matimba	None	Extraction fan motor 2	N/A	N/A	N/A	J49423/2	Not rated for location used

7.25.3 Unit 6 Battery Room Fault list

Item Nr.on Detail List	Equipment Description	Fault Description	QTY	Rectification Action Required
1-17	Light Fittings - Nordland	Incorrect glands and cable use/ Incorrect stoppers used/ no protection on lights	17	Install SWA cable, appropriate glands and junction boxes/ Replace lights
18	IR³ Flames Detector	Incorrect equipment for area/ no Ex rated inspection box or spraque used	1	Replace with Ex rated gas detector/ Install Ex rated junction box/ Remove spraque
19	Entrance door	Door is damaged and does not seal properly/ Door lock struggle to open/ Fire barrier damaged	1	Replace door/ Seal off all openings in walls
20	Main Supply DB Board	Conductor exposed from wire way	1	Cover open wire way
28	Battery Room	Demarcation Boards	1	Install approved Demarcation Boards
29	Battery Room	Wire Ways and Trunking	1	Properly seal off wire ways and trunking
30	Battery Room	Fire Extingushers	2	Install fire extingushers at entrance door
31	Battery Room	Hydrogen Detection	1	Install a Hydrogen detection System
32	Battery Room	Maintenance Cabinet	1	Fit with Thermometer / Gloves / Jug / Funnel / Eye wash / Apron
33	Battery Room	HVAC Ventilation System	1	Do maintenance and bonding on equipment
34-35	Extraction fan motors	Not rated for location used	2	Replace motors with Ex rated equipment

7.25.4 Detailed Material List for upgrade

ITEM	EQUIPMENT DETAIL	QTY	Ex Rating
1	LED Light fitting 40 Watt Double tube,	19	Ex d IIC T1 - T6
2	Cable Gland, SWA	97	Ex d IIC T1 - T6
3	Stoppers/ Blanking plugs	20	Ex d IIC T1 - T6
4	SWA 2.5mm2 3core	330	SABS Approved
5	Hydrogen Detector system complete	1	Eex ia IIC T6
6	Hydrogen Detection Sensors	5	Eex ia IIC T4
7	Fire Break glass Unit	1	Eex ia IIC T4
8	Fire Extinguisher - 9 Kg Power Type	2	
9	Stock Maintenance Equipment Cabinet with Thermometer / Gloves / Jug / Funnel / Eye wash / Apron	1	
10	Demarcation Boards	2	
11	4mm earth/ bonding cables	250	
12	CCG Junction Box with Terminals 2xL 2xN and Earth, with barriers between L/N/E	19	Ex e IIC T1-T6
13	0.75kW 650-20.D.8 3Phase Motor 1440RPM	2	Ex n IIC T1-T6