|  |
| --- |
| Eskomlogo 2002 Black |

NEC 3 Engineering & Construction Contract

|  |  |  |  |
| --- | --- | --- | --- |
| **Between** | | **ESKOM HOLDINGS SOC Ltd**  **(Reg No. 2002/015527/30)** | |
| **and** | | **The *Contractor***  **(Reg No. \_\_\_\_\_\_\_\_\_\_\_ )** | |
| **for** | | **Installation of Old Stacker to Cross 01, Link Conveyor** | |
|  | |  | |
| **Contents:** | |  | **No of pages** |
|  | | **This cover page** | **1** |
| **Part C1** | | **Agreements & Contract Data** | **18** |
| **Part C2** | | **Pricing Data** | **7** |
| **Part C3** | | **Scope of Work** | **74** |
| **Part C4** | | **Site Information** | **10** |
|  | **Total number of pages** | | **110** | |
|  | |  |  |
| **ENQUIRY No.** | |  | |
|  | |  | |
|  | |  | |
|  | |  | |

Part C1: Agreements & Contract Data

|  |  |  |
| --- | --- | --- |
| **Contents:** |  | **No of pages** |
|  | **This cover page** | **1** |
| **C1.1** | **Form of Offer and Acceptance** | **3** |
| **C1.2a** | **Contract Data provided by the *Employer*** | **12** |
| **C1.2b** | **Contract Data provided by the *Contractor*** | **2** |
|  | **Total number of pages** | **18** |

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:

**Old Stacker to Cross 01 Link Conveyor Installation at;**

**Majuba 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.

|  |  |  |
| --- | --- | --- |
| Option A | The offered total of the Prices exclusive of VAT is | **R** |
|  | Value Added Tax @ 15% is | **R** |
|  | The offered total of the amount due inclusive of VAT is[[1]](#footnote-2) | **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:** |  | | | |
| Name & signature of witness | *(Insert name and address of organisation)* |  | Date |  |
| Tenderer’s CIDB registration number (if applicable) | | CIDB Grading of 6 SO or 6ME | | |

**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* |  | | | |
| Name & signature of witness | *(Insert name and address of organisation)* |  | Date |  |

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

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

|  |  |  |
| --- | --- | --- |
| No. | Subject | Details |
| 1 |  |  |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |
| 5 |  |  |
| 6 |  |  |
| 7 |  |  |
|  |  |  |

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

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

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

C1.2 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 |  |
|  |  | **X1 Price adjustment for inflation** |
|  |  | **X2 Changes in the law** |
|  |  | **X5 Sectional Completion** |
|  |  | **X7: Delay damages** |
|  |  | **X9: Transfer of Rights** |
|  |  | **X15: Limitation of the Contractor’s liability for his design to reasonable skill and care** |
|  |  | **X16: Retention** |
|  |  | **X17: Low performance damages** |
|  |  | 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) | **S Khumalo** |
|  | Address | **Majuba Power Station** |
|  | Tel | **013 699 7030** |
|  | Fax | **N/A** |
|  | e-mail | Khumalsc@gmail.com |
|  |  |  |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 10.1 | The *Supervisor* is: (Name) | | | **Sindiswa Zuma** | | | | | |
|  | Address | | | **Majuba Power Station** | | | | | |
|  | Tel No. | | | **017 799 3242** | | | | | |
|  | Fax No. | | | **N/A** | | | | | |
|  | e-mail | | | Zumaspi@eskom.co.za | | | | | |
| 11.2(13) | The *works* are | | | **Installation of Old Stacker to Cross 01, Link Conveyor** | | | | | |
| 11.2(14) | The following matters will be included in the Risk Register | | | 1. **Force Majure** 2. **Majuba P/S EP activivation** | | | | | |
| 11.2(15) | The *boundaries of the site* are | | | **Majuba Power Station** | | | | | |
| 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 | | | **7 calender 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 | | | **17 July 2026** | | | | | |
| 30.1 | The *access dates* are: | | | **Part of the Site** | | | **Date** | | |
|  |  | | | **1** | **Old Stacker to Cross 01 Link Conveyor installation** | | **As per the Accepted Programme** | | |
|  |  | | | **2** |  | |  | | |
|  |  | | | **3** |  | |  | | |
| 31.1 | The *Contractor* is to submit a first programme for acceptance within | | | **2 weeks from the *starting date*.** | | | | | |
| 31.2 | The *starting date* is | | | **no later than 17 October 2025** | | | | | |
| The *Contractor* submits revised programmes at intervals no longer than | | **1 week**  **However, the *Employer* may request more frequent programme update submissions at any time during the works, as and when necessary, at no additional cost.** | | | | | | |
| 35.1 | The *Employer* is not willing to take over the *works* before the Completion Date. | | | **Take over for the sections of the *works* identified is in accordance with the sectional completion dates.**  **Take-over of the whole of the *works* is in accordance with the *completion date*.** | | | | | |
| **4** | **Testing and Defects** | | |  | | | | | |
| 42.2 | The *defects date* is | | | **52 weeks after Completion of each Section of the *works*.** | | | | | |
| 43.2 | The *defect correction period* is | | | **2 weeks** | | | | | |
| **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.** | | | | | |
| 51.2 | The period within which payments are made is | | | **either 30 days or 14 days** | | | | | |
| 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 months 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: | | | **Majuba 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 | | | **South African Weather Bureau** | | | | | |
|  | The *weather data* are the records of past *weather measurements* for each calendar month which were recorded at: | | | **Volksrust** | | | | | |
|  | and which are available from: | | | **the South African Weather Bureau and included in Annexure A to this Contract Data provided by the *Employer*** | | | | | |
| 60.1(13) | Assumed values for the ten year return *weather data* for each *weather measurement* for each calendar month are: | | | **As stated 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** | | |  | | | | | |
| 80.1 | These are additional *Employer’s* risks | | | **None** | | | | | |
| 84.1 | The *Contractor* provides these additional insurances: | | | **whatever the *Contractor* deems necessary.** | | | | | |
| 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*, plus the amount of the deductibles in the amount of R 500 000.00 (Five hundred thousand Rand) payable in terms of the *Employer*`s Contract ALL Risk Insurance Policy.** | | | | | |
| **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**](http://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).** | | | | | |
| 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**](http://www.ice-sa.org.za) **) or its successor body.** | | | | | |
| W1.4(2) | The *tribunal* is: | | | **arbitration.** | | | | | |
| W1.4(5) | The *arbitration procedure* is | | | **the latest edition of Rules for the Conduct of Arbitrations published by The Association of Arbitrators (Southern Africa) or its successor body.** | | | | | |
|  | The place where arbitration is to be held is | | | **Johannesburg, South Africa** | | | | | |
|  | The person or organisation who will choose an arbitrator   * if the Parties cannot agree a choice or * if the arbitration procedure does not state who selects an arbitrator, is | | | **the Chairman for the time being or his nominee of the Association of Arbitrators (Southern Africa) or its successor body.** | | | | | |
| **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.** | | | | | |
| **X5** | **Sectional Completion** | |  | | | | | | |
| X5.1 | The *completion date* for each *section* of the *works* is: | | ***Section*** | | | **Description** | | ***Completion date*** | |
|  |  | | **1** | | | **As per the Accepted Programme** | | **As per the Accepted Programme** | |
|  |  | | **2** | | |  | |  | |
|  |  | | **3** | | |  | |  | |
| **X7** | **Delay damages** | | |  | | | | | |
| X7.1 | Delay damages for Completion of the whole of the *works* are | | | **R25 000.00 per day up to a limit of R3 000 000.00** | | | | | |
|  |  | | |  | | | | | |
| **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** | | |  | | | | | |
| X16.1 | The *retention percentage* is  The *retention free amount is* | | | **10%**  **Nil** | | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **X17** | | **Low performance damages** |  | | |
| X17.1 | | The amounts for low performance damages are: | **Amount** | | **Performance level** |
|  | |  | **R 7 500.00 per day** | | *Contractor* does not submit the Safety Plan for acceptance on time as per the Accepted Programme. |
|  | |  | **R 7 500.00  per day** | | For every incident where a QCP is not submitted for acceptance by the *Contractor* on time, as per the Accepted Programme. |
|  | |  | **R 10 000.00**  **per incident** | | For every incident of non-compliance by the *Contractor* for not requesting the *Employer* to perform inspection/s for hold, witness and verification points on approved QCP’s, in addition to re-work which may result. |
|  | |  | **R 7 500.00**  **per incident** | | For every incident of the *Contractor* not submitting an updated programme as per the Works Information. |
|  | |  | **R 15 000.00**  **per incident** | | For every incident of *Contractor*’s or Subcontractor’s personnel used which are not competent (qualification or experience) as per the Works Information, in addition to the *Employer*’s defect notification for the *Contractor* to rectify within the defect correction period and/or *Employer*’s instruction to withdraw such person from the Site. |
|  | |  | **R 7 500.00**  **per incident** | | For every incident when all the completed daily diaries and attendance registers are not signed off by the *Employer* and submitted by the assessment day for assessment purposes. |
|  | |  | **R 5 000.00**  **per incident** | | For every incident when the *Contractor* does not report a safety incident within the current shift. |
| **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 request from Eskom Group Insurance** | |
| 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 R25M (Twenty five Million Rand) 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) Seven (7) 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 notcede, 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***

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”.

1. 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.

1. Tendering *Contractor* s 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.
2. 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.
3. **Further information and full details of all Eskom provided policies and procedures may be obtained from:**

**http://www.eskom.co.za/Tenders/InsurancePoliciesProcedures/Pages/EIMS\_Policies.aspx**

C1.2 Contract Data

**Part two - Data provided by the *Contractor***

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

|  |  |  |
| --- | --- | --- |
| **Clause** | **Statement** | **Data** |
| 10.1 | The *Contractor* is (Name): |  |
|  | Address |  |
|  | Tel No. |  |
|  | Fax No. |  |
| 11.2(8) | The *direct fee percentage* is | **%** |
|  | The *subcontracted fee percentage* is | **%** |
| 11.2(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**  **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  NB. *Contractor*’s data and CV’s supplied complies with the Works Information for key people listed under 3.1.1, Minimum requirements of people employed on the Site |
| 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 |  |
| 11.2(19) | The Works Information for the *Contractor’s* design is in: |  |
| 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** |
|  | This cover page | 1 |
| C2.1 | Pricing assumptions: Option A | 2 |
| C2.2 | The *activity schedule* | 4 |
|  | Total number of pages | 7 |

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*

**Notes on the Price List:**

* The Price List provided by the *Employer* below includes as much of the activities determined to be relevant for the execution of the *works* as possible to determine during planning stages. The *Contractor* (tenderer) however, remains responsible to price for the works ensuring that the Employer’s Price List is completed while adding any relevant items to the Price List which are omitted, thereby ensuring that the final Price List covers the provision of the entire scope of work.
* All other items of expense not listed in the *Employer’s* Price List is specified in detail and added in by the *Contractor* below or on a separate sheet. Any item not stated by the *Contractor* but necessary to provide the *works* is accepted as being included in the pricing and is not claimable during the course of the *works.*
* The quantities provided by the *Employer* are only estimated and the *Contractor* confirms them upon tendering.
* The *Contractor* enters quantities, rates and prices where none are shown (no rates without quantities should be entered) or corrects them, as required.
* The *Contractor* provides detailed pricing and expands on the Price List in order to show all detailed breakdowns of the prices and any additional items of expense not shown by the *Employer*.
* All prices are VAT exclusive however, VAT is claimable upon invoicing.

Pricing Data

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **NO** | **DESCRIPTION** | **UOM** | **QTY** | **PRICE** | **TOTAL** |
| 1 | 1200 Tail End with Impact Bed Support Trough Chute on top with loading hop 400 Crowned Pulley SNU526 bearings Mounted in take to tension slack belt | Sum | 1 |  |  |
| 2 | Belt Structure in 8m segments each with adjustable mounting leg 200x75mm channel braced with 76dia x 3mm tubing Standard troughing and return belt frames to bolt on. | Sum | 1 |  |  |
| 3 | JIB and drive platform 4500x4500mm with grating and hand railing 5m high support structure | Sum | 1 |  |  |
| 4 | Hood and Spoon Chute (Design and Fabrication) Fabrication of chute with liners To be supported from JIB platform | Sum | 1 |  |  |
| 5 | JIB with Drive Fabricate JIB frame with 600 dia drive pulley, diamond cut lagging SNU 532 bearings and rigid coupling to mount 400 snub pulley SNU 526 bearings | Sum | 1 |  |  |
| 6 | 55kW Power Pack Bonfig gearbox with fluid coupling and rigid coupling to bolt onto drive pulley Belt speed: 2m/s | Sum | 1 |  |  |
| 7 | Electrical Control Panel With key switch lock-out, stop, start and overload protection, E-Stops for pull wire 380V Supply with isolator | Sum | 1 |  |  |
| 8 | Belting | Sum | 1 |  |  |
| 9 | Idlers and Idler frames | Sum | 1 |  |  |
| 10 | Walkways with hand railing and cable |  |  |  |  |
|  | **Sub Total (1)** |  |  |  |  |
|  |  |  |  |  |  |
| **NO** | **DESCRIPTION** | **UOM** | **QTY** | **PRICE** | **TOTAL** |
| 11 | Fire Hydrant incl valves | Sum | 1 |  |  |
| 12 | Installation | Sum | 1 |  |  |
| 13 | Electrician | Sum | 1 |  |  |
| 14 | Transport | Sum | 1 |  |  |
| 15 | Concrete | Sum | 1 |  |  |
| 16 | Scrapers | Sum | 1 |  |  |
| 17 | Chemicals and grout | Sum | 1 |  |  |
| 18 | Studs, nuts, bolts and anchors | Sum | 1 |  |  |
| 19 | Vibrators, Bomag and Magnet Drills & Generator and DIESEL | Sum | 1 |  |  |
| 20 | Core Drilling | Sum | 1 |  |  |
| 21 | Design and Engineering Drawing ext for app | Sum | 1 |  |  |
| 22 | Civils | Sum | 1 |  |  |
| 23 | Impact Bed | Sum | 1 |  |  |
| 24 | Walkways | Sum | 1 |  |  |
|  | **Sub Total (2)** |  |  |  |  |
| 25 | CT Systems | Sum | 1 |  |  |
| 26 | CT Systems - Extra Striker Pin | Sum | 1 |  |  |
| 27 | CT Systems - Extra Pull Cable Carriers | Sum | 1 |  |  |
| 28 | Switchgear Mod - Raise & Lower | Sum | 1 |  |  |
| 29 | KKS Labeling | Sum | 1 |  |  |
| 30 | Project Management | Sum | 1 |  |  |
| 31 | Site Establishment | Sum | 1 |  |  |
| 31.1 | [12 m x 2.4 m mobile executive office block](file:///C:\Users\BarnarJH\AppData\Local\Microsoft\AppData\Local\Microsoft\AppData\Local\Microsoft\AppData\Local\Microsoft\Windows\Temporary%20Internet%20Files\Content.Outlook\A7M1W45V\Cost%20est.xlsx#RANGE!_General) | Sum | 1 |  |  |
| 31.2 | [6 m x 2.4 m mobile executive office block](file:///C:\Users\BarnarJH\AppData\Local\Microsoft\AppData\Local\Microsoft\AppData\Local\Microsoft\AppData\Local\Microsoft\Windows\Temporary%20Internet%20Files\Content.Outlook\A7M1W45V\Cost%20est.xlsx#RANGE!_General) | Sum | 1 |  |  |
| 31.3 | [12 m x 2.4 m mobile kitchen block office block](file:///C:\Users\BarnarJH\AppData\Local\Microsoft\AppData\Local\Microsoft\AppData\Local\Microsoft\AppData\Local\Microsoft\Windows\Temporary%20Internet%20Files\Content.Outlook\A7M1W45V\Cost%20est.xlsx#RANGE!_General) | Sum | 1 |  |  |
| 31.4 | [Other site establishment requirements](file:///C:\Users\BarnarJH\AppData\Local\Microsoft\AppData\Local\Microsoft\AppData\Local\Microsoft\AppData\Local\Microsoft\Windows\Temporary%20Internet%20Files\Content.Outlook\A7M1W45V\Cost%20est.xlsx#RANGE!_General) | Sum | 1 |  |  |
| 32.0 | Transportation |  |  |  |  |
| 32.1 | LDV | month | 6 |  |  |
| 32.2 | Sedan | month | 6 |  |  |
| 33.3 | Bus (10-15 seater) – No. of \_\_\_\_\_\_ Average monthly Km\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | month | 6 |  |  |
| 34.4 | Truck (by tonnage) | month | 6 |  |  |
| 35.0 | Accommodation | Day | 180 |  |  |
| 36.0 | Safety Management |  |  |  |  |
| 36.1 | Safety Officer | month | 6 |  |  |
| 36.2 | Personal Protective Equipment | Sum | 1 |  |  |
| 36.3 | Safety file and all documentation (including exit medicals) | Sum | 1 |  |  |
| 36.4 | Training of RP X 2 | Days | 90 |  |  |
| 36.5 | Training of AS X2 | Days | 30 |  |  |
| 37.0 | Quality Management |  |  |  |  |
| 37.1 | Quality Co-ordinator | month | 6 |  |  |
| 37.2 | Quality file and all documentation | Sum | 1 |  |  |
| 38 | Site De-Establishment | Sum | 1 |  |  |
|  | **Sub Total (3)** |  |  |  |  |
|  |  |  |  |  |  |
|  | TOTAL 1+ 2+3 |  |  |  |  |

Part 3: Scope of Work

|  |  |  |
| --- | --- | --- |
| **Document reference** | **Title** | **No of pages** |
|  | This cover page | 1 |
| C3.1 | *Employer’s* Works Information | 74 |
| C3.2 | *Contractor’s* Works Information | 0 |
|  | Total number of pages | 75 |

C3.1: *Employer’*sworks Information

**Table of Contents**

[1. Description of the *Works* 28](#_Toc149814635)

[1.1. Executive Overview Of Design Of Installation Of Old Stacker To Cross 01, Link Conveyor At Majuba Power Station. 28](#_Toc149814636)

[1.2. *Employer’s* Objectives and Purpose of the Works 28](#_Toc149814637)

[1.2.1. Battery Limits 29](#_Toc149814638)

[1.2.2. Mechanical Works 29](#_Toc149814639)

[1.2.3. Electrical Works 32](#_Toc149814640)

[1.2.4. Control and Instrumentation Works 33](#_Toc149814641)

[1.2.5. Documentation 34](#_Toc149814642)

[1.2.6. Site Work 34](#_Toc149814643)

[1.3. Interpretation and terminology 43](#_Toc149814644)

[1.3.1. Definitions 43](#_Toc149814645)

[1.3.2. Abbreviations 44](#_Toc149814646)

[2. Management and start-up 46](#_Toc149814647)

[2.1. Management, feedback and reporting 46](#_Toc149814648)

[2.2. Management meetings 47](#_Toc149814649)

[2.3. Documentation control 48](#_Toc149814650)

[2.3.1. General 48](#_Toc149814651)

[2.3.2. Documentation Submission with the Tender 48](#_Toc149814652)

[2.3.3. Documentation Submissions after Contract Award 50](#_Toc149814653)

[2.3.4. Documentation Submissions at Contract Completion 52](#_Toc149814654)

[2.4. Health and Safety Risk Management 53](#_Toc149814655)

[2.4.2. Eskom Life Saving Rules 54](#_Toc149814656)

[2.4.3. Reporting of Incidents 55](#_Toc149814657)

[2.4.4. Work Stoppages 55](#_Toc149814658)

[2.4.5. Vehicle and driver safety 55](#_Toc149814659)

[2.4.6. Vehicle Standard minimum specifications 55](#_Toc149814660)

[2.4.7. Hot Work 55](#_Toc149814661)

[2.4.8. Confined Spaces 55](#_Toc149814662)

[2.4.9. Working at Heights 56](#_Toc149814663)

[2.4.10. Lifting and Rigging 56](#_Toc149814664)

[2.5. Environmental constraints and management 56](#_Toc149814665)

[2.6. Quality assurance requirements 56](#_Toc149814666)

[2.6.1. Quality Control 56](#_Toc149814667)

[2.6.2. Quality Control Plans 58](#_Toc149814668)

[2.6.3. Quality Control of Rubber Lining or Corrosion Protection 58](#_Toc149814669)

[2.6.4. Supply of Genuine OEM Manufactured and Supported Parts 59](#_Toc149814670)

[2.6.5. Covering of System 60](#_Toc149814671)

[2.7. Programming constraints 60](#_Toc149814672)

[2.8. Invoicing and payment 61](#_Toc149814673)

[2.9. Contract change management 62](#_Toc149814674)

[2.10. Training workshops and technology transfer 62](#_Toc149814675)

[3. Procurement 64](#_Toc149814676)

[3.1. People 64](#_Toc149814677)

[3.1.1. Minimum requirements of people employed on the Site 64](#_Toc149814678)

[3.1.2. Supplier Development, Localisation and Initiatives (SDL&I) Requirements 66](#_Toc149814679)

[3.2. Subcontracting 69](#_Toc149814680)

[3.2.1. Preferred Subcontractors 69](#_Toc149814681)

[3.2.2. Limitations on Subcontracting 70](#_Toc149814682)

[3.2.3. Attendance of Subcontractors 70](#_Toc149814683)

[3.3. Plant and Materials 70](#_Toc149814684)

[3.3.1. Quality 70](#_Toc149814685)

[3.3.2. Plant and Materials provided “free issue” by the *Employer* 71](#_Toc149814686)

[3.3.3. *Contractor’s* Procurement of Plant and Materials 71](#_Toc149814687)

[3.3.4. Delivery to Site 71](#_Toc149814688)

[3.4. Tests and inspections before delivery 72](#_Toc149814689)

[3.4.1. General 72](#_Toc149814690)

[3.4.2. Manufacturing 73](#_Toc149814691)

[3.4.3. Factory Acceptance and Testing 73](#_Toc149814692)

[3.4.4. Inspection and Testing on Site 74](#_Toc149814693)

[4. Construction 75](#_Toc149814694)

[4.1. Temporary works, Site services & construction constraints 75](#_Toc149814695)

[4.1.1. *Employer’s* Site entry and security control, permits, and Site regulations 75](#_Toc149814696)

[4.1.2. Restrictions to access on Site, roads, walkways and barricades 76](#_Toc149814697)

[4.1.3. People restrictions on Site; hours of work, conduct and records 76](#_Toc149814698)

[4.1.4. Health and safety facilities on Site 77](#_Toc149814699)

[4.1.5. Title to material from excavation and demolition 77](#_Toc149814700)

[4.1.6. Co-operating with and obtaining acceptance of others 78](#_Toc149814701)

[4.1.7. Publicity and progress photographs 78](#_Toc149814702)

[4.1.8. *Contractor’s* Equipment (including temporary works). 78](#_Toc149814703)

[4.1.9. Equipment provided by the *Employer* 79](#_Toc149814704)

[4.1.10. Site Services and Facilities 79](#_Toc149814705)

[4.1.11. Facilities provided by the *Contractor* 82](#_Toc149814706)

[4.1.12. Control of noise, dust, water and waste 84](#_Toc149814707)

[4.2. Completion, testing, commissioning and correction of Defects 84](#_Toc149814708)

[4.2.1. Work to be done by the Completion Date 84](#_Toc149814709)

[4.2.2. Use of the *works* before Completion has been certified 85](#_Toc149814710)

[4.2.3. Commissioning 85](#_Toc149814711)

[4.2.4. Start-up procedures required to put the *works* into operation 86](#_Toc149814712)

[4.2.5. Take over procedures 87](#_Toc149814713)

[4.2.6. Access given by the *Employer* for correction of Defects 88](#_Toc149814714)

[4.2.7. Performance tests after Completion 88](#_Toc149814715)

[5. Plant and Materials Standards and Workmanship 89](#_Toc149814716)

[6. List of drawings 92](#_Toc149814717)

[6.1. Drawings issued by the *Employer* 92](#_Toc149814718)

[7. SITE INFORMATION 95](#_Toc149814719)

[7.1. Site description 95](#_Toc149814720)

[7.2. Site Geography 95](#_Toc149814721)

[7.3. Plant Access 95](#_Toc149814722)

[7.4. Road Access 95](#_Toc149814723)

[7.5. Rail Access 96](#_Toc149814724)

[7.6. Air Access 96](#_Toc149814725)

[7.7. Climate 96](#_Toc149814726)

[7.8. Barometric Pressure 96](#_Toc149814727)

[7.9. Temperature 96](#_Toc149814728)

[7.10. Precipitation 97](#_Toc149814729)

[7.10.1. Rainfall 97](#_Toc149814730)

[7.10.3. Hail 97](#_Toc149814731)

[7.10.5. Snow 97](#_Toc149814732)

[7.11. Relative humidity 97](#_Toc149814733)

[7.12. Wind Velocity 97](#_Toc149814734)

[7.13. Seismic Data 97](#_Toc149814735)

[7.14. Weather data 98](#_Toc149814736)

[8. Annexure A: *Contractor’s* Site Reticulation Layout 99](#_Toc149814737)

# Description of the *Works*

## Executive Overview Of Design Of Installation Of Old Stacker To Cross 01, Link Conveyor At Majuba Power Station.

The mixed ash handling system at Majuba Power station comprises conveyor belts that evacuates fly ash from the ash conditioning silos and coarse ash from transverse conveyors to the ash dump. These belts are ash overland conveyor belts. Ash that is conveyed by ash overland conveyors goes to the ash dump via three (3) streams; i.e, Stream 01, Stream 02 and an Emergency stream. The streams comprise conveyor belts and ash stacking equipment. The scope of this project is limited to emergency ashing facility new infrastructure

The emergency stream is situated at Transfer House E, where a radial/Old stacker is situated. This stream is used on emergency, where stream 01 and 02 are not available.

Ash at this emergency stacking area is to be taken to the ash dump using the yellow plant (Dozers, trucks and Front End loaders. Majuba Power Station has spent sizable amount of money through double ash handling happening at the Old Ash Stacker area.

This costs the station a lot of money for use of these machinery in terms of diesel, hourly rate of the machine and operators. It is therefore required that a contingency plan is devised to minimise usage of the yellow plant, thereby minimising the total expenditure of the station on this section of plant. A solution to resolve this issue is to install ash reclaiming facility on the emergency dump

The Works Information hereinafter referred to as the *Works* include but not limited to uninstallation of CSY conveyor SY3 from Komati Power Station, transportation of the conveyor from Komati Power Station to Majuba Power Station, preparation of foundations and plinths as per design (SEP to be employed); Installation at Majuba Power Station and commissioning of the conveyor belt. High level tasks include:

1. Dismantling of Komati SY3 conveyor structure, electrical and C&I components
2. Transportation of the dismantled components to Majuba Power station
3. Construction of plinths and slab
4. Reconditioning, galvanizing or approximately 80% sections of the structure and installation of conveyor structure and its ancillaries
5. Supply all new idlers, scrapers and skirtings
6. Installation of mechanical components and their ancillaries
7. Installation of electrical systems
8. Refurbishment of drivetrain
9. Installation of control systems
10. Installation of walkways and platforms
11. Testing and Commissioning
12. Supply of design information (1 X Electronic copy and 1 X Hard Copy)
13. Training to be provided on Operating, Maintenance And Engineering staff

The *Contractor* is responsible for the review and verification of the provided designs where applicable and SEP must be employed. Verification of size of the conveyor belt and distance to be done by the *Contractor*.The works listed below are not necessarily in a sequence or preference, which the *Contractor* must adhere to hence, the *Contractor* considers all requirements in preparing and submitting his own plan for review and acceptance by the *Project Manager*. It is also possible, that planning may change during the course of the works should the *Employer* deem it necessary and the *Contractor* re-aligns the programme accordingly.

## *Employer’s* Objectives and Purpose of the Works

Upon the start date, the *Contractor* studies the *Employer*’s Works Information, prepares and submits a detailed work methodology and draft Quality Control Plan (QCP) to the *Project Manager*, for each section of works, in order to obtain acceptance before each activity is started. The *Contractor* liaises with all the *Employer*’s project team such as engineers, quality controller/s, plant specialist/s etc. and requests clarification from the *Project Manager* immediately if any discrepancy or vagueness is discovered in the Works Information, which was not clarified during the tender period. The *Contractor* identifies all such discrepancies and vague areas of scope within the first twelve (12) weeks of the contract and submits them for further clarification to the *Employer* who reviews and provides decisions on those issues.

### Battery Limits

1. The Contractor is required to perform the works as stated on Section 1.1, paragraph 5&6.
2. The process design requirements that the newly installed conveyor belt must conform to the requirements as listed in Section 1.2.5
3. Mechanical battery limits for the project are House E Dump area, Old Stacker and Cross 01 conveyor belt at Majuba Power Station. At Komati, the battery limits are Komati Coal Stockyard.

### Overall Scope of Work

Project Title: Relocation of SY3 Conveyor Belt from Komati Power Station to Majuba Power Station

#### Project Description

This project involves the disassembly of SY3 at Komati Power Station, its transportation to Majuba Power Station's facility, and the subsequent installation and commissioning of the conveyor system at Majuba Power Station. The conveyor has the following specifications:

1. 1000mm belt width
2. 1000tons per hour
3. 60m conveyor length
4. Unconfirmed inclination angle

#### Project Location:

**Origin:** [Komati Power Station]

**Destination:** [Majuba Power Station]

#### Scope of Work (High Level):

#### Disassembly SY3 Conveyor Belt at Komati Power Station:

1. Carefully dismantle SY3 while preserving all components, including mechanical, electrical, and control systems.
2. Inspect and document the condition of each component during disassembly.
3. Make provision for reconditioning of 30% the structure (sandblasting, coating and galvanization).
4. Make provision for replacement of 100% of idlers
5. Make provision for replacement of drive train

#### Transportation:

1. Arrange all transport logistics
2. Securely pack and transport all disassembled components to Majuba Power Station's facility.
3. Ensure safe handling and protection of all conveyor parts during transit.
4. Securely unpack components at Majuba Power Station's facility for installation preparation

#### Installation at Majuba Power Station:

#### Civil Works

1. Prepare the foundation or support structure for the conveyor system as needed. Use similar designs as the Komati PS plinths at Majuba PS.
2. Ensure the structural integrity of the installation area. (to be verified by the Engineer)
3. Prepare the designated installation area at Majuba Power Station's facility.
4. Reassemble SY3 Conveyor belt using the disassembled components.
5. Align and position the conveyor system to meet operational requirements.

#### Mechanical Works:

1. Ensure all mechanical components are reassembled and aligned correctly.
2. Verify proper tensioning of belts, chains, or other conveyor elements.
3. All structures must be in good condition upon installation. (to be verified by the Engineer)
4. Conduct necessary adjustments to optimize conveyor performance.
5. Buy and install new gearbox and couplings

#### Electrical Works:

1. Reconnect all electrical components, including motors, sensors, and wiring.
2. Ensure that electrical connections meet safety and regulatory standards.
3. Refurbist the electric drive motor
4. Conduct electrical testing and troubleshooting as needed.
5. Buy and install new electric motor

#### Control Systems Works:

1. Reconnect and configure the control systems and protections for SY3.
2. Verify that control logic, sensors, and PLC (Programmable Logic Controller) settings are functional.
3. Allocate 30% for C&I field instruments.
4. Perform control system testing to ensure proper operation.

#### Commissioning:

1. Conduct a thorough commissioning process to ensure that SY3 operates reliably and efficiently.
2. Test all conveyor functions, including start-up, shutdown, emergency stops, and safety features.
3. Address any issues or discrepancies identified during commissioning.
4. Perform a 72hr run performance test

#### Documentation:

1. Maintain detailed records of all disassembly, transportation, installation, and commissioning activities and any alterations (if applicable) that may have been made.
2. Provide documentation on component conditions, electrical connections, control system configurations and civil designs.
3. Produce as built drawings for (Mechanical, Electrical, Civil And C&I)

#### Safety and Compliance:

1. Ensure that all work adheres to safety standards and regulations, including OHSA Permit to work systems for Eskom Power Plants.
2. Comply with all relevant electrical and mechanical codes and regulations.

#### Reporting and Communication:

1. Regularly communicate progress to project stakeholders.
2. Provide status updates and reports as required.

#### Evaluation Criteria:

The success of the project will be evaluated based on the successful transportation, installation, and commissioning of SY3 at Majuba Power Station, meeting operational requirements and safety standards.

#### Method Statement: Disassembly at Komati Power Station

#### Objective:

The objective of this method statement is to outline the safe and systematic process for the disassembly of SY3 at Komati Power Station. The goal is to preserve all components, including mechanical, electrical, and control systems, and document the condition of each component during disassembly. Any betterment suggestions may be put forward for the approval by the Employer.

#### Preparation:

1. Obtain a Permit to Work and all relevant documentation.
2. Ensure that the conveyor system is powered off and disconnected from any power sources.
3. Identify and document all critical components, including motors, sensors, belts, chains, and control panels.

#### Safety Measures:

1. Ensure that all personnel involved in the disassembly process are trained in safety procedures and have appropriate personal protective equipment (PPE) such as gloves and safety goggles.
2. Ensure that all work adheres to safety standards and regulations, including OHSA Permit to work systems for Eskom Power Plants.

#### Component Identification:

1. Clearly label and mark each component, including individual parts, with a unique identifier (KKS Codes) to aid in reassembly.
2. Create an inventory list of all components, noting their condition and any visible damage or wear. The list to include specifications and quantities of components.

#### Electrical Disassembly:

1. Disconnect and isolate electrical power to the conveyor system.
2. Safely disconnect all electrical connections, including power cables, control wiring, and sensors.
3. Label each electrical connection to facilitate reconnection during installation.
4. Carefully remove control panels and cabinets, ensuring the integrity of the control system components.

#### Mechanical Disassembly:

1. Start with the removal of guards, covers, and access panels to access the internal components.
2. Begin the disassembly of conveyor sections, starting from the discharge end and working backward to the infeed end.
3. Carefully remove belt, brackets, pulleys and idlers, taking care not to damage or distort them.
4. Detach motors, gearboxes, and drive assemblies, documenting their mounting positions and electrical connections.
5. Remove any sensors, switches, or instrumentation devices connected to the conveyor.
6. Inspect and clean each component as it is removed, noting any defects or damage.

#### Control System Disassembly:

1. Document the configuration and settings of the control system, including PLC programs, logic, and sensor settings.
2. Ensure that backup copies of control system programs and configurations are saved for future reference.
3. Disconnect and remove the control system components as needed, taking care to preserve them for reinstallation.

#### Documentation:

1. Maintain a detailed record of all disassembly activities, including photographs of components and their condition.
2. Create a comprehensive inventory list of all disassembled parts and components.
3. Include any notes regarding the condition, wear, or damage observed during disassembly.

#### Packaging and Storage:

1. Properly package and protect all disassembled components to prevent damage during transportation.
2. Store components in a secure and organized manner, ensuring that they are readily accessible for transport to Majuba Power Station's facility.

#### Safety Checks:

1. Before leaving Komati Power Station, conduct safety checks to ensure that no components have been inadvertently left connected or in a hazardous condition.

#### Reporting:

1. Provide a comprehensive report to project stakeholders, including photographs and documentation of the disassembly process and component condition.

#### Offloading

1. Proper and applicable equipment to be used to offload. This includes but not limited to chains, forklifts, and hoists
2. The supplier to provide all equipment to use.

#### Installation

1. Sound engineering practice to be used when installing
2. The supplier to provide a generic method statement to perform the task.

#### Commissioning

1. A commissioning procedure to be created by the supplier and approved by the employer.
2. Successful commissioning is achieved wen the conveyor runs flawlessly, and the employer is satisfied, based on acceptable standards.

#### Documentation

1. This covers all spares and maintenance strategies for the conveyor belt.
2. Training documentation is to be supplied as well
3. Supply of design information (1 X Electronic copy and 1 X Hard Copy)

#### IP Ratings

All equipment that is to be installed is to comply to IP65 and above. This is electrical and C&I equipment. Consultation with the Employer is necessary where there is equipment from the Komati Conveyor that is available but does not comply. Supply of that equipment is on the Contractor’s account. Hence it is necessary to do site visits before tendering.

#### Additional information

#### Walkways, platforms and Gantries

1. Walkways shall be open grid flooring suitably corrosion protected and shall be atleast 600mm wide.
2. The inclined walkways on conveyor gantry shall be of sloped construction and not stepped.
3. The walkway shall have handrails
4. Platforms and walkways shall be provided wherever access is required for regular inspection, lubrication or operation of machinery or equipment.
5. Access to all valves, instruments and equipment lubrication points will be provided either from the ground floor or from a platform.
6. Stairways shall be provided rather than ladders except in extreme cases where space is not available or usage will be very infrequent.
7. Stairway slope shall be between 38º and 42º, maximum slope.
8. Handrails shall be provided around all permanent openings, the edges of elevated platforms and access ways abutting edges to all internal side wall sheeting and walls, and to each stairway stringer and where required for safety.
9. A walkway will be provided along one side of the belt conveyor.
10. Access ladders shall be provided to all crane bridges.
11. Contractors to specify maintenance clearance requirements for equipment supplied, these clearances to e incorporated into layouts.

#### Loading and Transfer Points

1. One single chute shall be designed and manufactured to be installed in plant. (With simulations)
2. One bifurcated chute shall be designed and presented to the employer (With load and flow simulations)
3. Loading and transfer points shall be designed with the primary objective of reducing belt wear to a minimum and to eliminate spillage. (Feeding chute and receiving chute)
4. Chute shall be designed to utilise the most suitable and economical wear resistant materials available and shall be made large enough to facilitate access for maintenance purposes.
5. Chutes (loading and discharge) shall be provided with replaceable liners. All surfaces to be lined shall be covered over the full surface area that may be subject to wear.
6. Sideliners shall be made of not less than 4.5 mm thick VRN 500 plate.
7. Impact liners shall be made of no less than 4.5 mm thick VRN 500 plate.
8. The liners shall be sized to facilitate ease of replacement and inter-changeability.
9. Chutes shall be provided with inspection hatches to allow for ease of inspection and block chute detection.
10. Chutes shall be provided with provision for impact station, pivoting spoon

#### Rotating equipment

1. The direction of rotation of all rotating non-reversing equipment will be clearly and indelibly marked on the casing or nameplate.

#### Equipment erection

1. All equipment shall be erected in accordance with the requirements of the Mechanical Erection, Specification, and in accordance with Equipment Manufacturer’s Installation Instructions.

#### Equipment name plates (KKS Codes)

1. All equipment shall have permanent nameplates of material suitable for corrosive conditions on which the equipment number and description shall be clearly marked. This will facilitate equipment identification during construction and commissioning. KKS system shall be used in this regard.

#### Safety

**General**

1. All mechanical designs shall ensure that the relevant regulatory and statuary requirements are met.

**Guards**

1. All rotating parts that are accessible shall be guarded.
2. Shield guards or guard railing shall be provided at all belts, pulleys, gears, or moving parts.
3. Handrails, toe boards, and nonslip surfaces shall be provided on all elevated platforms, walkways, stairways and ramps.
4. All nip points shall be adequately guarded to prevent injuries

#### Signs

1. Signs shall be provided to alert all personnel of the need for protective clothing such as steel caped boots, hard hats, and safety glasses.
2. Signs shall be provided where a specific exists, such as live conductors, high noise levels, low head clearance, trip hazards, hot surface prevails.
3. Strobe lights and siren are to be installed.

#### Manufacture (Where applicable)

1. Tenderers shall submit with their tender a detailed Project Quality Plan, stating how they control the flow of paperwork from commencement of the Project through final handover to the Client, a sample of their Quality Control Plan, (QCP) and Project Quality Plan, (PQP) both during the course of the Project, manufacture and finally, installation.
2. The successful Tenderer shall submit a QCP covering all aspects of the manufacturing process, indicating held points to allow the Engineer opportunities to evaluate the equipment for compliance to this specification.
3. All items of equipment shall be subject to inspections by the Engineer during design and manufacture per these QCP’s.
4. In general, it is anticipated that this Project shall be in accordance with the relevant ISO 9000 requirements.

#### Installation

1. The successful Tenderer shall submit a QCP covering all aspects of the installation of each item of equipment to be installed under this Project.
2. The Engineer shall be afforded every opportunity to certain stages of completion of the installation to ascertain compliance with the Specifications and to witness the Contractor’s site activities at the Engineer’s discretion.

#### System performance

**Works testing**

1. Each item of equipment shall be subject to inspection and testing prior to despatch
2. All performance test results shall be made available to the Engineer for verification or when the QCP’s require intervention or hold points for inspection.

**Before commissioning**

1. Check for correct oil level in gearbox and that motors are greased properly.
2. Check for correct oil level in coupling and that the drive train is properly aligned
3. Ensure all HD bolts are torqued down correctly.
4. The alignment and levelling of each assembly shall be checked and the results shall be available for inspection by the Engineer. (Report format)
5. The electrical functions (with direction checks) and control shall be checked by a responsible inspector prior to attempting to start any motor on this Project.

**After Initial Commissioning**

1. Ensure all oil pumps and flow or pressure switches are functional
2. Ensure that all transfer points are operating satisfactory with no spillage.
3. Vibration and temperature tests are to be taken.

**Before Expiry of the Defects Liability Period**

1. The Engineer requires the Contractor to visit the site every quarter to inspect for the correct operation of the installed equipment. A report after each visit shall be submitted in writing

#### Offices and ablution facilities

1. The offices and ablution facilities shall be established on the allocated area
2. Electrical and plumbing facilities are to be catered for
3. Filling station piping is to be rerouted

#### Electrical Works

The conveyor system electrical supply and requirements are identified as follows:

1. Low Voltage Ash Substation No. 2.
2. Spare Circuit available: 04 BFG06DA001
3. Power: 55kW
4. FLA: 101A
5. Isolator: 100A (HL121)
6. Fuse: TCP100M200
7. O/L Range: 0.8 – 1.2 (B17S)
8. CT: 125/1
9. Contactor: LS 177 (Max A 130) or equivalent replacement
10. CCT Type: H3A, SC 8, 14, 18
11. Flood lights along the conveyor

Site visit is essential for the Contractor with all stakeholders involved

#### Control and Instrumentation Works

**General**

Each Conveyor LLP is centred on a Head End Control Unit (HECU) which is an intelligent programmable unit with built in fault diagnostics facility and control, monitors and supervises all conveyors safety and protection features.

Inputs to the HECU are as follows:

1. Emergency Stop Pushbuttons
2. Pull Keys
3. Belt Tear Detectors
4. Block Chute Detectors
5. Speed Units
6. Take-up Devices
7. Drive Unit Temperatures and Pressures
8. Belt Misalignment Detectors
9. Primary Devices

The HECU outputs are monitored by the ABB Distributed Control Systems (DCS) and displaying the information on the Human Machine Interface (HMI) in the Outside Plant Control Room (OPCR) and trips are hard wired to the Switchgear ETR/MTR.

The new ash link conveyor will only be stop/start and monitored from the OPCR with safety protection circuits alive at the conveyor plant.

**ABB Control System Structure and Configuration**

The ABB Control System consists of a network of functionally and where necessary geographically Distributed Processing Systems (DPS) which are linked to Centralised Distributed Processing Systems (CDPS) located in the Equipment Rooms adjacent to the Centralised Control Rooms by means of an interconnected communication bus system suitable for conditions prevailing at Majuba Power Station i.e. high lightning activity.

A facility is provided on the HMI for selecting the various HECU modes described above and they are displayed on the VDU.

### Documentation

#### Tendering Documentation

To enable the C&I specification to be formulated, the following documents are supplied by the Contractor at time of tendering:

Documents marked with an asterisk (\*) are superseded by documents produced by the Project Manager / Contractor during the course of the technical clarification phase.

1. Performance levels and testing of the Conveyor System

#### Contractor’s engineering

The Contractor provides an engineering capability for the following engineering phases and others in the same document:

#### Control and Instrumentation Technical Clarification

The Contractor attends clarification meetings with the Project Manager to clarify the interpretation of the documents provided by the Contractor and where necessary provide additional information or update the Contractor’s documents.

During the C&I technical clarification meetings the design is reviewed and finalised to produce a complete set of design freeze documentation.

The Project Manager utilises the Contractor’s documents to develop formal C&I engineering documents, which are reviewed and confirmed by the Contractor as reflecting his requirements. Final detail for scope of supply, interfaces, schedules, data sheets etc. are agreed.

Documents provided by the Contractor, marked with an “\*” (scheduled under Tendering Documentation above) are replaced by the documents generated by the Project Manager / Contractor.

#### Control and Instrumentation Installation, Testing and Commissioning

The Contractor provides planning and co-ordination for linking of field devices into the Plant.

During the testing and commissioning phases, the Contractor witnesses and verifies the correct performance and functionality of the Plant and field devices in accordance with the requirements of the documents agreed to at design freeze.

### Site Work

#### Installation \ Erection

This is defined as the installation and erection of all delivered items forming part of the Works as well as other items the Project Manager has specified. (free issued items etc.).

This phase includes loop checks, drive interfaces, testing system functionality, up to but excluding providing actuation power and process medium in the plant. (No safety clearance is required for this phase).

#### Interfacing with Other Contractors and Contractors

The Contractor is responsible to apply for possession to areas of the site occupied by others through the Project Manager. The Project Managers standard QA request forms to be used to obtain possession of any part of the Works.

#### Lagging and Scaffolding

* The Project Managers standard NWS 1454, site regulations and SABS 085 are applicable.
* Handling and Rigging
* The Contractor is responsible to arrange for all his Equipment handling and rigging requirements. Crane, loading bay, and lift requirements must be identified and clearly specified by the Contractor.

#### Welding

No welding will be allowed on site by the Contractor unless permission is granted in writing by the Supervisor. The Contractor is responsible to produce welding procedures containing sufficient detail regarding welder qualification, materials and acceptance criteria. These procedures must be submitted to the Project Manager at least 15 days before work on site commences.

The Contractor is responsible for the testing of welding by an approved Inspection Authority were applicable.

#### Documentation Requirements

The documentation produced for the operating, maintenance and training of the plant is of prime importance. This documentation includes those engineering and design documents required for the engineering functions of plant performance, analysis and modifications that follow the completion of the Works. This documentation is provided in the form of Manuals in accordance with the Standard D1.1 as well as in electronic format compatible to the Project Manager’s software.

Documentation specifically provided for the engineering, design and construction of the plant are as important for the Contract phase of the project, but are considered of secondary importance in relation to those provided for the Manual.

The Table of Documentation Requirements, as included in the documentation, indicates the minimum requirements of the typical documents required for the project:

The overall requirements are specified in this section, however, additional specific documentation requirements are detailed further in the relevant sections.

All documentation to include the Project Manager’s registration block on all the CAD generated drawings.

Documentation and drawings as agreed are delivered in accordance to the Key Date Schedule.

#### Documentation Synopsis - For Scope of Supply Approval

With the Contractor’s offer at Tendering Stage, the Project Manager requires a detailed summary of the requested documentation.

This summary hereafter referred to as the Documentation Synopsis, lays down the structure and content of the documentation to the extent that the Project Manager is able to visualise what is supplied.

In addition to the typical documentation referenced in the Table of Documentation requirements, the Contractor includes standard documentation and procedures such as:

* Standard brochures, catalogues, descriptions.
* Design standards, codes of practice, design guidelines, installation, test, commissioning and optimisation procedures.
* Drawing system description and index.
* Document management procedure.
* QA applicable documents as specified in MAJ 005.
* Design Modification Procedure.
* Data sheets of components.

The Documentation Synopsis must consist of documentation that is produced on this project.

The Contractor’s Documentation Synopsis is a summary and general view of the whole documentation package, and provides the Project Manager with a clear indication of its content for assessment and approval. A complete Documentation Synopsis with a list of types, specimen documents and specimen drawings is included in the Tender.

The Contractor’s Synopsis is agreed by contract award and defines the minimum documentation

#### Documentation system

The Contractor is to initiate and maintain an updated drawing register. The proposed content and layout of this register is to be included in the documentation synopsis. The Contractor shall submit to the Project Manager, on a monthly basis, a copy of the updated drawing register, unless mutually agreed otherwise in writing between the Project Manager and the Contractor.

The C & I documentation forms an integral part of the C & I Equipment itself and the engineering, design and modifications are undertaken on the C & I system itself such that no ambiguity or inconsistency exists between the programs/software in the design phase and those loaded into the C & I system.

The system is comprehensive in management and control of the documentation is based on a master document. This includes controlling the differing stages of modification that each section may be in.

The KKS plant position code is identified in all documentation.

Duplication of numbering or ambiguity is prevented within the system.

All field loop and control system diagrams; with details of devices, tag numbers, KKS codes, terminations, junction boxes and racks etc., are managed within the one system.

The format of all documents is to Project Manager's approval.

All documentation submitted is accomplished with drawing transmittal advice NWR 134 supplied by the Project Manager.

#### Drawings

The Contractor submits drawings in accordance with the relevant standard and key dates. One (1) copy of preliminary drawing prints or high quality photo copies are submitted to the Project Manager.

Initial specimen drawings (one copy ) of all types of drawings that will be used by the Contractor, is submitted to the Project Manager for approval.

For the hardware related documentation, Micro-station CAD, or AUTOCAD to be used and the Contractor to include the software. Electronic format of the drawings shall be submitted with the hard copies in the format of CD ROM.

All drawings submitted to Project Manager are accompanied by drawing transmittal advice NWS 134 supplied by Project Manager.

The Contractor to include the Project Manager standard KKS and Approval block on all CAD generated drawings submitted to the Project Manager.

The following standards are adhered to:

1. GSE/94/Y001 Drawing number system
2. GSE/94/Y003 Abbreviation standard for labelling
3. GSE/94/Y004 Standard drawing practice
4. GSE/94/Y006 Drawing record system

#### Modifications

The Contractor provides additional and amended pages, sufficient for all copies of manuals or drawing sets to ensure than they are complete, inclusive of detail such as final settings and modifications made up to the time of taking over. In addition they are revised to include details of all further changes carried out up to Contract completion. Such information is forwarded to Project Manager progressively and promptly following receipt of agreement to Equipment or system design modifications.

#### Document control

The Contractor implements a comprehensive document management system for control of all documents, there revision status and of document status in relation to the "as built" and "as designed" plant status on each section. 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 Micro Soft Excel format, to Project Manager:

1. Status of registration in the *Project Manager’s* documentation centre
2. Drawing number (***Project Manager*** and makers number)
3. Revision
4. Approval status
5. Location of drawing at that stage
6. Drawing KKS number
7. Drawing description
8. Sheet number
9. Transmittal number

#### Failure to supply drawings and instruction manuals

In the event of completed drawings, draft manuals, schedules and program not being in Project Manager's hands at the time of commissioning, the Contract Works will not be completed and the Contractor shall provide Project Manager with full maintenance at no additional cost until the default is remedied. Damages for low performance are applicable.

#### Review of design

The Contractor, who is fully responsible for carrying out the detail design, submits, on a continuous basis, all design calculations and drawings for review by Project Manager.

#### Approval of documentation

The Project Manager is to approve all documentation. The Contractor is not relieved from his obligations or responsibilities after the Project Manager has approved any of the documentation.

#### Engineering and Design

The Contractor undertakes all the stages of engineering and design from systems engineering through technical clarification, design freeze, production engineering to installation and commissioning.

The engineering and design is documented in drawings or documentation for it to be visible to the Project Manager and in order for it to be treated as a deliverable part in the various stages of the Contract. The basis for this is included in the Table of Documentation Requirements (as listed above) which reflects the extent and responsibilities for production of documents.

In particular, part of the system engineering includes all the development of the function and schematic diagrams, control strategies and descriptions, as well as operator interface requirements to enable the technical clarification to proceed with the Project Manager and the process plant Contractors.

During the engineering and design phase the Contractor provides system and specialist engineers with appropriate expertise and experience for each technical area. These engineers are to be fully competent to explain and clarify the designs to the Project Manager’s engineering staff.

These activities are considered vital to the success of the project and only the best expertise available internationally to the Contractor will be acceptable to the Project Manager.

The Contractor is to provide, at the tender phase, a detailed clarification programme with a proposed day to day agenda. This clarification programme is to include the local and international resources by name and experience as well as the duration of their activities during the engineering and design phase.

The resources provided for the engineering and design phase are to be available after the engineering and design phase for queries, modifications and during the system test and commissioning stages.

#### C & I Systems Engineering

Systems Engineering is defined as all the activities to ensure that the individual parts of the C & I as well as the C & I system together with its sub-systems, is designed and operates as an integrated and consistent system within itself and together with the rest of the Plant.

For this to be effective the Contractor takes the responsibility of collecting all information and data for the design and this includes process/plant data and information from the Project Manager to enable the design to be complete. Where the C & I interfaces with any third party the Contractor co-ordinates and designs to ensure an overall complete design. There is no involvement of an engineering consultant such as an Architect engineer and the Contractor works directly with the Project Manager for all technical matters.

Detailed engineering of the interfaces within this contract and the interfaces between the other systems form part of this Contract.

The Contractor shall perform the function of the coordinator for all technical interfaces between the Common Plant Control Systems and HECU.

The Contractor, in conjunction with the Employer acts as technical leader and co-ordinator for interfaces to the Contractor’s system. The Employer exercises contractual responsibility over other parties. The Contractor undertakes detailed engineering within the Contractor’s system but does not provide engineering within a third party system. The Contractor does not provide third party hardware.

The System Engineering is fundamental to all the Engineering activities throughout the duration of the Contract.

#### Technical Clarification

Technical Clarification is the project stage where the Contractor undertakes engineering and design activities, to clarify with the Project Manager all technical issues so as to permit the Contractor to undertake the Production engineering phase.

The Table of Documentation Requirements, lists the typical types of documentation required during the course of the Technical Clarification.

In the initial phase of the Technical Clarification the Project Manager is presented with the conceptual designs and philosophies for discussion and finalisation. This is to cover as a minimum:

1. High level design to meet the performance criteria
2. Automation level and its configuration
3. Operator interface
4. Information system
5. Engineering system
6. Documentation

In the next phase the Contractor prepares and presents all designs and documentation in order to discuss and finalise all functional definition of the Works .

In the last phase of technical clarification, the updated performance, functional, and Equipment specifying documentation is reviewed by the Project Manager, and formal documentation is prepared by the Contractor for Design Freeze.

The drafts of documentation prepared by the Contractor for the various Technical Clarification phases, are to be presented 5 working days prior to the start of the respective technical clarification discussions.

The documentation is be in a logical, informal but adequate state of completeness; prepared in conformity with the agreed Synopsis.

#### Design Freeze

Design Freeze is a milestone date where the Project Manager agrees and approves the final performance, functional and Equipment specifying documents and the Contractor is authorised to proceed with detailed engineering and design (Production Engineering).

The Contractor provides one copy of the following documentation five working days after the clarification meetings are finished:

1. Documents as agreed in the Table of Documentation Requirements for Design Freeze.
2. A summary of the outcome of the Technical Clarification meeting discussions.

#### Production Engineering

Production Engineering is defined as all the Contractor’s detailed engineering and design activities that translate the requirements finalised in the Technical clarification, into a fully operational system. This includes the selection of all primary devices, field instrumentation, control system hardware, software development, all documentation for erection and commissioning, preparation of testing, installation and commissioning procedures as well as operating, maintenance and training documentation.

One copy of the Production Engineering and Design Documentation prepared is issued by the Contractor to the Project Manager for approval, five working days before construction is due to commence and by the dates given in the Contractor’s Key Date Schedule.

For a list of the minimum documents required by the end of the Production Engineering stage, refer to the Table of Required Documentation.

#### Installation and Commissioning

For a list of the minimum documents required for the installation and commissioning stage, refer to the Table of Required Documentation.

#### Completion Documentation

For a list of the minimum documents required for the Completion stage, refer to the Table of Required Documentation.

#### Manuals

The manuals provided under this Contract are to be supplied as inserts which are easily added to the ABB manuals.

The Contractor is to provide manuals which meet the requirements of Standard D1.1 . The standard prescribes the type of information that to be supplied by originators of user information, catalogues and schedules and other product support documentation required to be supplied by the Contractor. It also prescribes the Quality of Documentation required to be supplied to Project Manager.

The onus is on the Contractor to fully acquaint himself with the requirements as the Project Manager will not entertain any claim in this regard.

Manuals to be of good quality prepared by suitably experienced personnel and to contain general arrangement drawings, installation drawings and instructions, operating and maintenance instructions for all components, detailed parts lists which to be accompanied by exploded view type drawing clearly detailing the part of uniquely identifying it to, technical descriptions of the Equipment and component parts, spare part ordering instructions and type test certificates. Any special instructions regarding the storage of spare parts or to the shelf life of equipment shall be included in the manual. All drawings required for component location, dismantle and reassemble for maintenance and operating the Equipment to be identified in a schedule to be included in the manual.

The training, operating and maintenance manuals to include the control operating philosophies of all plants , be cross referenced and matched in format and style to the manuals supplied by the main Contractors for their plant.

In cases where the Contractor supplies equipment from vendors external to the Contractor's organisation, complete detailed manuals and information shall be submitted to the Employer.

Manuals are produced such that a Synopsis (this is the synopsis for the manual and is in addition to the Documentation Synopsis provided in the tender phase of the project) is first presented, followed by a First Draft, then by a Final Draft / Pre Print Proof and finally by the Final number of copies of the Approved Manual. The time scales for submission of these documents are agreed with Project Manager.

The quantity of manuals to be supplied is as follows:

1. Synopsis (Manual) 1 copy
2. First Draft 1 copy
3. Final Draft / Pre Print Proof 1 copy
4. Final Manual 1 copy

Manuals are in English and each manual to be complete with the:

1. Power Station Name
2. Contract number
3. Contract Name
4. Plant Area
5. Contents
6. Index
7. Licenses and Copyright

#### Licenses

All licenses required by the Project Manager covering the Equipment, standard software and application software forming part of this Contract are included. This includes any licenses from third parties.

Licenses for the Equipment and software provided under the contract, including third party licenses are for the life of the Equipment being provided.

The licenses are to be extended for the duration of the life of the HECU MK8 and are site licenses for use at Majuba Power Station site.

The Employer may wish to operate the equipment beyond the commercial availability of the system components. At this time the Contractor makes available such information that may be required to repair the Contractor’s designed and manufactured modules. The Employer applies for this information on an individual basis. Transfer of this information is not construed as relinquishing of any copyright by the Contractor.

#### Upgrades

The licenses for all upgrades throughout the duration of the Contract are provided. Upgrades are necessary to solve particular problems, or to meet the functional specification of the contract.

#### Future Plant

The engineering, design, software and documentation covering the functional design of the plant and its controls are the intellectual property of the Project Manager and the Contractor and have unrestricted copyright and licenses, to permit the use by the Project Manager for the purpose of designing a future plant. This requires the permission of both parties beforehand.

#### Modifications

The Project Manager may allow third parties access to the system for the purpose of upgrading or modification subject to the following condition:

The Contractor considers third party access on an individual basis. Interfaces are to be disconnected for performance testing on the system. The Contractor reserves the right to disconnect the system should it be found to be to the detriment of the system.

#### Documentation

The engineering, design, software, operating maintenance and training documentation are to have unrestricted copyright and where required extended licenses, to permit use by the Project Manager for the purposes of training the Project Manager’s staff.

#### Item List

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No. | Description | Unit | Quantities |  |
|  | CTS MK 8 HECU 48V including Panel as per scope: supply, deliver, off load, install, terminate, engineer, labelling and commission the works |  | 1 | |
|  | Emergency Stop Pushbuttons |  | 2 | |
|  | Pull Keys |  | 4 | |
|  | Belt Tear Detectors |  | 2 | |
|  | Block Chute Detectors |  | 2 | |
|  | Speed Unit |  | 1 | |
|  | Take-up Device Switches |  | 2 | |
|  | Plant Labels according ESKOM procedures |  | 25 | |
|  | Belt Misalignment Detectors |  | 2 | |
|  | AVA |  | 2 | |
|  | Primary Devices |  | 5 | |
|  | ABB MP200/AC450 Software, Hardware and HMI Configurations |  | 1 | |
|  | Conveyor Speed Tacho Generator Analog 4 to 20 ma output signal |  | 1 | |
|  | RP Cost |  | 1 | |
|  | ABB 24VDC Surge Arrestors din rail mounted |  | 6 | |
|  | 220VAC Surge Arrestors din rail mounted |  | 6 | |
|  | RV08 Terminals for ABB DCS |  | 6 | |
|  | UVG Cables |  |  | |
|  | Power Cables |  |  | |
|  | CT Systems Cables |  |  | |
|  | Documentation |  | 1 | |
|  | Termination of each cable. |  |  | |
|  | All consumables |  |  | |

## Interpretation and terminology

### Definitions

| **Definition** | **Explanation** |
| --- | --- |
| Agent | (OHS Act) means any person who acts as a representative for a client |
| Competent person | (OHS Act) means any person having the knowledge, training, experience, and qualifications, specific to the work or task being performed, provided that, where appropriate, qualifications and training are registered in terms of the South African Qualifications Authority Act, 1995 (Act No. 58 of 1995) |
| *Contractor* | In relation to this document, where the word “*Contractor*” is used, it will mean all or some of the following: principal *Contractor*s, appointed *Contractor*s, suppliers, vendors, service providers and consultants |
| Construction work | (OHS Act) means any work in connection with:  the erection, maintenance, alteration, renovation, repair, demolition or dismantling of, or addition to, a building or any similar structure;  the installation, erection, dismantling, or maintenance of a fixed plant where such work includes the risk of a falling person;  the construction, maintenance, demolition, or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system, or any similar civil engineering structure; or  the moving of earth, the clearing of land, the making of an excavation, pilling, or any similar type of work |
| Design | (OHS Act) in relation to any structure, includes drawings, calculations, design details, and specifications |
| *Employer* | (OHS Act) means, subject to the provisions of subsection (2), any person who employs or provides work for any person and remunerates that person or expressly or tacitly undertakes to remunerate him/her, but excludes a TES (ex-labour broker) as defined in section 1(1) of the Labour Relations Act 1956 (Act No. 28 of 1956) |
| Environment | (32-94) means:  the land, water, and atmosphere of the earth; micro-organisms and plant and animal life; and any part or combination of (a) and (b) and the interrelationships among and between them, and the physical, chemical, aesthetic, and cultural properties and conditions of the foregoing that influence human health and well-being |
| Environmental aspect | An element of an organization's activities or products or services that can interact with the environment |
| Environmental Impact | Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's environmental aspects |
| Environmental Management plan | A detailed plan of action prepared to ensure that recommendations for enhancing or ensuring positive impacts and limiting or preventing negative environmental impacts are implemented during the life cycle of a project. This Environmental Management Plan should preferably form part of Eskom’s Environmental Management System |
| Eskom requirements | Eskom requirements flowing from directives, policies, standards, procedures, specifications, work instructions, guidelines, or manuals |
| Fall protection plan | (OHS Act) means a documented plan of all risks relating to working from an elevated position, considering the nature of work undertaken, and setting out the procedures and methods to be applied in order to eliminate the risk |
| Flownex | Flownex® Simulation Environment delivers technology that enables you to study how systems will behave in the real world, where fluid is the driving factor. Flownex® system simulation relays the overall effect of changing specific properties on components, allowing clients to examine extensively all possible variations in the design and optimization of systems |
| Hazard | (OHS Act) means a source of, or exposure to, danger |
| Health and safety plan | (OHS Act) means a documented plan that addresses hazards identified and includes safe work procedures to mitigate, reduce, or control hazards identified |
| Health and safety requirements | Means comprehensive health and safety requirements for a contract, project, Site, and scope of work. This specification is intended to ensure the health and safety of persons, both workers and the public, and the duty of care to the environment. The health and safety requirements must be specific to each contract, project, Site, and scope of work |
| Hot work | means any activity involving, a source of ignition, such as welding, cutting, grinding, sparks, and any electrical equipment that could give off sparks and any other work that could serve as a source of ignition that can pose a danger, specifically when carried out in a confined space or in the vicinity of any combustible material. |
| Hot work approval | Means a document that approves hot work and states the precautions to be taken before, during and after hot work. This document is prepared and signed by the hot work monitor. (Refer General Safety Regulation 9 of the Act) |
| Hot work monitor | Means the person(s) appointed by each Site to perform the duties required to complete and approve the hot work approval document and be responsible to ensure that precautions detailed therein are carried out and the provision of adequate firefighting equipment. The hot work monitors training must include: knowledge on the “triangle of combustion”, causes of fire, identification of combustible materials, fire spread, classes of fire, methods of extinguishing a fire and which extinguishing agent to choose for safety reasons, as well as the use of fire extinguishers and fire hose reels. |
| Lifesaving Rules | (240-62196227) a rule that, if not adhered to, has the potential to cause serious harm to people |
| Method statement | (OHS Act) means a written document detailing the key activities to be performed in order to reduce, as reasonably as practicable, the hazards identified in any risk assessment |
| Pre-job brief or meetings | (34-227) means a meeting that is held prior to the commencement of the day’s work and that is attended by all the relevant employees associated with the work task |
| Project Manager/ Leader | (32-136) means the person who has the responsibility for the successful planning and execution of a project. The *Project Manager* must satisfy the certification requirements set by the South African Council for the Project and Construction Management Professions.  Note: the *Project Manager* is the duly authorised Eskom representative who acts on Eskom’s behalf as the administrating officer for the purposes of the contract |
| Risk assessment | (OHS Act) means a programme to determine any risk associated with any hazard at a construction Site in order to identify the steps needed to remove, reduce, or control such hazard. |
| Site | (34-228) means an Eskom department, unit, complex, building, specific project, work site, or the site where agents, clients, principal *Contractor*s, *Contractor*s, suppliers, vendors, and service providers provide a service to Eskom, directly or indirectly |
| Supplier | (32-1034) means a natural or legal person who renders a service and may include the following current or potential supplier vendor, *Contractor*, consultant |
| *Supervisor* | *Supervisor* is the *Employer*’s appointed person responsible for supervising the *works* as per the NEC contract. |
| Task | (34-227) a segment of work that requires a set of specific and distinct actions for its completion |

### Abbreviations

The following abbreviations are used in this Works Information:

| **Abbreviation** | **The Meaning is Given to the Abbreviation** |
| --- | --- |
| °C | Degrees Celsius |
| AS | Authorised Supervisor |
| BCEA | Basic Conditions of Employment Act |
| BOP | Balance of Plant |
| Ca | Calcium |
| C&I | Control and Instrumentation |
| CB | Circuit Breaker |
| CFD | Computation Fluid Dynamics |
| COC | (Electrical) Certificate of Compliance |
| COID | Compensation for Occupational Injuries and Diseases |
| CSIR | Council for Scientific and Industrial Research |
| CV | Curriculum Vitae |
| DB | (Electrical) Distribution Board |
| DCS | Digital Control System |
| Demin | Demineralised |
| dP | Differential Pressure |
| ECSA | Engineering Council of South Africa |
| EPS | Expanded Polystyrene |
| FET | Further Education and Training |
| FRI | Forecast Rate of Invoicing |
| FSS | Finance Shared Services |
| GA | General Arrangement |
| GR | Goods Receipt |
| H | Height |
| Hex | Hexagon |
| HIRA | Hazard Identification and Risk Assessment |
| hr | Hour |
| IIW | International Institute of Welding |
| ITP | Inspection and Test Plan |
| IWP | International Welding Practitioner |
| IWS | International Welding Specialist |
| KKS | Kraftwerk Kennzeichen System (unique identification system for plant components) |
| K | Potassium |
| kPa | Kilo Pascal (Pressure measurement unit) |
| LCS | Local Control Stations |
| LDV | Light Delivery Vehicle |
| LED | Light Emitting Diode (bulbs) |
| LOSS | Limits of Supply and Services |
| LRA | Labour Relations Act |
| LTI | Lost Time Injury |
| mEq/L | Milliequivalents per Litre |
| M / m | Meter |
| m3 | Cubic metre |
| Mg | Magnesium |
| MM/mm | Millimetre |
| MPS | Majuba Power Station |
| Na | Sodium |
| NCR | Non Conformance Report (Eskom document) |
| NCS | Natural Colour System |
| NDE | Non Destructive Examination |
| NEC | New Engineering Contract |
| OEM | Original Equipment Manufacturer |
| OP | Outside Plant |
| PDF | Portable Document Format |
| PER | Pressure Equipment Regulations |
| PPE | Personal Protective Equipment |
| PPM | Parts Per Million |
| PTW | Permit To Work |
| QCP | Quality Control Plan |
| RP | Responsible Person (for PTW) |
| SAIW | South African Institute of Welding |
| SAMTAC | Safety Management Training Course |
| SANS | South African National Standard |
| SARS | South African Revenue Services |
| SAQA | South African Qualifications Authority |
| SE | Service Entry |
| SETA | Skills Education Training Authorities |
| SiO2 | Silicon Dioxide |
| SO4 | Sulphate |
| UIF | Unemployment Insurance Fund |
| VAT | Value Added Tax |
| W | Width |
| WPQR | Welding Procedure Qualification Record |
| WPS | Welding Procedure Specification |
| WQR | Welder Qualification Record |
| WRB | Welding Rule Book |
| WTP | Water Treatment Plant |

# Management and start-up

## Management, feedback and reporting

* + - 1. The *Contractor* manages all contracted personnel including Subcontractors and is responsible for ensuring compliance to the Works Information and all contracted terms and conditions.
      2. The *Project Manager* is the delegated *Employer*’s representative and the *Contractor* reports directly to the *Project Manager* and obeys all lawful instructions given. The *Project Manager* manages the overall performance of the *Contractor* and all Subcontractors used in Providing the Works. Therefore, the *Contractor* ensures that the *Project Manager* is given their full co‑operation including the timeous reporting and feedback of all matters of importance and compliance to all instructions.
      3. The *Contractor* complies with the Works Information and reports all matters timeously and with sufficient detail to the *Project Manager*.
      4. The *Contractor,* being the competent party for execution of the works, raises concerns, risks or other matters which affect or could affect the performance of the *Contractor* or the performance of the works to the *Project Manager*.

## Management meetings

* + 1. Regular meetings may be convened and chaired by the *Project Manager* as follows:

| **Title or purpose** | **Approximate time or interval** | **Location** | **Attendance by:** |
| --- | --- | --- | --- |
| Kick-off meeting | Within two weeks of contract start | Majuba Power Station, Projects Boardroom | *Employer’s* and *Contractor’s* Project/Contract and Site Managers and SHEQ representatives. |
| Overall contract progress and feedback | Weekly | Majuba Power Station, Projects Boardroom | *Employer’s* and *Contractor’s* Project/Contract and Site Managers |
| Risk register and compensation events | Monthly | Majuba Power Station, Projects Boardroom | *Employer’s* and *Contractor’s* Project/Contract and Site Managers |
| Majuba *Contractor’s* Safety meeting | Monthly (while on site) | Majuba Power Station, Ben Steyn Auditorium | *Employer’s* Project Manager and *Contractor’s* Site Managers and *Contractor’s* Safety Officer |
| Quality and NCR/ Defect meeting  Refer 240-10565800 previously QM 58 | Monthly | Majuba Power Station, Projects Boardroom | *Employer’s* and *Contractor’s* Project/Contract and Site Managers and/ or *Contractor’s* and SHEQ representatives. |
| Assessment meetings | On or before 25th of the month. | Majuba Power Station, Projects Boardroom and on site | *Employer’s* and *Contractor’s* Project/Contract and Site Managers |

* + 1. The *Project Manager* may change the frequency of meetings, convene special meetings as specified elsewhere in this Works Information or if not specified then as and when required by the *Project Manager* and attended by all relevant *Contractor*’s personnel at the times and locations communicated by the *Project Manager*.
    2. All meetings are recorded using minutes and a register prepared and circulated by the person who convened the meeting. Such minutes or register is not used for confirming actions or instructions under the contract as these are done separately by the person identified in the conditions of the contract to carry out such actions or instructions.
    3. The *Contractor* arranges and holds all necessary and mandatory meetings with his employees including daily toolbox talks, pre-job and post-job briefings, health and safety and risk assessment meetings etc. The *Contractor* informs the *Project Manager* of the dates and times of such meetings and ensures that there is minimal impact on performing the work.

## Documentation control

### General

* + - 1. The NEC ECC contract terms and conditions, the signed contract document (agreement) and all referenced documents are the only documents, which detail the obligations of the *Employer* and *Contractor*.
      2. The *Contractor* submits all documentation, including design, training and as built, to the *Project Manager* and the *Project Manager* to the *Contractor’s* Project/Contract Manager.
      3. Electronic contract communication is restricted to electronic mail only stating the contract number and relevant subject of the email in the subject line.
      4. All communications are filed and kept on Site. These communication documents are to adhere to the ECC 3 communication requirements.
      5. For contractual issues, standard NEC templates and forms are used by both parties or if unavailable, the *Employer’s* templates and forms are used e.g. Non Conformance Reports, Pre-commissioning checks or Assessment Certificates. Alternatively, the *Project Manager* instructs the *Contractor* to prepare appropriate documentation to meet contract requirements.

### Documentation Submission with the Tender

* + - 1. The Contractor submits all commercial documentation as specified in the Invitation to Tender document, as well as all documentation as specified by the SHEQ requirements.
      2. The Contractor submits CV’s and certified copies of qualifications) of the key persons (Project Manager or Site Manager, Professional Engineer(s), Supervisors including Welding Supervisors and Coating Inspector(s)) that are used on this project. The Contractor indicates clearly in the submission, which person is utilised in each position. Refer to Section 4.1.1, Minimum requirements of people employed on the Site, for the minimum qualification and experience requirements for all key persons, as well as the Conveyor belt installation Replacement Mandatory Technical Evaluation Criteria rubric for the scoring system that is used to evaluate the key persons during tender evaluation.
      3. The Contractor submits references of at least four (3) previous or current projects relating to plant refurbishment and/or installation and commissioning projects in any relevant industrial environment. Refer to the Conveyor Installation Mandatory Technical Evaluation Criteria rubric for the scoring system that is used to evaluate these projects during tender evaluation. Records and references of the projects may be verified. For each project that is referenced the following must be included as a minimum:
         1. Title and short description of the project
         2. Contract or order number
         3. Signed agreement page(s) or signed completion certificate(s) for the projects listed above.
         4. Client name(s) and contact details
         5. Start date and end date of contract or order
      4. The Contractor is required to adhere to ISO 15236-1:2016(en)
      5. The Contractor submits a project-specific site team organogram indicating all the labour and management resources to be allocated to the project. The numbers and designations of all employees must be clearly indicated. This is regarded as the Contractor’s Permanent Core Team. All additional recruits, which are not part of the Contractor’s Permanent Core Team, are recruited as per the process set out in 3.1.2.1, Recruitment of General, Semi-Skilled, and Skilled Labour.
      6. The Contractor submits proof of a fully operational Quality Management System that meets the intent of:
         1. 240-106365693 - External Corrosion Protection of Plant Equipment and Associated Piping with Coatings.
         2. The following documentation should be submitted for review:
  + Quality Control check sheets to record paint batch numbers, psychrometric conditions, surface preparation, coating application and special tests as required
  + Works Procedures
  + Inspection and Test Plans
  + Release Certificates
  + Certificates of Conformance
  + Blank templates OR copies of previous work may be submitted. Refer to the Mandatory Technical Evaluation Criteria rubric for the scoring system that is used to evaluate the quality management system during tender evaluation.
    - 1. The appointed coating inspector(s) for both coating and rubber lining must be qualified to SAQCC (Corrosion Protection) and have either one of the following: Coating Inspectors Level 1 (shop inspections) or Coating Inspectors Level 2 (site inspections) or NACE Coating Inspection Programme (CIP) or equivalent qualification. If different subcontractors are used for external and internal corrosion protection, then the qualifications for both coating inspectors must be submitted. Copies of the appointed coating inspector's relevant qualification(s) must be submitted for review. Refer to the Mandatory Technical Evaluation Criteria rubric for the scoring system that is used to evaluate the coating inspector(s) during tender evaluation.
      2. The *Contractor* submits references of at least three (3) previous or current projects relating to design, installation and commissioning projects in any relevant industrial environment. Preference is given to design, installation and commissioning related projects in the water works environment. Refer to the Mandatory Technical Evaluation Criteria rubric for the scoring system that is used to evaluate these projects during tender evaluation. Records and references of the projects may be verified. For each project that is referenced the following must be included in its summary as a minimum:
         1. Title **and** a short description of the project
         2. Proof (discretion may be used) that the project was successfully designed, installed and commissioned by the intended *Contractor* or subcontracted company
      3. The Contractor and/or intended subcontractor(s) (if applicable) that is responsible for the design activities relating to this project should have at least one Professionally Registered Engineer that is responsible for reviewing, approving and signing off the detailed design package, with the appropriate undergraduate engineering degree and professional registration with the Engineering Council of South Africa (ECSA). The Contractor submits proof of qualifications and proof of professional registration (ECSA certificate) for at least one Professionally Registered Engineer.
      4. The *Contractor* submits a preliminary, detailed project programme, in Microsoft Projects format that indicates all major activities and milestones for the project. Refer to the ntMandatory Technical Evaluation Criteria rubric for the scoring system that is used to evaluate the project plan during tender evaluation. The following must be included as a minimum:
         1. Project start date
         2. Procurement lead times
         3. Major milestones including installation and commissioning for each section as outlined on the *Employer's* enquiry
         4. Project completion date

### Documentation Submissions after Contract Award

* + - 1. The *Contractor* submits the following prerequisite documentation before any fabrication or work on Site commences for acceptance by the *Project Manager*.
      2. Letters of Good Standing for COID and SARS, refer to section 2.4.1.6 for additional information.
      3. Site organogram and CV’s with qualifications and experience for all skilled workers. Any change of personnel nominated at tender stage is submitted for acceptance by the *Project Manager* and all the listed competencies are complied with.
      4. Police clearance certificates for all the *Contractor*’s workers, supervisors and management, including all Subcontractors.
      5. Safety Plan for acceptance. Based on the accepted programme, certified identity documents and valid medical fitness certificates are required for safety induction to be performed.
      6. List of proposed Subcontractors to be used during fabrication and installation
      7. Manufacturer’s quality certification records.
      8. Quality Control Plans (QCP’s), as per the accepted programme, relating to all activities in the *works.*
      9. Non-destructive testing procedures to be used during construction and installation.
      10. Non-destructive testing operator’s qualifications.
      11. Non-destructive testing equipment calibration certificates.
      12. Corrosion protection and painting application procedures.
      13. Welding quality control inspector’s qualification records.
      14. Welders’ qualification records.
      15. Welding Procedure Qualification Records (WPQR) and Welding Procedure Specification (WPS) to BS EN ISO 15614 - Part 1 for thickness range 2.5 to 30 mm for processes SMAW welding of group 1 materials. All WPS’s are supported by a valid WPQR to BS EN ISO 15614 - Part 1 as stipulated in 240-106628253 (Eskom Welding Standard). The *Contractor’s* WPQR is approved to satisfy the requirements of drawing 0.66/19875, rev 6. Refer to Table 3: List of Drawings and Datasheets. The *Contractor* makes provision for approximately seven working days for reviewing and approving of WPQR and WPS by the *Employer*.
      16. A template of the *Contractor*’s daily Site diary.
          1. Commencing as from site establishment and all through execution and commissioning of the works, the *Contractor* completes and submits a daily Site diary to the *Project Manager* or *Supervisor* daily for checking, commenting and signing-off. A hard copy is supplied which includes the following information as a minimum:
  + Actual start time and end times of work for the day (not generic times).
  + The number of people in attendance per trade.
  + Equipment used.
  + Description of the programme activity and progress achieved for the day, which includes:
    1. Times and activities e.g.
       - 07:45 – 08:00 Toolbox talk,
       - 08:00 – 15:00 Preparatory works
       - 15:30 - Stop work due to permit issues, etc.
    2. Estimated percentage completion achieved for that activity. Site manager and supervisor/s must plan work according to the Accepted Programme.
  + Weather data especially rainfall readings - take and record the measurements with times (as and when it occurs). Other issues such as wind or temperature should be noted if/when it affects the work.
  + Include other site activities e.g. scaffold building for access, work or inspections by others etc.
  + The toolbox talk safety topic for the day, pre-job brief, post-job brief, requests, risks, issues etc.
  + Spaces available for names, signatures, date and comments of the *Contractor*’s *S*ite/Project Managerand *Project Manager.*
  + Sign-off by all the *Contractor*’s employees. \*\*\*

\*\*\*If the daily Site diary is not signed off by all the *Contractor*’s employees in attendance then a separate daily attendance register is used and supplied. Attendance registers include full names, ID numbers, starting time, finishing time and signatures. Attendance registers are signed off by the *Contractor’*s project/site manager and submitted to the *Project Manager* on a daily basis. Diaries and attendance registers are also required for the assessment day and again at month-end with the monthly man-hours report.

### Documentation Submissions at Contract Completion

* + - 1. All documentation requirements such as forms, datasheets, certificates, drawings, maintenance and operating manuals, etc. for newly installed equipment remain the responsibility of the *Contractor*. All documentation conforms to the *Project Manager’s* requirements, for review and acceptance by the *Project Manager* or other *Employer*’s delegates e.g. Engineer reviews and accepts the QCP’s.
      2. The *Contractor* files all documents listed in Section 2.2.3.1 in a Data Pack as the work progresses and QC files are reviewed regularly to check and confirm that the *Project Manager*’s requirements are met. By completion, the Data Pack is almost fully compiled and ready for the *Contractor* to make and submit copies and perform hand-over. The documents required in the Data Pack include the following:
         1. For all pipework, the relevant material certificates, corrosion protection control sheets and corrosion protection inspection and test certificates, iso-datasheets, final installation inspection reports, and safety clearance certificates must be included in the Data Pack.
         2. For all C&I instrumentation, the relevant datasheets, maintenance manuals, conformance certificates, calibration certificates, and final inspection reports must be included in the Data Pack.
         3. For all valves, the relevant datasheets, maintenance manuals, material certificates, hydrostatic pressure test certificates, final inspection reports and safety clearance certificates must be included in the Data Pack.
         4. For all actuators, the relevant datasheets, maintenance manuals, conformance certificates, stroke certificates and final inspection reports for the actuators must be included in the Data Pack.
         5. For all other miscellaneous equipment not mentioned here, the relevant datasheets, maintenance manuals, conformance certificate, final inspection reports and safety clearance certificates must be included in the Data Pack.
         6. For the cation exchange vessels, the following documents must be included in the Data Pack as a minimum:
  + ITP's/QCP's
  + Design and Construction documentation
  + Welding Procedures and Welder Qualifications
  + NDT Procedures and Operator Qualifications
  + Manufacturer's Inspection and Test Certificates
  + Material Certificates
  + NDT Reports
  + Corrosion Protection Control Sheet
  + Corrosion Protection Inspection and Test Certificates
  + Installation Inspection and Test Certificates
  + Safety Clearance Certificate
  + “As-Built” Arrangement/Isometric Drawing
  + Photocopy of Nameplate
  + Datasheet/Iso Datasheet/Performance Curve
    - 1. A relevant spares list for all plant newly installed components must be included.
      2. The Data Pack includes a technical manual which includes fully detailed descriptions of the cation exchange vessels, diagrams, illustrations, schedules and data for use by the *Employer*’s technical staff to evaluate performance, trace faults, adjust, maintain and fully understand the plant and plant equipment and to enable the *Employer* to train junior staff in conjunction with the operating manuals.
      3. The Data Pack includes a maintenance instruction manual which includes schedules to cover plant inspection procedures, fully detailed maintenance programmes for plant and plant equipment services at daily, monthly, three-monthly, six-monthly, yearly and any other necessary intervals, and contain manufacturer’s and supplier’s detailed maintenance and lubrication instructions, diagrams, sectional drawings giving part numbers, descriptions, etc. The manual also includes minimum surveillance requirements for the plant. The maintenance instruction manual details maintenance procedures, covering removal, dismantling, replacement of parts, re-erection, checking, and reassembly and re-commissioning for all equipment. The maintenance manual is fully comprehensive and covers all plants and plant equipment installed.
      4. The additional requirements for the Data Pack include:
         1. Project title, power station name and contract number;
         2. Index page/s;
         3. List of reference drawings;
         4. Details of all components;
         5. Properly divided into sections with numerical or labelled dividers;
         6. Submitted in hardcover, loose-leaf binders in A4 size. Fixings are preferably ‘D’ ring and are of the snap-close type or lever arch type. The document identity appears on printed labels both the front cover and on the spine.
      5. The data pack includes an overall Contract Quality Plan, Completion Certificate, Handover Certificate and Safety Clearance Certificate for the entirety of the *works*.
      6. The *Contractor* submits one set of the Data Pack in draft for final review and acceptance by the *Project Manager.* Hand over cannot be done unless the Data Pack is accepted.
      7. After acceptance by the *Project Manager*, the *Contractor* submits three (3) sets of the final version of the Data Pack in hardcopy and three electronic copies (on discs).
      8. Relevant payments may be withheld by the *Project Manager* until the Data Pack is submitted by the *Contractor.*

## Health and Safety Risk Management

* + - 1. The *Contractor* complies with all relevant Eskom health and safety policies and procedures, with emphasis on the health and safety requirements contained in the Majuba Safety, Health & Environmental Specification (RA/RM/STD/01).
      2. The *Contractor* performs all work according to OHSAS 18001.
      3. The *Contractor* complies with the following:
         1. Eskom SHEQ Policy, 32-727
         2. SHE Requirements for Eskom Commercial Process, 32-726
         3. OHS Act 85 of 1993
         4. Disaster Management Act 57 of 2002
         5. Outbreak, Pandemic or Epidemic Disaster Response Plan, 240-100092892
         6. Guidelines on the management of vulnerable employees during COVID-19 Pandemic, 240-155326818
         7. Majuba Power Station COVID -19 Workplace Plan, MNGT/CMPLC/PLN/01
      4. The *Contractor’s* Safety Plan must be prepared and submitted to the *Employer’s* Safety Risk Officer for auditing and acceptance, as per the accepted programme and before any work can commence. The *Contractor’s* Safety Officer liaises directly with the *Employer’s* Safety Risk Officers regarding the Safety Plan and it is the *Contractor’s* responsibility to arrange the appointments with the Majuba Safety Risk Officers. The Safety Plan (one or more files) is the *Employer’s* requirement and remains the *Project Manager’s* property and is always available on site for inspection and handed over to the *Project Manager* upon completion. The *Contractor’s* Safety Plan file/s are kept neat, clean and up to date and audited on a monthly basis for the duration of the contract.
      5. Allof the *Contractor’s* staff undergoes Safety Induction, presented by MPS Risk Management Department.
      6. Compensation for Occupational Injuries and Diseases (COID) Certificate and Letter of Good Standing must be valid at all times and included in the Safety Plan and re-submitted to the *Project Manager* when renewed. These documents are also to be submitted to the Eskom vendor database by the *Contractor*, before they expire.
      7. The *Contractor* provides a monthly safety statistic report (worked man-hours) to the *Project Manager* on the first working day of each month for the duration of the contract. This report must indicate the *Contractor’s* actual man-hours worked on Site as summed from the daily diaries and attendance registers and is not a generic extrapolation of the daily working hours multiplied by the number of people.
      8. The *Contractor* is responsible for the provision of adequate and correct personal protective equipment (PPE) for the *Contractor’s* staff during the entire works. In addition to standard PPE such as safety boots, hard-hat, overalls, hearing protectors, safety glasses etc., the *Contractor* ensures that adequate PPE is worn for protection against chemicals while performing the *works*.
      9. The *Contractor* ensures that all personnel are fully conversant with the emergency procedures to be followed in case of an incident.
      10. The *Contractor* ensures cleaning of work areas and disposal of any scrap and waste materials generated is done continuously during the entire works.
      11. MPS is a national key point and therefore industrial action/strikes are not permitted. Strikes are to be managed by the *Contractor* at his/her own cost. The *Contractor* takes all necessary measures to prevent such action during the period of the contract.
      12. The *Contractor* has a dedicated Safety Officer on Site on a full time basis and present at all times when work is performed to monitor activities and ensure compliance to SHE procedures.

### Eskom Life Saving Rules

* + - 1. The *Contractor* Complies to the Eskom Life Saving rules as per the Eskom Life Saving Rules Directive, 240- 62196227.
      2. The *Employer* takes a "ZERO TOLERANCE" approach towards Safety. The violation of any safety rule while performing work for or on behalf of the *Employer* may result in the *Project Manager* terminating the *Contractor’s* obligation to perform work in terms of the contract with the *Employer*.

### Reporting of Incidents

* + - 1. The *Employer* follows an incident prevention policy; refer to 32-95, Environmental, Occupational Health and Safety Incident Management Procedure, which includes the investigation of all incidents involving personnel and property. This is done with the intention of introducing control measures to prevent a recurrence of the same incident. The *Contractor* is expected to co-operate fully to achieve this objective. The *Project Manager or Supervisor* must be informed immediately of any incident before the end of the shift.
      2. NOTE: The reporting of the incident to the *Project Manager* does not relieve the *Contractor* of his legal obligation to report incidents to the Department of Labour, or to keep records in terms of the Occupational Health and Safety Act, and Compensation for Occupational Injuries and Diseases Act.

### Work Stoppages

* + - 1. The *Employer* takes safety seriously and therefore, lessons learnt from other safety lost time incidents (LTI), if and when they take place, are shared with all *Contractor*s and employees on Site. These stoppages are compulsory and the *Contractor* cannot be allowed to claim additional compensation for these stoppages.
      2. If the *Contractor* experiences an LTI, the *Contractor* is expected to prepare a presentation and present it at a work stoppage that is arranged by the *Employer* within three working days. The presentation template is provided by the *Project Manager*.

### Vehicle and driver safety

* + - 1. All drivers, passengers and pedestrians must obey the vehicle safety requirements in terms of the National Road Traffic Act, Act No 93 of 1996, as amended, including other relevant provincial or local requirements.
      2. With effect from 31 May 2006, no Eskom employee or *Contractor* is allowed to transport passengers on the back of light delivery vehicles (LDV’s). It is a legal requirement to provide safe transportation of *Contractor* employees.

### Vehicle Standard minimum specifications

* + - 1. *Contractor* vehicles are to comply with the requirements specified in the Eskom Vehicle Safety Specification 32-345.

### Hot Work

* + - 1. When performing any hot work, the *Contractor* complies with the Generation Plant Safety Regulations, 36-681 and all local procedures.

### Confined Spaces

* + - 1. Confined Spaces are spaces such as Vessels, Mills, Culverts, Flues, Furnaces, Ducts, Pits, Sewers, Tunnels and Underground Chambers (Refer General Safety Regulation 5 of the OHS Act).
      2. All work in confined spaces complies with the requirements of the OHS Act and the *Employer’s* Plant Safety Regulations, 36-681.
      3. The *Contractor* assesses, and allows in the rates, for any access problems due to confined and restricted areas, existing structures and equipment, etc., which may be encountered.
      4. Any outage of sections of the plants required by the *Contractor* during this period is, as far as practicable, arranged to suit the convenience and requirements of the *Employer*.

### Working at Heights

* + - 1. The *Contractor* complies with Eskom Working at Heights procedure, 32-418 and all other relevant procedures and regulations.

### Lifting and Rigging

* + - 1. The *Contractor* complies with MPS Lifting and Rigging procedure, MAINT/MMD 103 75 and all other relevant procedures and regulations.

## Environmental constraints and management

* + 1. Majuba Power Station is ISO 14001; 2015 certified. The *Contractor* is required to ensure that all works are carried out as per the ISO 14001 standard and must comply with all policies and procedures including the following procedures:
       1. Majuba Waste Management Procedure: **ENV/GEN/WI/12**
       2. Safety, Health & Environmental Specification for *Contractor* s: **ENV/GEN/SPEEC/01**
       3. Emergency Preparedness and Response: **240-133087117**
       4. Eskom Smoking Policy: **32-1126**.

## Quality assurance requirements

### Quality Control

* + - 1. The *Contractor* performs all work according to ISO 9001. The *Contractor* complies with the Eskom’s quality requirements as specified in Standard 240-10565800 (previously QM85), Supplier Contract Quality Requirement’s Specification and all relevant quality requirements including those listed in section 5, Plant and Materials Standards and Workmanship.
      2. The *Contractor* ensures that a co-ordinated and formally documented management system is in place for the assurance of quality as specified in ISO 9001, Quality Management Systems Requirements.
      3. The *Contractor* has dedicated, full-time Quality Controllers on Site at all times when work is performed. The work may not take place unless the relevant QC is present on site. The *Contractor* uses a mechanical, civil and control and instrumentation Quality Controller for each engineering discipline being performed as part of the *work*s.
      4. The Employers reserves the right to audit the Contract, prior notification will be made.

### Quality Control Plans

* + - 1. The *Contractor* develops QCP’s for all activities to be performed during the *works*. The QCP’s are grouped by the *Contractor* according to activities performed on and off site e.g. manufacturing, welding activities and factory acceptance tests etc., as one QCP. Welding activities, Civil engineering works and mechanical works are in separate QCP’s however, they are all in line with the breakdown of Section 1.2, *Employer’s* Objectives and Purpose of the Works.
      2. These QCP’s are reviewed and accepted by the *Project Manager* before any activity to which they apply commences. The *Project Manager* requires approximately one week for reviewing and approving of QCP’s.
      3. The *Contractor* is responsible to verify that all information contained in Section 1.2, *Employer’s* Objectives and Purpose of the Works, corresponds with the equipment currently installed on the plant in order to ensure exact fit. Any discrepancies should be reported to the *Project Manager* and the specification amended or corrected.
      4. The QCP’s and therefore, the installation of all equipment is in alignment with the relevant manufacturer’s maintenance/installation manual.
      5. The *Project Manager* and the *Contractor* perform the QC according to the QCP documents supplied by the *Contractor* and accepted by the *Project Manager* for installation, calibration, loop checks to the operator stations and engineering station, cold commissioning and hot commissioning.
      6. The *Contractor* issues preliminary notification of hold, witness and verification points by giving 48 hours advance notice to the *Project Manager*.
      7. Where holding points exist on the manufacturing QCP’s, no manufacturing activity proceeds if the preceding activity on the manufacturing QCP was not approved by both the *Contractor* and *Employer’s* representatives.
      8. The *Project Manager* carries out quality inspections at his discretion and as per the pre-approved Quality Control Plan (QCP).

### Quality Control of Rubber Lining or Corrosion Protection

* + - 1. The *Contractor* is fully responsible for the control and execution of the successful application of lining systems. The *Contractor* should note that the *Employer* and others are not liable for any rectifications, additional costs, etc. as incurred by the *Contractor*, any of his Sub-Contractors or the paint/rubber liner manufacturer as a result of potential lining failures, re-work, additional work, etc. during the execution of the lining activities.
      2. The *Contractor* takes full responsibility for all aspects related to the organic lining system/rubber lining proposal and the successful application and quality thereof, including but not limited to the following aspects:
         1. Organic lining system/rubber lining selection
         2. Logistics
         3. Product chemical formulation control
         4. Application nuances and procedure
         5. Surface preparation and over-coating period details
         6. Any potential deviations/additional requirements to the product data sheet requirements
         7. Additional costs not envisaged or that arise in successfully applying the proposed lining/rubber lining systems to be borne by the *Contractor*.
      3. Eskom’s representative/s and/or third party/independent inspection authority have un-hindered access to witnessing all testing processes at both the paint/rubber manufacturing facility and paint/rubber applicators facility.
      4. The *Contractor* is responsible for quality assurance and control. Any approval, check, certificate, consent, examination, inspection, instruction, notice, proposal, request, test, or similar act by the *Employer’s* representatives (including the absence of disapproval) does not relieve the *Contractor* from any responsibility under the Contract, including responsibility for errors, omissions, discrepancies and non-compliances.
      5. The *Contractor* takes note of and responds to any comments made by the *Employer*’s representatives on the *Contractor’s* documents. However, the *Employer*’s representatives are not bound to check the *Contractor’s* documents for any errors, omissions, ambiguities or discrepancies or compliance with the requirements of the contract. The *Project* *Manager’s* receipt of, or review of, or comment on, the *Contractor’s* documents does not relieve the *Contractor* from responsibility for the *Contractor’s* errors or omissions or departure from the requirements of the contract and standards.
      6. In all cases, lining by coating or rubber lining is only performed by applicators with a rating of 3 as defined in section 4.4.2 (c) of the Standard.

### Supply of Genuine OEM Manufactured and Supported Parts

* + - 1. The *Contractor* ensures that the quality of parts or items purchased and supplied to the *Employer* meets or surpasses all standards stipulated herein and is relevant to the Power Station environment. Suitable motivation and evidence is supplied to the *Employer* in all proposals.
      2. The *Contractor* supplies items manufactured strictly by the OEM or authorised agents of the OEM only, and submits the necessary documentary proof thereof and relevant contact details, prior to procuring such items. The *Employer* verifies such information.
      3. The *Contractor* supplies items supplied strictly by the OEM or authorised dealers/agents/distributors of the OEM only, ensuring that continued after-sales services are offered. Documentary proof and relevant contact details is submitted prior to procuring such items and the *Employer* verifies such information.
      4. All items procured by the *Contractor* are not obsolete or flagged for obsolescence or discontinuation of support by the OEM or agent within five (5) years of purchase.
      5. All items procured by the *Contractor* bear a minimum warranty/guarantee period of fifty two (52) weeks against any defect arising, workmanship included. Any extended warranty/guarantee period offered which is greater than 52 weeks for any procured item is stated in writing along with the details of the claims process to be followed by the *Employer* after the issue of a Defects Certificate.

### Covering of System

* + - 1. All plant systems are kept covered by the *Contractor* except while work is being carried out at the point of opening. This is to prevent the introduction of foreign objects/material into the component or system during the work. The *Contractor* secures all covers and fasteners to ensure that they do not enter the systems. All foreign objects or materials entering by accident must be reported to the *Employer* and removed by the *Contractor* prior to closing the opening.

## Programming constraints

* + 1. The *Contractor* provides an initial programme with the tender submission, which is aligned to section C2.2 - The Activity Schedule.
    2. Within two weeks of the starting date, the *Contractor* provides a detailed, integrated programme to the *Project Manager* that incorporates all of the planned work activities to the lowest level, including activities of Subcontractor/s.
    3. All documentation submissions for review and acceptance stated in the Works Information are also included in the programme with time allowance of no less than one week made for review and acceptance, unless stated otherwise. All lead times for supply of items are also included.
    4. The programme is submitted electronically in MS Project format (2010 version or any other version, which allows compatibility for viewing and editing) and provides all activities and tasks with expected durations, resource allocations and start and completion dates.
    5. If the programme is suitable and agreed between the parties, the *Project Manager* accepts the programme otherwise changes are requested before re-submission. The first Accepted Programme becomes the baseline programme and subsequent, accepted changes are labelled as revisions in numerically ascending order.
    6. The Accepted Programme becomes a live document by which the *Contractor* controls all work packages and activities.
    7. The *Contractor* completes the *works* by the *completion date* specified in the *Contractor*’s Accepted Programme.
    8. Thereafter, the *Contractor* updates the programme at least on a weekly basis, including updating the actual dates and durations, while optimising remaining activities to ensure that the original planned *completion date* is met. The programme updates are submitted each Monday morning by 12:00. The *Project Manager* may request more frequent programme updates, including daily if required, at any time during the *works* and it is the Contractor’s responsibility to comply.
    9. Non-submission of the initial programme results in a twenty-five percent (25%) deduction from the first assessment amount due. This amount is only paid in the next assessment, dependent upon submission, review and acceptance of the programme.
    10. Non-compliance to the *completion date* on the programme results in claims for delay damagesby the *Project Manager.*
    11. Completion of any activity on the programme is achieved only upon sign-off of the relevant hold/witness/verification point by the *Project Manager.*

## Invoicing and payment

* + 1. The *Contractor* submits a detailed Forecast Rate of Invoicing (FRI) and thereafter, provides an update every four weeks from the contract start date. The FRI breakdown corresponds to section C2.2 - The Activity Schedule.
    2. The *Contractor* prepares and submits his assessment of work completed to the *Project Manager* on or before the *assessment day.* The *Contractor,* *Project Manager*, quantity surveyor, engineer and quality controller/s visually inspect the *works* to verify the actual progress. The *Project Manager* decides on the actual progress achieved that can be invoiced.
    3. A payment or assessment certificate is supplied with the service entry (SE) and goods receipt (GR) number/s to the *Contractor,* which is signed by both the *Project Manager* and the *Contractor.*
    4. Within one week of receiving a payment or assessment 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 *Project Manager’s* payment or assessment certificate.
    5. The *Contractor* addresses the tax invoice to Eskom Holdings SOC Ltd. and includes on each invoice the following information:
       - 1. Name and address of the *Contractor* and the *Project Manager*;
         2. The contract number and title;
         3. *Contractor’s* VAT registration number;
         4. The *Employer’s* VAT registration number 4740101508;
         5. Description of service provided for each item invoiced based on the Price List;
         6. The total amount invoiced excluding VAT, the VAT and the invoiced amount including VAT; (add other as required)
    6. The *Contractor* attaches the detailed payment or assessment certificate of the amount due to each tax invoice showing the Price for Work Done to Date for each item in the Price List for work, which he has completed.
    7. The invoices can be submitted using emails to [invoiceseskomlocal@eskom.co.za](mailto:invoiceseskomlocal@eskom.co.za)
    8. To facilitate payment, the *Contractor* must ensure the following:
       1. The Eskom order number is clearly indicated on your invoice together with the line number on the order being billed for.
       2. All electronic invoices must be sent in PDF format only.
       3. Each PDF file contains one invoice; or one debit note; or one credit note only as Eskom’s SAP System does not support more than one PDF being linked into the workflow at a time.
       4. The *Contractor’s* e-mail may contain more than one PDF file (e.g. 2 invoices on 2 separate PDF files in one e-mail)
       5. For foreign invoices, the *Contractor* is required to physically deliver hard copies of original documents to the respective documentation management centres even though the *Contractor* has e-mailed those invoices
       6. A PDF file that was created directly from a system meets the definition of the original document and is allowed (including saving documents from Excel to PDF, Word to PDF etc.)
       7. An Invoice that was printed and then scanned to PDF by the *Contractor* is not acceptable as this is not an original tax invoice by SARS definition but a copy.
       8. The following wording needs to appear on the invoice: “Your invoice is encrypted in order to comply with SARS requirements that invoices and statements sent electronically are tamperproof.”
       9. If Cost Price Adjustment (CPA) applies to the invoice, it is recommended that the *Contractor* issue a separate invoice for CPA to allow the rest of the invoice to be paid, while resolving the CPA issues, if required.
       10. The *Contractor* does not require a goods receipt (GR) number before submitting the invoices. When the GR number is however received, the *Contractor* can send the GR number to the FSS contact centre at FSS@eskom.co.za or 011 800 5060.
       11. All queries and follow-ups on invoice payments are made by contacting the FSS Contact Centre: Tel: 011 800 5060.
    9. Payment is made within 30 days or 14 days after receipt of an acceptable invoice at the address stated in the order and the acceptance of the goods by Eskom. Payments are made on Tuesdays and Thursdays only.
    10. If CPA is applicable, the *Project Manager* and the *Contractor* must confirm the increase/decrease with the QS department BEFORE the revised prices are stated on the invoice. The QS and *Project Manager* must confirm the escalation with the Financial Department before it may be implemented.
    11. It is important that the value stated on the Invoice must be the same as the value stated on the order. If the Invoice value is different from the order value, payment of the invoice may be delayed. If there are any discrepancies on the invoice, it must be rectified with the *Project Manager* BEFORE it is submitted for payment.

## Contract change management

* + - 1. Any item that affects the prices or has the potential to do so, is immediately communicated to the *Project Manager* or the *Contractor* via an early warning and/or followed by a claim for compensation event with a quotation.
      2. After consideration, the *Project Manager* may agree and the *Contractor* may implement the compensation event accordingly. Not all claims are necessarily compensation events nor do quotes have to be accepted unchanged since the *Project Manager* performs an evaluation and approves justifiable costs only.
      3. All invoices or documentary proof, calculations, invoices etc. for a compensation event claim are submitted to the *Project Manager* for assessment purposes.

## Training workshops and technology transfer

* + - 1. The *Contractor* provides guidance and basic training to the *Employer* on all newly installed components.
      2. Proof of training provided to the *Employer’s* staff to be submitted to the *Project Manager*, in order for final retention release.

# Procurement

## People

### Minimum requirements of people employed on the Site

* + - 1. The *Contractor* provides competent personnel with the relevant post qualification experience for the implementation of all of the *works*. All CV’s with relevant qualifications and detailed experience are submitted to the *Project Manager* within four weeks of the start date. All foreign qualifications are certified by SAQA and proof of certification is supplied.
      2. The *Contractor* appoints either a Contract Manager or a Project Manager who possesses documented competencies to manage the duties related to the NEC contract and project management. This person serves as the direct liaison for the *Employer*’s *Project Manager* and also has the authority to make decisions and instruct all other *Contractor’s* personnel, as and when required.
      3. The *Contractor’s* Contract Manager or Project Manager must have a technical National Diploma (e.g. Construction, Industrial, Civil, Mechanical, Electrical or C&I) as a minimum and have completed either a contract or project management qualification or possess proof of attending appropriate training e.g. NEC ECC course. Two years related on-job project management or management experience is required in a technical discipline. The Contract Manager or Project Manager is defined as the *Contractor’s* key person.
      4. The *Contractor’s* Site Manager must as a minimum, have a technical National Diploma (e.g. Construction, Industrial, Civil, Mechanical, Electrical or C&I). Qualifications and training in contracts management and NEC3 is advantageous. Two years related on-job project management or management experience is required in one of the following technical disciplines: Construction, Industrial, Civil, Mechanical, Electrical or C&I. The Site Manager is defined as the *Contractor’s* key person.
      5. Engineer(s) responsible for reviewing, approving and signing off the detailed design package, must have the appropriate undergraduate engineering degree and professional registration with the Engineering Council of South Africa. Engineers are defined as the *Contractor’s* key persons.
      6. Supervisors are qualified and in possession of a valid National Diploma in a technical discipline (Mechanical/Industrial) and must have undergone supervisory training from a reputable institution. Two years of related experience is required. Supervisors must be knowledgeable about the conditions and Scope of Work contained in this contract and capable of overseeing the execution of the Scope of Work. Supervisors are defined as the *Contractor’s* key persons.
      7. Coating inspector(s) (internal and external corrosion protection) must be qualified to SAQCC (Corrosion Protection) and either Coating Inspectors Level 1 (shop inspections) or Coating Inspectors Level 2 (site inspections) or NACE Coating Inspection Programme (CIP) or any other equivalent qualification.
      8. Minimum Qualification Requirements for *Contractor* C&I Maintenance Staff: Grade 12 and N6 (C&I Technical) and Industrial Instrumentation Trade Test with 5 years C&I related experience OR Grade 12 and National Diploma (Engineering) in Light Current or Control and Instrumentation with 3 years C&I related experience.
      9. Minimum Qualification Requirements for *Contractor* Mechanical Maintenance Staff: Grade 12 and N3 (Mechanical Engineering) and Mechanical Trade Test with 5 years Mechanical related experience OR Grade 12 and N4 (Mechanical Engineering) and Mechanical Trade Test with 3 years Mechanical related experience.
      10. Minimum Qualification Requirements for *Contractor* Civil Maintenance Staff: Grade 12 and Diploma in Civil Engineering NQF 5 or Higher OR Trade Tested on Building and Construction and familiar with SANS 1200 with 3 years or more Civil related experience.
      11. Safety officers have a minimum of SAMTRAC or equivalent qualification and incident investigation training. Two years of related experience is required.
      12. All Quality Controllers for the various disciplines are qualified and in possession of a relevant, valid diploma (e.g. Mechanical, Civil, C&I etc.) with at least 3 years related experience OR have a valid trade test certificate (e.g. fitter, instrument technician/mechanician etc.) with 6 years related experience.
      13. Welding inspectors have at least one of the following qualifications as a minimum refer to 7.5 of 240-106628253 (WRB):
          1. SAIW Welding and Fabrication Inspector Level 2
          2. IIW International Welding Inspector: Comprehensive (IWI- C)
          3. IIW International Welding Inspector: Standard (IWI- S)
      14. Welding Supervisors have at least one of the following qualifications as a minimum, refer to 7.4 of 240-106628253 (WRB):
          1. International welding specialist (IWS) in line with IIW document IAB-252R2-14 or
          2. International welding practitioner (IWP) in line with IIW document IAB-252R2-14.
      15. Welding Supervisors are defined as the *Contractor’s* key persons.
      16. Welders are all qualified according to BS EN ISO 9606 and be internationally qualified, refer to 7.2.2 of 240-106628253 (WRB). The *Contractor* ensures that proof of qualifications of the welders that perform the work is provided to the *Project Manager* at least three weeks prior to any manufacturing work starting.

#### Table Summarising People Requirements:

| **Designation** | **Academic Qualification** | **Minimum Level of Related Experience** | **Minimum QTY of people** |
| --- | --- | --- | --- |
| Project / Contract Manager | Technical National Diploma (e.g. Construction, Civil, Industrial, Mechanical, Electrical or C&I) and management qualification (e.g. project management). NEC competency certificate | 2 years | 1 |
| Site Manager | Technical National Diploma (e.g. Construction, Civil, Industrial, Mechanical, Electrical or C&I). | 2 years | 1 |
| Engineers | Appropriate undergraduate engineering degree and professional registration with the Engineering Council of South Africa | 2 years | 1 |
| Supervisor | Technical Diploma in a technical discipline (Mechanical/Industrial) and Supervisory training | 2 years | 2 |
| Quality co-ordinator/controller Mechanical | * Technical diploma (Mechanical /Industrial) OR * N4 and Trade test | 3 years OR  6 years | 1 |
| Quality co-ordinator/controller C&I/EMD | * Technical qualification (C&I) OR * Valid trade test | 3 years OR  6 years | 1 |
| Quality co-ordinator/controller Civil | * Technical qualification (Civil) OR * Valid trade test | 3 years or  6 years | 1 |
| Safety Officer | SAMTRAC and Incident investigation | 2 years | 1 |
| Mechanical Artisans | * Grade 12 or N3 and a Trade Test OR * N4 and Trade test | 5 years (N3) or  3 years (N4) |  |
| Civil Artisans | Grade 12 & Diploma in Civil Engineering (NQF 5) | 3 years |  |
| C&I staff | * Grade 12 and N6 (C&I Technical) and Trade Test OR * National Diploma (Engineering) Light Current or Control and Instrumentation | 5 years N6 or  3 years N Dip |  |
| Civil Maintenance Staff | * Grade 12 and a Diploma in Civil Engineering NQF 5 or Higher OR * Trade Tested on Building and Construction * AND familiar with SANS 1200 | 3 years | 1 |
| Welding Inspectors | * SAIW Welding and Fabrication Inspector Level 2 OR * IIW International Welding Inspector: Comprehensive (IWI- C) OR * IIW International Welding Inspector: Standard (IWI- S) | 2 years | 1 |
| Welding Supervisors | * International welding specialist (IWS) in line with IIW document IAB-252R2-14 OR * International welding practitioner (IWP) in line with IIW document IAB-252R2-14. | 2 year | 1 |
| Welders | Internationally qualified to BS EN ISO 9606 | 1 year | 1 |
| Coating inspector(s) (internal and external corrosion protection) | * Qualified to SAQCC (Corrosion Protection) and either one of the following: * Coating Inspectors’ Level 1 (shop inspections) OR * Coating Inspectors Level 2 (site inspections) OR * NACE Coating Inspection Programme (CIP) OR * An equivalent qualification | 2 years | 1 |

Where the minimum quantities of people are not specified in the table above, the *Contractor* enters the planned quantities into a similar table and submits to the *Project Manager*.

### Supplier Development, Localisation and Initiatives (SDL&I) Requirements

In terms of SDL&I, Local means from within the borders of South Africa unless specified otherwise.

#### Recruitment of General, Semi-Skilled, and Skilled Labour

* + - * 1. The *Contractor’s* **Permanent Core** **Team,** including general, semi-skilled, and skilled labour is only allowed on Site based on the Organogram provided to the *Project Manager* to establish the numbers before this team comes to Site. The *Contractor* provides proof of permanent employment prior to contract placement, with the *Contractor* or Subcontractor to the *Project Manager* for all Core Team staff members.
        2. The *Contractor* recruits all additional new recruits, as a minimum of general labour, semi-skilled labour and where possible skilled labour from Dr Pixley Ka Seme local municipality, using the recruitment process, prescribed below:
  + Job Advertisements are submitted to the *Project Manager* for acceptance from the Majuba Recruitment Sub-Committee.
  + Approved job advertisements for positions are placed in the local newspaper: “The Recorder” by the *Contractor* while the *Employer* simultaneously advertises the vacancies at all local municipal offices within Dr Pixley Ka Seme region.
  + Members of the Recruitment Sub-Committee verifies CV’s collected (by the *Contractor*) for purposes of ensuring that applicants are indeed from the local areas.
  + The *Contractor* selects and forwards the names back to the Majuba Recruitment Sub-Committee for final confirmation and later verification during site induction.
  + In an event that new recruits are not from the defined Dr Pixley Ka Seme municipality, the *Contractor* needs to provide proof that the local municipality could not provide such individuals, i.e. proof of the above process not being able to provide the labour.
    - * 1. The *Contractor* may not work outside of the above process.

#### Supplier Development, Localisation and Initiatives Plan and Reporting

* + - * 1. **In addition** to recruiting all new recruits as per the process described in section 3.1.2.1, Recruitment of General, Semi-Skilled, and Skilled Labour above, the *Contractor* complies with the SDL&I requirements as set out in the SDL&I report (part of tender returnable).
        2. To comply with the SDL&I requirements, the *Contractor* is required to;
  + Provide a high-level SDL&I implementation plan, which stretches for the duration of the contract within one month after the contract is awarded.
  + As part of this plan, the *Contractor* submits proposals to the *Project Manager* for acceptance on how employment and training of local labour are done - refer to SDL&I Matrix.
  + As part of the plan, the *Contractor* submits a Human Resource Plan indicating the number of new jobs that would be created or retained due to this project.
  + Provide an explanation and action plan for deviation from the proposed plan if and where applicable.
  + The candidates for skills development would be sourced from Dr Pixley Ka Seme first, then Gert Sibande District, then Mpumalanga Province, before the rest of RSA is considered.
  + The candidates may be developed directly by the supplier, through the suppliers’ own supply network or through the SETA accredited training providers.
  + Candidates are either currently unemployed graduates from FET (Further Education and Training) colleges, universities or matriculants. These candidates must also be representative of the population demographics of the Mpumalanga Province.
  + The *Contractor* updates the *Project Manager* as well as the Department of Labour, in the event that there is a change in the staff compliment e.g. dismissal, resignation, etc.
  + The *Contractor* submits an updated, monthly SDL&I feedback report and monthly job statistics on the 1st day of each month, using the reporting template that is provided by the *Project Manager*.

#### Transportation and Accommodation

* + - * 1. The *Contractor* uses transportation sourced from the Dr Pixley Ka Seme Municipality local taxi association. If company transport is utilised, the *Contractor* submits proof to the *Project Manager* that such vehicle is owned by the *Contractor*.
        2. Contact details of the Chairpersons of the different associations are confirmed with the *Project Manager* after contract award. Current contact information is as follows:

|  |  |  |
| --- | --- | --- |
| **Area** | **Chairperson** | **Contact Number** |
| Amersfoort Taxi Association (1) | Mr Gama | 066 129 8208 |
| Amersfoort Local & Long distance Association (2) | Mr T Nzimande | 082 847 3567 |
| Daggakraal Taxi Association | Mr MC Kubheka | 079 381 8594  071 800 2775 |
| Volksrust, Perdekop, Wakkerstroom | Mr Dludlu  Mr Mdluli | 082 839 1480  073 997 2705 |

* + Amersfoort has two recognised Associations and thus both Associations are called and used when more than one taxi is required from Amersfoort. However, Daggakraal has its own Association and Volksrust, Perdekop and Wakkerstroom areas fall under one Association.
    - * 1. The *Contractor* complies with Eskom Vehicle Safety Specification, 32-345, whether using company or taxi vehicles, as applicable for *Contractor*s.
        2. The *Contractor* provides suitable transportation for all employees to and from Site and also on Site, when necessary.
        3. The *Contractor* provides delivery vehicles (trucks or LDV’s) to deliver/remove all equipment and materials to/from Site. LDV’s are also required to move materials on Site, when required.
        4. The *Contractor* ensures that all levels of permanently employed personnel receive accommodation at local guesthouses or lodges and that no employee is asked to source their own accommodation. No accommodation allowances are paid in lieu of guesthouse or lodge accommodation. Locally employed personnel neither receive accommodation nor shall the *Employer* pay for their accommodation. Monthly invoices are submitted to the *Project Manager* for assessment purposes.

#### Support of local Small, Micro and Medium Enterprises (SMME)

* + - * 1. The *Contractor* supports local SMME by purchasing equipment, tools and materials locally where such equipment, tools and materials are available.
        2. The *Contractor* supplies a list of all suppliers used for the procurement of equipment, tools and materials and supplies their B-BBEEE certificates upon request.
        3. Where equipment, tools and materials are not locally available, the *Contractor* provides proof thereof and the proposed alternative supplier(s).

## Subcontracting

### Preferred Subcontractors

* + - 1. The *Contractor* must inform the *Project Manager* when intending to subcontract any part of the works from the *Employer*’s Works Information. Such notice is given as soon as the *Contractor* becomes aware of the need to subcontract.
      2. The *Contractor* may subcontract by using NEC or other types of contract.
      3. The *Contractor* submits the proposed contract data for each subcontractor for acceptance to the *Project Manager*.
      4. If the *Contractor* subcontracts work, he is responsible for providing the Works as if he had not subcontracted. This contract applies as if a Subcontractor’s employees and equipment was the *Contractor’s*. Delays by the Subcontractor are treated as delays by the *Contractor* therefore, the Contractor is fully responsible for Subcontracted services.
      5. All Subcontractors need to be accepted by the *Project Manager* before the Subcontractor may be allocated work by the *Contractor* or be brought to work on Site. Therefore, all relevant information including police clearance, proven company expertise (certification), past experience, references and CV’s and qualifications of skilled workers are required.
      6. The *Contractor* submits theSubcontract agreement/contract documentation and an evaluation report of Subcontract tenders to the *Project Manager*.
      7. The *Contractor* only employs competent Subcontractors.
      8. Where the Subcontractor is required to do physical work on Site, the *Contractor* provides details of the experiences of the mentioned Subcontractor as well as a list of references involving work of a similar nature.
      9. The *Contractor* indicates on a table as shown below, the names of any Subcontractors (when known) 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.
      10. Notwithstanding the inclusion of a Subcontractor name below, the *Contractor* obtains the written acceptance of the *Project Manager* prior to the employment of such Subcontractor.

| **Subcontractor** | **Description of work** | **Approximate value** |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |

### Limitations on Subcontracting

* + - 1. The terms and conditions of employment of *Contractor*s and Subcontractors must be made available to the *Project Manager* before any work may commence.
      2. The *Contractor* and Subcontractors comply fully with all local and statutory labour laws (LRA, BCEA, UIF etc.) and agreements and promptly attend to any labour grievances that may arise. The *Contractor* and Subcontractors do not remunerate employees at less than the proclaimed statutory wage (Minimum Wage Act).
      3. The contract does not create any renewal expectations on either party as referred to in section 186 ”B” of the Labour Relations Act.

### Attendance of Subcontractors

* + - 1. It is the *Contractor’s* responsibility to ensure that the Subcontractor(s) is present on site when required and completes and supplies a daily Site diary, which includes details such as the labour resources available, starting time, ending time, equipment and materials used, weather conditions, interruptions etc. Refer to section 2.3.3.1, for the minimum requirements for daily diaries.
      2. The *Contractor* ensures that the diary is submitted by the Subcontractor to the *Project Manager* daily for checking, commenting and signing-off and a copy is supplied. If the daily diary is not signed off by each worker then a separate daily attendance register is supplied.

## Plant and Materials

### Quality

* + - 1. The *Contractor* ensures that all equipment, tools and material that the *Contractor or* Subcontractor uses to execute the works, complies with the SABS and other stated standards.
      2. All plant and materials sourced and supplied for the installation are new and are free from defects. Reconditioned or refurbished plant and/or materials are NOT regarded as new under any circumstances and may NOT be utilised.
      3. The *Contractor* does not use plant and materials, which are generally recognised as being unsuitable or otherwise unsuitable for the purpose for which they are intended.
      4. Only components of high reliability are utilised, with a proven operating history, to enable the plant to achieve the required reliability and availability. Plant and material design, engineering and manufacture are in accordance with the best practice applicable to high-grade products of the type to be furnished, to ensure the efficiency and reliability of the *works* and the strength and suitability of the various parts for the *works.*
      5. Plant and materials withstand ambient conditions and the variations of temperature arising under working conditions without distortion, deterioration or undue strains in any part.
      6. All parts are made accurately, and where practicable, to standard gauges to facilitate replacement and repairs. Like parts are interchangeable.
      7. No repair of defective plant and materials may be permitted without the *Project Manager’s* acceptance and any such repair, if accepted, is carried out to the satisfaction of the *Project Manager*.

### Plant and Materials provided “free issue” by the *Employer*

* + - 1. The *Project Manager* supplies and installs scaffolding and solid barricading (signage excluded); refer to section 4.1.9.1, Scaffolding, for requirements regarding the installation of scaffolding.

### *Contractor’s* Procurement of Plant and Materials

* + - 1. Absolutely no changes to the current plant configuration are allowed unless authorised by the *Employer.*
      2. It is mandatory that plant, equipment and materials be procured in accordance with the specifications listed in the Works Information. Compliance to providing items from the relevant OEM’s is essential.
      3. The *Contractor* only procures plant, equipment and materials as specified in the Works Information. Any accepted change of specifications is notified in writing by the *Project Manager* through the issue of an instruction.
      4. Should any plant, equipment or material specified in the Works Information not be available on the market due to obsolescence or other reason, the *Contractor* recommends a suitable alternative. All alternative items are accepted by the *Project Manager* and an instruction issued by the *Project Manager* before procurement by the *Contractor*.
      5. The procurement schedule is clearly shown and integrated into the *Contractor’s* acceptedproject programme ensuring delivery of equipment to site in advance to the installation activity.
      6. All items procured and stored at the *Contractor’s* premises or the *Employer’s* premises are stored in accordance with the manufacturer’s requirements or material specifications.
      7. The *Contractor* ensures that plant and materials procured carry a minimum of 52 weeks warranty or guarantee period.
      8. Plant and materials used for the *works* are to bear no labelling other than the plant coding specified by the *Project Manager*.

### Delivery to Site

* + - 1. Delivery, loading, unloading, transporting, rigging, setting out and storage remain the *Contractor’s* responsibility to perform safely and timeously by competent personnel.
      2. The *Contractor* advises the *Project Manager* in advance of all shipments and co-ordinates with the *Project Manager* the arrival, off-loading and release of such. The *Contractor* promptly unloads shipments and promptly releases carrier equipment from Site.
      3. All material deliveries are to be performed via the Majuba Stores Department. Delivery notes are to be delivered with the materials to the Majuba Stores Department. Arrangements are made with the *Project Manager* at least 24 hours in advance to arrange for quality inspections of all materials. A copy of the signed delivery note is provided to the *Project Manager* upon delivery.
      4. The *Contractor* safely and correctly handles, secures, transports and delivers all plant and materials.
      5. The *Contractor* marks or tags containers, crates, boxes containing plant and materials for the project, using the contract number and project description. Packaging materials remain the *Employer*’s property and cannot be removed from site.
      6. The *Contractor* submits the relevant data sheets and material certificates of all equipment on delivery to Site for acceptance by the *Project Manager*.

## Tests and inspections before delivery

### General

* + - 1. All off-site tests (tests before delivery) must conform to all requirements as stated in PD5500.
      2. The *Project Manager* reserves the right to appoint a representative or representatives to inspect all parts during manufacturing and testing and to be present at any of the tests specified in this *works*.
      3. The *Employer’s* representative(s) and/or third-party/independent inspection authority have unhindered access to witnessing all manufacturing and testing processes at the manufacturing facility.
      4. All off-site tests performed during and after manufacturing and before delivery to Site*,* must conform to the requirements as stated in Section 1.2, *Employer’s* Objectives and Purpose of the Works, of this contract and as stipulated in the European Standards EN 10025:2004, EN 1092-1 and EN 14015:2004.
      5. All off-site tests are conducted by the *Contractor* and witnessed by the *Employer’s* representative(s) and/or third-party/independent inspection authority.
      6. Where holding points exist on the manufacturing QCP’s, no manufacturing activity proceeds if the preceding activity on the manufacturing QCP was not approved by both the *Contractor* and *Employer’s* representatives.
      7. The *Project Manager* carries out quality inspections at his discretion and as per the pre-approved Quality Control Plan (QCP).
      8. Such tests as may be required by the *Project Manager* are carried out by the *Contractor* during or after manufacturing to prove compliance with the specification independently of any test, which may have been carried out at the manufacturer’s facility.
      9. The *Contractor* provides a test certificate for each test required by the code. Specimen tests used by the *Contractor* are also submitted.
      10. The *Contractor* provides current calibration certificates for all equipment used during manufacturing and testing as part of the Data Pack.
      11. The *Contractor* is responsible for quality assurance and control during manufacturing and testing. Any acceptance, check, certificate, consent, examination, inspection, instruction, notice, proposal, request, test, or similar act by the *Employer* (including the absence of acceptance) does not relieve the *Contractor* from any responsibility under the *Contract*, including responsibility for errors, omissions, discrepancies and non-compliances.
      12. The *Contractor* takes note of and responds to any comments made by the *Employer* on the *Contractor’s* manufacturing documents. However, the *Project Manager* is not bound to check the *Contractor’s* manufacturing documents for any errors, omissions, ambiguities or discrepancies or compliance with the requirements of the Contract. The *Project Manager’s* receipt of, or review of, or comment on, the *Contractor’s* manufacturing documents does not relieve the *Contractor* from responsibility for the *Contractor’s* errors or omissions or departure from the requirements of the standard.

### 

### Manufacturing

* + - 1. The *Contractor* manufactures, fabricates and assembles all relevant equipment in accordance with the *Employer’s* standards and specifications as listed in section 5, Plant and Materials Standards and Workmanship
      2. The *Contractor* tests all the shop fabricated equipment required for the completion of the *works* and submits the relevant technical datasheets, material certificates, conformance certificates and manufacturer inspection and test reports of all equipment as an electronic copy to the *Project Manager* for acceptance prior to dispatch to Site.
      3. The *Project Manager* approves the *Contractor’s* off-site testing plan. The *Employer* decides which tests are witnessed by a representative of the *Employer* and communicates it to the *Contractor.*
      4. The *Project Manager* reserves the right to request the manufacturer’s detailed drawings relating to the proposed materials, heat treatment, machining and surface roughness tolerances in order to perform a design check.

### Factory Acceptance and Testing

* + - 1. The *Contractor* submits the relevant technical datasheets, material certificates, conformance certificates, manufacturer inspection, and test reports of all equipment in soft copy to the *Project Manager* for acceptance prior to dispatch to site.
      2. The *Contractor* ensures that all equipment undergoes detailed quality inspections prior to dispatch to site. The detailed quality inspections ensure that the equipment corresponds with both the manufacturer’s technical datasheets and contractual requirements.
      3. The following checks during inspections are conducted by the *Contractor* as a minimum:
         1. Visual inspections to verify the mechanical and/or physical integrity of the equipment as well as specifications of the major and/or active components.
         2. For each valve, the verification of the model name and number, pressure rating, temperature rating, material of construction, flange/thread size, face to face length, bore size, pitch circle diameter, “Open” and “Close” markings and directions, data plate, etc.
         3. For all pipes, the verification of the fabrication standard, grade, heat treatment used, non-destructive tests performed (liquid penetrant testing, radiographic testing, corrosion testing), pressure test performed, surface finishes, traceability markings, etc.
         4. For all C&I equipment, the verification of the model name and number, power supply requirements, measurement ranges, output variables, output units, current output, accuracy under the operating conditions, integral displays, protection standards, data plates, etc.
         5. For all other equipment not mentioned above, the verification of the dimensions, material of construction, performance capabilities, data plates, etc.

### Inspection and Testing on Site

* + - 1. Pre-removal inspections are to be conducted in conjunction with the *Employer* to verify the condition of the existing equipment. Appropriate check-sheets are developed for the activity by the *Contractor.* The *Project Manager* accepts the format of test certificates and check-sheets before construction.
      2. After installation and prior to commissioning, the *Contractor* and relevant *Employer’s* representatives carry out final quality inspections and the acceptance tests as listed in the Works Information to ensure the correct function of the equipment, safety of *works* and personnel, and to determine compliance with contractual specifications.
      3. Post-inspection check-sheets are developed by the *Contractor* with the Pre-inspection sheets being used as a baseline for the activity.
      4. The *Contractor* supplies a programme of all tests that are to be carried out in preparation for commissioning and indicates the details of proposed tests he proposes to perform and the manner in which the results of tests are documented.
      5. The *Contractor* provides current calibration certificates for all test equipment, which are used to perform testing, to the *Project Manager*.
      6. The *Contractor* provides test certificates for all tests performed (pressure test, NDT, calibration reports, etc.), final inspection reports and safety clearance certificates for all components installed to the *Project Manager* for acceptance.
      7. Where the results of the performance tests performed don’t correlate with expected results (concentration values, flow rates, pressures etc.) and/or the control functions as per the operating philosophy do not meet the specifications guaranteed, the *Contractor*, at his own expense, carries out all necessary adjustments and modifications to the *works* required to obtain the stated tolerances required, forming part of this scope of work.
      8. Where inspections indicate that the working of an instrument is likely to be suspect, the instrument is adjusted, repaired or replaced by the *Contractor* to the *Employer’s* acceptance and a full check to verify the operation and correct calibration is carried out.
      9. The *Employer* has the right to inspect the system during erection and to be present and witness any test.

# Construction

## Temporary works, Site services & construction constraints

### *Employer’s* Site entry and security control, permits, and Site regulations

* + - 1. Site entry is only approved once the following is adhered to:
         1. All *Contractor* personnel and Subcontractors must have Police clearance certificates, which must be included in the Safety Plan and also handed to the *Project Manager* at least 2 weeks before commencement of work. The *Project Manager* reserves the right to refuse entry to all persons whose criminal records indicate that their presence on Site might create an unsafe and insecure environment to Majuba Power Station. The following website can be used to guide the process:

<https://certificatesrsa.co.za/police-clearance-certificate-south-africa-zimbabwe/>

* + - * 1. The *Contractor* and Subcontractors’ Safety Plan are approved by the *Employer’s* Safety department.
        2. Site-specific induction is done by all personnel.
        3. Refer to the General Works information.
      1. Permits, Plant Safety Regulations, Authorised Supervisor Training and Duties

1. After the contract *start date* and prior to the planned access date, the *Contractor* nominates and sends at least three (3) competent supervisors or other competent personnel to attend training at the *Employer’s* premises to become a Responsible Person (RP), which is a requirement for the *Employer’s* Plant Safety Regulations (PSR). Additionally, the *Contractor* may send other personnel to be trained as an Authorised Supervisor (AS) (shorter course). The *Contractor’s* Site Manager may also attend one of the courses in order to become acquainted with PSR but this cost is for the *Contractor’s* own account. The Site Manager is not allowed to act as an RP or AS during work execution due to other key duties and activities to be performed away from the work areas i.e. conflict of duties.
   * + - 1. Upon getting plant access, the *Contractor* verifies that the respective plant area being worked on, is completely drained (as far as practical), isolated, cleaned and is safe to work on, by means of the issue and acceptance of a Permit to Work (PTW) by the *Contractor’*s Responsible Person (RP) and that all workers are signed on to the RP’s Worker’s Register. The *Contractor’*sRP assumes all full-time supervision duties or may elect to sign over supervision duties to the *Contractor’*s Authorised Supervisor (AS) and both keep a Worker’s Register.
         2. The course dates are scheduled as follows but are subject to change. The *Contractor* requests the latest schedule from the *Project Manager* after contract award:

Table 1: RP and AS training dates

|  |  |  |  |
| --- | --- | --- | --- |
| **Training Intervention** |  | **Start Date** | **End Date** |
| Full Plant Safety Regulations’ Program |  | TBA |  |
| PSR For the Authorised Supervisors’ Program |  |  |  |
| ORHVS 2 and 3 Program |  |  |  |
| PSR / ORHVS Re-Authorisation Program |  |  |  |
|  | |  |  |
| ORHVS 2 and 3 Program |  | TBA |  |
| PSR For the Authorised Supervisors’ Program |  |  |  |
| Full Plant Safety Regulations’ Program |  |  |  |
| PSR / ORHVS Re-Authorisation Program |  |  |  |

* + - * 1. The *Contractor* sends the personnel to the first available course held for the duration indicated, in which the incumbents receive the theoretical training and write an exam for which 80% is required to pass.
        2. Additional time is required thereafter while on Site for plant orientation, practical training and an interview/question session at the Majuba PSR Committee before the persons may become authorised in writing. The theoretical training, plant orientation, practical training and the course is given by the *Employer*.
        3. The *Contractor* makes provision for all relevant costs including the training, accommodation, living-out expenses, meals and travelling for the three personnel for the theoretical and practical training components.
        4. If the *Contractor* personnel fail on the first attempt to pass the exam or interview, the *Contractor* personnel is allowed to write or interviewed for a second attempt. **All related cost for the second and possible following attempts to pass the examination or interview are for the *Contractor*’s own account and is not reimbursed by the *Employer*.**
        5. During the works, at least one RP or AS must be in full-time attendance to supervise the work on Site at all times and cannot be allowed to perform any other work, while supervising others. Training and authorising at least three RP’s and additional AS’s ensures that the *Contractor* has sufficient supervisory staff although more personnel may be trained. If this supervision requirement is not met, the work is immediately stopped and the *Contractor’s* delay affects the programme, which may result in delay damages being claimed by the *Project Manager* if the *completion date* on the Accepted Programme is not met.
        6. All the necessary isolations are made by the *Employer’s* personnel prior to the commencement of the *works* to ensure that it is safe to work in and around the Site. The *Contractor*’sRP verifies on a daily basis that the PTW is in force and all workers sign onto the RP’s workers register. When both RP and AS are used, the AS signs on the RP’s workers register before all other workers sign onto the AS’s workers register.

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

* + - 1. The *Contractor* only uses established roads and walkways.
      2. The *Contractor* does not cross any barricades except where access was granted by the *Project Manager*.

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

#### Hours of work

* + - * 1. Majuba Power Station working times are:
  + Monday to Thursday 07:30 - 16:45
  + Fridays 07:30 - 12:30
    - * 1. The *Contractor* must, as a minimum, schedule work according to these times unless restrictions and/or interfaces with other parties necessitate alternative times.
        2. The *Contractor* may request to work alternative times and do so only upon acceptance by the *Project Manager*, while ensuring that a minimum of forty hours per week are worked per week.
        3. The *Contractor* may work additional hours over weekdays and over weekends by agreement with the *Project Manager*, such as when plant availability is limited due to production requirements/risks or more especially, when the *Contractor*’s progress is behind schedule. The *Contractor* ensures that any overtime is managed according to legislation by the Department of Labour. The *Project Manager* does not pay for overtime worked by the *Contractor* in order to Provide the Works.

### Health and safety facilities on Site

* + - 1. Minor first aid requirements are provided for by the *Contractor.* Should these prove to be inadequate, for example in the event of a major injury, the *Employer’s* Medical Centre and facilities are available for use. Emergency services can be reached by dialling 9222 from any site phone. Alternatively, one of the following numbers can be dialled:
         1. Medical centre 017 799 2138
         2. Fire and rescue 017 799 3192
         3. Electrical Operating Desk (EOD) 017 799 3803 (all hours)
      2. The *Employer* is entitled however to recover the costs incurred in respect thereof from the *Contractor or* Subcontractor.
      3. The *Employer’s* EmergencyMedical Services for after-hours is available for major injuries and life-threatening injuries, including ambulance transportation.

### Title to material from excavation and demolition

* + - 1. The *Contractor* removes the old vessels from Site and disposes of them according to the *Employer’s* waste management procedure.
      2. All other scrap metal is disposed of at the *Employer’s* steel waste bins on site.
      3. All material from excavation or demolition remains the property of the *Employer* and is disposed of by the *Contractor* either on or off site as per the *Project Manager’s* instructions.
      4. All material included in the *Project Manager’s* assessment or stated in the Works Information, whether used or unused, remains the property of the *Employer*.
      5. Any materials on site, which are the *Contractor’s* property may only be removed after agreed by the *Project Manager.*

### Co-operating with and obtaining acceptance of others

* + - 1. Other *Contractor*s may be working in the same area as the work of this contract. In this regard, the *Contractor* co-ordinates his work with the *Project Manager* to maintain harmonious working conditions on Site.
      2. During the progress of the works, the *Contractor* provides access to others who also execute work in the same area, on an “as and when required” basis.
      3. The *Contractor* makes his own assessment of the problems and difficulties, which may be encountered for providing access to and interfacing with others, this includes access difficulties experienced during construction or commissioning phase.

### Publicity and progress photographs

* + - 1. The taking of photographs in the Power Station including the project *works* is restricted and subject to approval of a formal request to take photographs.
      2. For the purpose of the progress reporting requirements, the *Project Manager* may prohibit the taking of such photographs and or require that all such photographs be taken by an official *Employer* photographer. In the latter event, the *Contractor* is required to make arrangements directly with the photographer for the taking of the photographs required by the *Contractor* for the purpose of the progress reporting requirements.

### *Contractor’s* Equipment (including temporary works).

* + - 1. The *Contractor* provides all equipment, tools and special tools that are required to execute and complete the *works*.
      2. The *Contractor’s* equipment does not impair the *Employer’s* operations or access to the plant.
      3. The *Contractor* provides all or any temporary or expendable materials required for the storage of material.
      4. The *Contractor* declares all materials, equipment and tools via a prepared, pre-printed list upon arrival at the main security entrance, where a removal permit is issued by Security personnel.
      5. The *Contractor* keeps an inventory of their equipment on Site.
      6. Proof of Site entrance (approved list or permit) needs to be provided before equipment can be removed from Site.
      7. The *Contractor* keeps these records and provides copies of all equipment and tools lists to the *Project Manager* upon their first entry to site. If the *Contractor*’s records are lost, the *Project Manager* may issue a gate release permit only upon the Contractor proving ownership, **or the *Contractor* may have to leave the equipment behind on Site**.
      8. The *Contractor* is responsible for the safeguarding, care and security of all items on Site whilst in the *Contractor’s* custody and control, until Completion of the whole of the *works*.
      9. Any electrical equipment or appliances used by the *Contractor* conforms to the applicable OHS Act safety standards and is maintained in a safe and proper working condition and their condition recorded on a monthly inspection check sheet. The *Project Manager* may stop the *Contractor*'s use of any electrical equipment, or appliance, which does not conform to the foregoing.
      10. Off-loading and handling equipment, such as cranes, forklifts or other yellow plant are neither available on Site, nor provided by the *Employer* for the *Contractor*’s use and if required, is provided by the *Contractor*. This includes the crane(s) and related equipment associated with the activities in the Works Information. The *Contractor* submits the following documentation for review and acceptance to the *Project Manager* before a crane (if required) is brought onto Site:
          1. Rigger and crane driver’s proof of safety induction completed with certified ID copy and valid medical fitness certificate.
          2. Rigger and crane driver’s Site access permits.
          3. Rigger and crane driver’s competency certificates (proof of training).
          4. Safe work procedure(s) for the crane, which includes rigging plans.
          5. Detailed risk assessment specific to the Site work.
          6. Valid load test certificates and monthly inspection sheets for all lifting gear.
      11. All complex rigging is only done by a certified rigger and while a safety officer is in attendance.
      12. The *Contractor* sets up any additional safety barriers/screens and signage around the plant area being worked on.
      13. The *Contractor* supplies and installs temporary local lighting in accordance with the requirements of the OHS Act, as amended. The *Project Manager* provides no local lighting. All construction lighting is the responsibility of the *Contractor.*
      14. The *Project Manager* may assist the *Contractor* where possible with the off-loading of equipment, plant and material but the responsibility for off-loading remains with the *Contractor.*

### Equipment provided by the *Employer*

#### Scaffolding

* + - * 1. The *Contractor* establishes scaffolding requirements and requests the *Project Manager* in writing to erect scaffolding and barricading, wherever necessary. Planning is required three (3) days in advance for new scaffolding/barricading and at least 24 hours in advance for any modifications. Scaffolding and barricading cannot be erected, moved, disassembled or modified by the *Contractor.* Safety harnesses must be worn by all the *Contractor’s* personnel to access scaffolds via ladders and in all areas when working at heights.
        2. The *Project Manager* only provides solid barricading, signage is not included.

### Site Services and Facilities

#### Site Yard

1. The *Contractor* has an office on Site for the duration of the contract to facilitate the proper co-ordination and execution of the works.
   * + - 1. A site is made available to the *Contractor* for his yard within the Power Station security area. The proposed site may be shown to the *Contractor* during Site meeting or clarification meeting. The yard is a raw site and is used by the *Contractor* for the establishment of his offices, ablution, change-rooms, workshop and stores.
         2. The *Contractor’s* yard is subject to periodic inspection by the *Project Manager or Supervisor* and Safety Risk Officers*.*
         3. The location of the nearest sewer manhole, power distribution point, potable water connection storm water channel and the road access point is indicated by the *Project Manager*. The *Contractor* is responsible for the connection to the closest point of supply.

#### Supply of Electricity

* + - * 1. Electricity supply is made available for construction purposes free of charge from installed power points, which is indicated by the *Project Manager*. The *Contractor* is responsible for the provision of the reticulation system from the point of supply. Both 220 (AC) Volt and 380 (AC) Volt are available on request. All points of supply requested by the *Contractor* are provided in terms of quantity and location at the discretion of the *Project Manager*.
        2. No guarantees of power supply or quality are given and power supply breaks of any duration may occur without warning, while planned outages are also a possibility. The *Contractor* makes arrangements at his own expense to improve continuity and quality of power, where necessary for any reason and no claim of any nature relating to power failures are considered.
        3. No connection is made to the permanent installation at the Power Station without the prior acceptance of the *Project Manager*.
        4. The power supply is managed in accordance with the latest revision of the Eskom safety regulations i.e.:
  + 32-846, Operating Regulations for High-Voltage Systems
  + 36-681, Generation Plant Safety Regulations
    - * 1. A Certificate of Compliance (COC) for the site installation is provided by the *Contractor* prior to power being switched on.

#### Water

* + - * 1. Water is made available on request free of charge from water supply points on Site.
        2. The *Contractor* supplies at his own cost all the necessary connections, fittings, piping work, temporary plumbing and pumps necessary to lead water from the *Employer’s* points of supply to the various points where it is required.
        3. The *Contractor* is responsible for maintaining this equipment until Completion of the *works*.
        4. The *Project Manager* does not guarantee continuity of supply and the *Contractor* makes his own provision for standby supplies to maintain continuity of work.
        5. Claims of any nature relating to the discontinuity of water supply are not considered.

#### Roads

* + - * 1. Main access roads are surfaced and may be used by the *Contractor* with the necessary care. The *Employer* maintains the Site roads, described above, to a fair condition but construction work may occasionally cause gravel road detours to be used. Any costs incurred by the *Project Manager* from damage caused to underground services, structures, etc. as a result of the *Contractor* not using the prescribed routes, is recovered from the *Contractor.*
        2. The *Contractor* provides temporary access points from the prescribed routes and roads to the points where the *Contractor* is required to perform work, having first obtained permission in writing from the *Project Manager*.

#### Ablution Facilities

1. Ablution facilities are provided on the four corners of the Power Station, one of which is in close proximity to the water plant area.
2. Any *Contractor* employee found using the plant or veld to relieve himself/herself, is immediately instructed to be taken off site.

#### Take Away Meals

1. The *Contractor* or any of the *Contractor’s* employees or Subcontractors may purchase take away meals from the fast-food outlet on Site, if available. Driving off Site to purchase meals is not preferable and it should not delay the progress of the project.

### Facilities provided by the *Contractor*

#### *Contractor’s* Yard, Offices, Workshops and Stores

The *Contractor* provides, erects and maintains for his own use, adequately sized office accommodation and stores, together with such drainage, lighting, heating and hot and cold water services as he may require. He makes provision for adequate parking and a turning area adjacent to all the aforesaid structures.

The *Contractor* includes, in his establishment rates, for all further treatment of the yard area that he considers necessary for his operation throughout his period of occupation and under all weather conditions. Such treatment includes, but is not limited to, internal drainage, provision of suitable wearing surface, dust control and all other measures that the *Contractor* considers necessary. The *Contractor* also includes for all fencing, security and access arrangements. Maintenance of the Yard is the *Contractor's* responsibility. Outfall drainage of all surface run-off drains are constructed by the *Contractor* to the *Project Manager's* acceptance, to minimise erosion and effect control of contaminated water. All the *Contractor's* proposals for laying out his yard area are accepted by the *Project Manager* prior to occupying the yard. The *Contractor* is not permitted to occupy any ground other than that allocated to him.

The *Contractor's* proposals state fully what measures are to be taken regarding removal and storage of topsoil, stabilisation of exposed shales and provision of adequate drainage to prevent erosion and further loss of topsoil.

#### Electricity

##### Conditions of supply

All installations connected to a supply of electricity provided by the *Project Manager,* comply with the applicable regulations. Failure to comply with the requirements can lead to immediate disconnection.

No connection is made to the permanent installation at a power station without the prior acceptance of the *Project Manager*.

No guarantees of power supply quality are given and power supply breaks of some duration may occur without warning. The *Contractor* makes arrangements at his own expense to improve continuity and quality of power where necessary for any reason, and no claim of any nature relating to power failures is considered.

##### Temporary Cabling

The *Contractor* provides at his own expense, all temporary wiring and cabling to lead power from the *Employer* points of supply to the various points where it is required. He maintains and removes these on completion.

##### Electricity Equipment/Appliances

Any electrical equipment, or appliances, used by the *Contractor* conforms to the applicable South African safety standards and is maintained in safe and proper working conditions. The *Project* *Manager* has the right to stop the *Contractor’s* use of any electrical equipment, or appliance, which, in the opinion of the *Project Manager’s* representative, does not conform to the foregoing.

##### Lighting

Temporary local lighting in accordance with the requirements of the Factories Inspector are provided by the *Contractor* at his own expense. No local lighting is provided by the *Employer*.

##### Sanitary Facilities

The *Contractor* provides, services, maintains and removes, temporary sanitary facilities, in his working areas, at his own cost.

Permanent toilets to serve the Power Station Terrace area are provided by the *Employer*. All the *Contractor’s* Personnel will be expected to make use of these facilities.

##### Storage and Cleanliness at Site

During erection the *Contractor* provides barriers around the units to prevent unauthorised access. It is essential that during the erection of plant, the *Contractor* and his subcontractors maintain a high standard of cleanliness. Particular consideration is given to the protection of the interiors of plant. During sweeping and dusting, the *Contractor* and his subcontractors ensure that a minimum of dust is liberated into the atmosphere. Cleaning up by vacuum cleaning is preferred.

The use of compressed air for cleaning is prohibited.

Periodically, floors, plant and drain trenches within the working areas are cleaned by the *Contractor*.

##### Temporary Buildings

The *Contractor* is allowed space on which to erect temporary offices and workshops and to store materials, and to which he confines his operations other than those carried on at the Site of the *works*.

##### Accommodation and Travel

The *Contractor* is responsible for the provision of accommodation for all his employees engaged in the execution of the *works*. This includes the needs of his subcontractors. The cost for accommodation, as well as for transportation to and from Site is included in the Contract Price.

#### Telecommunications

* + - * 1. Neither a network point nor a telephone is available on site. Should the *Contractor* require one, he is to make his own arrangements with relevant authorities. Arrangements may also be made to use the telephones of the station if they are available. Calls from these are charged for at prevailing GPO/Telkom rates.
        2. Should the *Contractor* wish to use radio communication equipment on Site, he makes a request to the *Project Manager*.

### Control of noise, dust, water and waste

* + - 1. The *Contractor* maintains a high standard of cleanliness during the conduct of his activities at the Power Station. This includes areas allocated for storage of materials, Site offices etc. to the satisfaction of the *Project Manager.* The *Contractor* keeps these areas clean and free from accumulation of waste materials and refuse regardless of the source.
      2. The *Contractor* ensures during sweeping and dusting that a minimum amount of dust is liberated into the atmosphere. Cleaning by vacuum cleaners is preferred and the use of compressed air for cleaning plant and personnel is prohibited.
      3. The *Contractor* is responsible for the prompt removal of all waste to the correct waste disposal facility.
      4. For the purpose hereof, “waste” any matter, whether liquid or solid or any combination thereof, which is a by-product, emission, residue or remainder of any process or activity carried out in connection with the *works* and which is not reused on the Site in the ordinary course of carrying out the *works* within seven days of production.
      5. Bins and containers are emptied and the waste removed to the designated area at least once a week. The entire temporary and waste removed to the designated area at least once a week. All the temporary storage areas for bins and containers are kept tidy and do not constitute a nuisance to others. The *Contractor* takes all required steps to avoid spillage of waste alongside the bins and containers during removal and disposal thereof.
      6. No burning of waste is allowed at the Power Station.
      7. Hazardous waste is dealt with in accordance with the safety, health and/or environmental requirements of the *works* and the *Contractor* is solely responsible for the proper disposal thereof.
      8. The *Contractor* removes all scrap metal components, excluding the old cation vessels, from the plant and takes them to the skips or laydown area allocated on site. All hazardous waste e.g. contaminated metals and plastic, sludge, rubble, electronic waste etc. is removed by the *Contractor* off site to a registered, hazardous waste site and the relevant disposal certificates supplied. General waste is disposed of by the *Contractor* of in skips and bins located on site.
      9. Items containing copper is stripped by the *Contractor* and the copper taken to the laydown area next to the main security gate entrance.

## Completion, testing, commissioning and correction of Defects

### Work to be done by the Completion Date

* + - 1. The *Contractor* ensures that all work is completed on or before the *completion date*.
      2. The *Project Manager* cannot certify Completion until all the work has been done and is free of Defects, which would have, in his opinion, prevented the *Employer* from using the works and others from doing their work.
      3. Acceptance of the “As-built” documentation is a pre-requisite for commissioning to be done and to certify completion of the works.

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

* + - 1. Completion is according to the Sectional Completion in the *Employer*’s Data.

### Commissioning

* + - 1. The *Contractor* is responsible for the drawing up of commissioning plans and schedule for each system, in conjunction with the input of the *Employer’s* engineering, maintenance and operating personnel prior to the completion of that section of the work and submits it to the *Project Manager* for review and acceptance.
      2. Commissioning and testing is conducted by the *Contractor* with support from the *Employer’s* engineering, maintenance, project and operating personnel.
      3. Upon completion of the work done on each system and before de-isolation and commissioning of the plant, the *Contractor* confirms that the plant is fit for use and verifies that all re-assembled and newly installed components are correctly installed, including the directions checks, directions of flows, alignments, bolt tightness/torqueing etc. and that they match the existing plant configurations with the necessary plant labels installed.
      4. The *Contractor* ensures that all the plant and equipment removed for the purpose of access or inspection (e.g. covers, doors, gaskets, orifices, spades, gauges, bolts, nuts washers etc.) are put back into position.
      5. The plant is also cleaned of waste, scrap and debris and equipment removed. Scaffolding which does not affect the operation of the plant may be left until the plant commissioning is completed.
      6. Thereafter, the *Contractor* submits all completed QCP’s, data sheets, material certificates, operating and maintenance manuals, drawings etc. to the *Project Manager* to first verify that commissioning may be planned.
      7. In addition, the *Contractor* submits a complete list of numbered schematic, wiring and cable diagrams, which are a true record of the Plant and Equipment as installed and certifies that the works has been wired in accordance with these diagrams.
      8. A pre-commissioning design review is conducted to deem the plant safety cleared for commissioning.
      9. An erection check/plant walk is arranged between all the relevant parties and a snag list generated for immediate rectifications to be done by the *Contractor*.
      10. The *Contractor* requests the RP to provide a Sanction for Test (SFT) so that isolations may be removed. All commissioning activities may be performed under the SFT.
      11. The *Contractor* verifies the signals from all electrical and Control & Instrumentation (C&I) components to the control desk with the *Employer’s* C&I maintenance department.
      12. The *Contractor* conducts both cold and hot commissioning together with the *Employer’s* personnel.
      13. The *Contractor*, at the time of commissioning, has the agreement, or alternatively, the attendance of the *Project Manager* involved in a particular phase, before proceeding with commissioning. Consequently, the *Contractor* must assure himself as to the safety of his own Plant and Equipment in respect of any particular commissioning test and in the event of damage, accept responsibility for such Plant and Equipment.
      14. The *Contractor* co-operates fully with the *Project Manager* and the *Employer’s* C&I representatives in the commissioning the whole of the works for which he supplies the portion of Plant and Equipment specified in this Works Information. The *Contractor* assists the *Employer’s* C&I representatives in the optimisation of all controls and notifies the *Project Manager* when the controls have been completed to the *Contractor’s* satisfaction before offering the works for take over. Actions needed to be performed on the DCS to achieve the commissioning requirements, is performed by the *Employer’s* C&I representative. These activities include HMI indication verification, alarm verification, HMI range checks etc.
      15. Calibrations of all instrumentation form part of the works and calibration sheets must be provided and signed by both parties and included as part of the Data Pack for the works.
      16. As a minimum, the cold commissioning activities conducted by the *Contractor* consists of:
          1. Electrical and instrumentation loop check activities defined in *IEC 62382*
          2. All field equipment checks.
          3. Interlocks or Protections checks
          4. Sequence controls checks
          5. Actuator/Valve stroking
          6. 4-20 mA injection - At least three set-points including 0
      17. It is the *Contractor’s* responsibility to check that each measuring loop falls within the specified loop accuracy.
      18. The *Contractor* complies with all the *Employer’s* safety and site regulations, which all Contractors are to conform with at Majuba Power Station.
      19. The safety clearance certificate is the certificate issued by the *Employer* to the *Contractor*, stating that from the time and date stated on the certificate the specified machinery is under the *Project Manager’s* control. Further access to the machinery is only permissible through the *Employer’s* permit system.
      20. The *Contractor* ensures that proper housekeeping is done again before re-instating the plant by means of the RP clearing the PTW.
      21. The plant is considered “in operation” once the RP clears the PTW and the *Contractor* may not perform any more activities on that plant unless a new PTW is applied for and accepted.
      22. The *Contractor* commissions the plant in accordance with 240-56356376 On-Site Commissioning for Low Pressure Systems Standard.

### Start-up procedures required to put the *works* into operation

* + - 1. The *Contractor* refers to the OEM manuals provided for details on start-up of the plant during the commissioning of the various plant systems.

### Take over procedures

* + - 1. When a plant section is commissioned, the *Project Manager* may accept the plant and arrange for the takeover. Such acceptance affects the transfer of the asset and the control of the plant from the *Contractor* to the *Employer*.
      2. During initial testing and commissioning of the plant up to guarantee performance testing, the plant is deemed to be in beneficial occupation.

### Access given by the *Employer* for correction of Defects

* + - 1. The defect(s) is/are reported to the *Contractor* as soon as the *Project Manager* becomes aware thereof.
      2. An opportunity is arranged by the *Project Manager* for the repair and the *Contractor* is notified at least 48 hours in advance of the opportunity to repair the defect(s).
      3. It is the *Contractor’s* responsibility to get the Safety Plan checked and approved again, if necessary and to apply for Site access permits before any work can commence on Site.

### Performance tests after Completion

The *Contractor* shall be permitted, before Completion of the Works and to the convenient of the *Employer*, to perform any tests that he may desire. Upon completion of such tests preliminary trials to the *Contractor’s* satisfaction, the *Contractor* gives the *Project* *Manager* fourteen days notice that the *works* are ready to be subjected to such tests as specified for the purpose of taking-over.

When the *Contractor* has given such notice, the *works* is deemed to be complete and no alterations or readjustments are made to the *works* before the time fixed for commencing the tests, without *Employer*’s written permission. Should any such alteration or readjustment be considered necessary before the time fixed for commencing the tests, such tests may, at *Employer*’s discretion, be deferred for a period not exceeding fourteen days.

The *Contractor* installs his own instruments as deemed necessary. All instruments and temporary equipment are calibrated. If the difference between the instruments obtained from instruments measuring the same quantities is within the limits agreed upon by *Project Manager* and the *Contractor* prior to the tests, the average of these measurements are accepted as the final measurement.

#### Acceptance testing

The following three test phases shall apply separately to the in loading conveyor and associated systems

* + - Functional testing
    - Capacity testing
    - Reliability testing.

The contractor shall apply formally for each of these test / test phases to start. The test shall only start when the plant is in a fully operational state, when the aforementioned test was completed successfully and if all work is completed as required for hand over. Plant commissioning and optimization shall not be allowed during testing.

In case of failure of any of the test phases due to required plant changes, the functional tests for the relevant plant area and all other effected plant shall be repeated. The Capacity and reliability test shall be re-done in total of the relevant system.

#### Functional Testing:

The system will be tested in the empty running condition and loaded condition at a range of loads, to confirm that the complete plant performs according to the specification. The test period allowed should be a minimum of one week.

The following are tested and confirmed to specification:

* Alignment of the conveyors
* Confirmation that the control system performs according to the design with reference to control and sequence starting and stopping and that all protection devices, limits and the communication links operates correctly.
* No spillages
* No blockages or build ups that may result in blockages
* Acceptable levels of dust in the environment. The levels of dust shall comply with statutory requirements and no nuisance dust in the general working areas for operators and maintainers should be present.
* The central loading of all the conveyors
* The performance of the transfer chutes.
* The evaluation of conveyor transfer balance when tripped at full capacity and speed (no over spilling at transfer points during conveyor run-down).
* The ability of the plant to stop and start under full load.
* All the functional operation of the machine under load.
* Performance testing of the conveyors to confirm the performance of the drive train with reference to acceleration torque introduction, the dynamic behaviour and the suitability of the design with reference to the system resistance.

#### Capacity testing:

The system shall operate at maximum design capacity for a continuous period of at least 8 hours. The plant shall operate satisfactory with no indication of constraints in the functional performance for extended operation at this maximum load.

#### Reliability test:

The reliability test will be conducted over a period of a month and this test is intended to confirm the acceptable performance of the complete system including the control and electrical system.

The reliability test will be regarded successful when the stoppages as result of this relevant system is limited to a maximum of 0.5 incidents per day and that the downtime as result of the combined stoppages is less than 30 minutes per day on average measured over the period of 30 days continuous operation in the fully automatic mode with no control simulations in place.

During the reliability test period, the plant shall be operated by the client’s operators under supervision of the contractor. The contractor shall not be allowed to operate the plant directly.

Should such tests fail, any further tests shall be carried out in accordance with the requirements of the specification. *Employer* shall give instruction for remedial work to be executed by the *Contractor* and upon completion of such remedial work the aforesaid tests shall be repeated. Remedial work and re-testing shall be at *Contractor*’s expense.

# Plant and Materials Standards and Workmanship

The *Contractor* complies with all relevant regulations, procedures and specifications, as and when revised, including the following;

Table 2: List of National and Eskom Specifications

| **Title** | **Reference Number** | **Publicly available** |
| --- | --- | --- |
| **National SHEQ Specifications:** |  |  |
| National Disaster Management Act 57 of 2002 | Act 57 of 2002 | Yes |
| National Water Act, Act 36 of 1998, as amended | Act 36 of 1998 | Yes |
| Occupational Health and Safety Act and Construction Regulations, as amended | Act 85, 1993 | Yes |
| National Key Points Act | Act 102 of 1980 | Yes |
| Compensation for Occupational Injuries and Diseases Act, Act 130 of 1993 | Act 130 of 1993 | Yes |
| Environmental Conservation Act (Act No. 73 of 1989) | ECA Act No. 73 of 1989 | Yes |
| Quality Management Systems | ISO 9001; 2015 | Yes |
| GN R225 in terms of the National Road Traffic Act 93 of 1996 | NRTA Act 93 of 1996 | Yes |
| National Environmental Management Act (No 107 of 1998) | NEMA No 107 of 1998 | Yes |
| National Environmental Management: Waste Act (No 59 of 2008) | NEMWA No 59 of 2008 | Yes |
| Environmental management systems – Requirements with guidance for use. | SANS/ISO 14001:2015 Edition 3 | Yes |
| **National Technical Specifications:** |  |  |
| Automation Systems in the Process Industry - Electrical and Instrumentation Loop Check | IEC 62382 | Yes |
| Pressure Equipment Regulations as defined in the OHS Act |  | Yes |
| Specification for Unfired Fusion Welded Pressure Vessels | PD5500 | Yes |
| Electric welded low carbon steel pipes for aqueous fluids (large bore) | SANS 719 | Yes |
| Welded Low-Carbon Steel Pipes (Large Bore) | SANS 719 (2011) | Yes |
| Pipe flanges | SANS 1123 | Yes |
| Standardized Specification For Civil Engineering Construction | SANS 1200 Series | Yes |
| Standardized specification for civil engineering construction Section L: Medium-pressure pipelines | SANS 1200 L | Yes |
| Fasteners | SANS 1700 | Yes |
| The Preparation of Steel Surfaces for Coatings | SANS 10064 | Yes |
| The structural use of concrete Part 1 & 2 | SANS 10100-1&2 | Yes |
| Classification of Hazardous Location (Electrical Plant) | SANS 10108 (2005) | Yes |
| Identification of Colour Markings | SANS 10140 | Yes |
| The Code of Practice for the Wiring of Premises | SANS 10142 | Yes |
| Basis of structural design and actions for buildings and industrial structures | SANS 10160 Series | Yes |
| **Eskom SHEQ Specifications:** |  |  |
| Outbreak, Pandemic or Epidemic Disaster Response Plan | 240-100092892 | No |
| Guidelines on the management of vulnerable employees during COVID-19 Pandemic | 240-155326818 | No |
| Majuba Power Station COVID -19 Workplace Plan | MNGT/CMPLC/PLN/01 | No |
| Eskom Life Saving Rules, Directive | 240-62196227 | No |
| Emergency Preparedness and response | 32-29 | No |
| SHE Organization | 240-28463367 | No |
| Hazard and Operability Analysis (HAZOP) Guideline | 240-49230111 (Rev 1) | No |
| Employees’ Right of Refusal to Work in an Unsafe Situation Procedure | 240-43848327 | No |
| Eskom vehicle and driver safety management | 32-93 | No |
| Environmental, Occupational Health and Safety Incident  Management Procedure | 32-95 (Rev 6) | No |
| Eskom *Contractor* Health and Safety requirements standards | 32-136 (Rev 3) | No |
| Eskom Waste Management Standard | 32-245 (Rev 3) | No |
| Eskom Vehicle specification | 32-345 | No |
| Eskom Working at Heights Procedure | 32-418 (Rev 1) | No |
| Eskom Generation Plant Safety Regulations (PSR) | 36-681 | No |
| SHE Requirements for the Eskom Commercial Process | 32-726 | No |
| Eskom Safety, Health, Environmental and Quality Policy | 32-727 (Rev 2) | No |
| Supplier Contract Quality Requirement’s Specification (previously QM 58) | 240-10565800 | No |
| Safety, Health and Environmental Specifications for Contractors | 240-30008949 | No |
| MPS Safety, Health & Environmental Specification for *Contractor*s | RA/RM/STD/01 | No |
| MPS Environmental Management Requirements for *Contractor*s and Suppliers | ENV/GEN/SPEC/01  (Rev 0) | No |
| Majuba Waste Management | ENV/GEN/WI/12  (Rev 0) | No |
| **Eskom Technical Specifications:** |  |  |
| Engineering Drawing Office and Engineering Documentation Standard | 36-943 | No |
| Eskom Document Template number | 240-49910707 | No |
| Design Review Procedure | 240 - 53113685 | No |
| Structural Design and Engineering Standards | 240-56364545 | No |
| Plant Labelling Standard | 240-71432150 | No |
| Standard for Non-Destructive Testing (NDT) on Eskom Plants | 240-83539994 | No |
| Engineering Drawing Standard – Common Requirements | 240-86973501 | No |
| Standard Coding/Labelling for Majuba | ENG/GEN/04 | No |
| Specification for the Identification of the Contents of Pipelines and Vessels | ESKSCAAC6 | No |
| On-Site Commissioning for Low-Pressure Systems Standard | 240-56356376 | No |
| Standard for Low Pressure Pipelines | 240-123801640 | No |
| Standard for Low Pressure Valves | 240-105020315 | No |
| Centrifugal Pumps Specification | 240-56030558 | No |
| Standard for the Internal Corrosion Protection of Water Systems, Chemical Tanks and Vessels and Associated Piping with Linings | 240-101712128 | No |
| Standard for the External Corrosion Protection of Plant, Equipment and Associated Piping with Coatings | 240-106365693 | No |
| Standard for Welding Requirements on Eskom Plant | 240-106628253 | No |
| LV Power and Control Cable with Rated Voltage Standard | 240-56063805 | No |
| Requirements for Control and Power Cables for Power Stations | 240-56227443 | No |
| Requirements for Control and Power Cables for Power Stations Standard | 240-56227443 | No |
| Environmental Conditions for Process Control Equipment Used at Power Stations Standard | 240-56355731 | No |
| Field Instrument Installation Standard | 240-56355754 | No |
| Field Instrument Installation Standard Junction Boxes and Cable Terminations | 240-56355815 | No |
| Instrument Piping for Fossil, Hydro, Renewable and Aero-Derivative Power Plants Standard | 240-89147446 | No |
| Earthing and lightning standard | 240-56356396 | No |
|  |  |  |

# List of drawings

## 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.

Table 3: List of Drawings and Datasheets

| **No.** | **Drawing number** | **Title** |
| --- | --- | --- |
|  | 0.66/91143 | OVERLAND CONVEYORS, STACKER FEED CHUTE DETAILS |
|  | 0.66/91146 | OVERLAND CONVEYOR HEAD CHUTE ARRANGEMENT |
|  | 0.66/91158 | CHUTE DEFLECTOR PLATE OVERLAND CONVEYOR |
|  | 0.66/91134 | STACKER FEED CONVEYOR GENERAL ARRANGEMENT |
|  | 0.66/91132 | STACKER FEED CONVEYOR HEAD END AND TAKE-UP DETAILS |
|  | 0.66/91209 | STACKER CONVEYOR FEED CHUTE & SKIRT PLATES DETAILS |
|  | 0.66/91207 | STACKER CONVEYOR GENERAL ARRANGEMENT |
|  | 0.66/91216 | STACKER CONVEYOR BOGIE ASSEMBLY AND DETAILS |
|  | 0.66/91143 | OVERLAND CONVEYORS, STACKER FEED CHUTE DETAILS |
|  | 0.66/91146 | OVERLAND CONVEYOR HEAD CHUTE ARRANGEMENT |
|  | 0.66/91158 | CHUTE DEFLECTOR PLATE OVERLAND CONVEYOR |

**PART 4: SITE INFORMATION**

|  |  |  |
| --- | --- | --- |
| **Document reference** | **Title** | **No of pages** |
|  | This cover page | 1 |
| C4 | Site Information | 4 |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  | Total number of pages | 5 |

# SITE INFORMATION

Core clause 11.2(16) states, “Site Information is information which

* describes the Site and its surroundings and
* is in the documents which the Contract Data states it is in.”

In Contract Data, reference has been made to this Part 4 of the contract for the location of Site Information.

## Site description

* + 1. The Site is situated within the Eskom, Majuba Power Station (MPS) premises, situated on the farms Roodekoppies 67HS and Witkoppies 81HS, approximately 15 km south-west of the town of Amersfoort, along the R35 route, in in the Gert Sibande Municipal District of Mpumalanga.
    2. The approximate coordinates of the access gate tor the station are as follows:
       - 1. Latitude 27° 06’ 12, 28” S
         2. Longitude 29° 46’ 42, 34” E

## Site Geography

* + 1. The elevation of the Power Station Site is approximately 1 709 meters above mean sea level. The 0.00 mm datum which is 1 709.400 meters above MSL, being the turbine house ground floor level.
    2. Topography may generally be described as rolling countryside interspersed with prominent hills. The natural flora consists of veld grass with very few scattered non-indigenous trees.
    3. There are no design requirements or other considerations for seismic activity.

## Plant Access

* + 1. The *Project Manager* grants access to the relevant section of plant by issuing an Access Certificate.
    2. All plant is regarded as alive and in operation at all times unless the relevant isolations have been effected by the Majuba Operating Department and a Permit to Work (PTW) has been issued and accepted by the Responsible Person after verifying the isolations.
    3. The *Contractor* must have the Permit To Work, signed Risk Assessment and completed Worker’s Register before beginning with any work. The hazards identified must be incorporated into the *Contractor’s* risk assessment and adequate precautions taken.
    4. Plant access may be withdrawn by the *Project Manager* at any time or work may be stopped without compensation should the *Contractor* be working unsafely.

## Road Access

* + 1. From Standerton, take the national route R23 (P4-6) to Perdekop, the P97-1 towards Amersfoort, turning off right onto the link road 12 km before Amersfoort.
    2. From Volksrust, travel north along the N11 (P26-1) towards Amersfoort, turning left onto the link road 17.5 km before Amersfoort.
    3. From Amersfoort, take the Morgenzon road west of Amersfoort, turning south-west onto the (P97-1) towards Perdekop, then turning left onto the link road 12 km from Amersfoort.

## Rail Access

* + 1. At present, the nearest Railway Station is Perdekop, although Transnet, prefer Standerton for heavy loads and containers. From here, Transnet performs road deliveries to Site. All transportation facilities at the stations are arranged by the *Contractor* as required.

## Air Access

* + 1. The Site has a surfaced and licensed airstrip with parking facility, adjacent to the Power Station guest house. The airstrip is bitumen surfaced and is 1 500 m long and 15 m wide with 25 m wide gravel shoulders each side.
    2. The strip has been designed for a load classification number of 40 and caters for aircraft up to and including the DC3 Dakota. The airstrip has approach and landing lights, and a non-directional radio navigation beacon has been installed. The beacon frequency is 512 KHz at 29° 44' 30" E, 27° 03' 30" S, tone coding 2 K10A2a, recognition code MAJ, radius of operation 100 nautical miles. Permission to use the airstrip facility is sought from the *Employer* at MPS.

## Climate

* + 1. The Amersfoort area has a climate of hot summers and cold winters, which is typical for that part of the Highveld.
    2. The Weather Bureau’s general description of the climate in the Highveld includes the following:
    3. The winter months are normally dry and about 85% of the annual rainfall falls in the summer months. On the whole, winds are light except for short periods during thunderstorms. Very occasionally tornadoes do occur and cause tremendous damage if they happen to strike a populated area. The annual average number of thunderstorms varies from about 75 in Mpumalanga to 100 in Lesotho. These storms are often violent with severe lightning and strong (but short-lived) gusty, south-westerly winds and are sometimes accompanied by hail.

## Barometric Pressure

* + 1. The mean barometric pressure is 82.42 kPa (Corresponding to 1 709 metres above sea level).

## Temperature

|  |  |  |
| --- | --- | --- |
| Average daily maximum dry bulb | January | 28.2 °C |
|  | July | 18.1 °C |
| Maximum dry bulb recorded | January | 37.2 °C |
|  | July | 26.1 °C |
| Average daily minimum dry bulb | January | 13.0 °C |
|  | July | - 3.6 °C |
| Minimum dry bulb recorded | January | 3.3 °C |
|  | July | - 12.8 °C |

## Precipitation

### Rainfall

* + 1. Average Annual Rainfall of the Highveld, mainly occurring as a result of thunderstorms and showers, ranges from 900 mm in the east to 650 mm in the west and is approximately 690 in Amersfoort. The rainy season is generally from October to March with peak rains falling in December and January. Heavy rainfalls of 125 to 150 mm (or more) occasionally fall in a single day.

### Hail

* + 1. This region has about the highest frequency of hail in South Africa. About 4 to 7 occurrences (depending mainly on altitude) may be expected annually at any one spot, whilst occasionally hailstones can be the size of hen's eggs or tennis balls and can cause tremendous damage.

### Snow

* + 1. Snowfalls are experienced during most winters in the Amersfoort area. During snow falls and immediately afterwards working conditions are extremely unpleasant and movement on the Site is difficult.

## Relative humidity

* + 1. Average maximum 83%
    2. Average minimum 22%

## Wind Velocity

* + 1. Basic design wind speed = 43.5 m/s
    2. Design wind pressure 0.925 kPa at 10 m above ground.

## Seismic Data

* + 1. There are no design requirements for seismic activity.

## Weather data

* + 1. All weather data has been obtained from records developed by the nearest official weather station situated at Volksrust, the climate of which is reasonably representative of the area. Any further specific details of the local climate are obtainable from the Weather Bureau directly.
    2. Wind data has also been reviewed in consultation with the CSIR.
    3. If anyone of the *weather measurement*s recorded by the *Contractor* within a calendar month, before the *completion date* for the whole of the *works* and at the place stated in this Contract Data is shown to be more adverse than the amount stated below, then the *Contractor* may notify a compensation event which is the difference between the *weather data* and the *Contractor’s weather measurement*.

Table 1: Historical One-in-Ten Year *weather data*

| Month | Cumulative rainfall (mm) | Number of days with rain more than 10 mm | Number of days with min air temp **<** 0 °C | Number of days with snow lying at 09:00 CAT |
| --- | --- | --- | --- | --- |
| January | 202 | 7 | 0 | 2 |
| February | 158 | 7 | 0 | 3 |
| March | 122 | 5 | 0 | 2 |
| April | 115 | 4 | 2 | 2 |
| May | 43 | 3 | 8 | 4 |
| June | 29 | 2 | 22 | 6 |
| July | 36 | 2 | 21 | 7 |
| August | 36 | 2 | 11 | 7 |
| September | 64 | 3 | 4 | 6 |
| October | 148 | 6 | 2 | 5 |
| November | 167 | 8 | 0 | 2 |
| December | 177 | 7 | 0 | 3 |

# Annexure A: *Contractor’s* Site Reticulation Layout

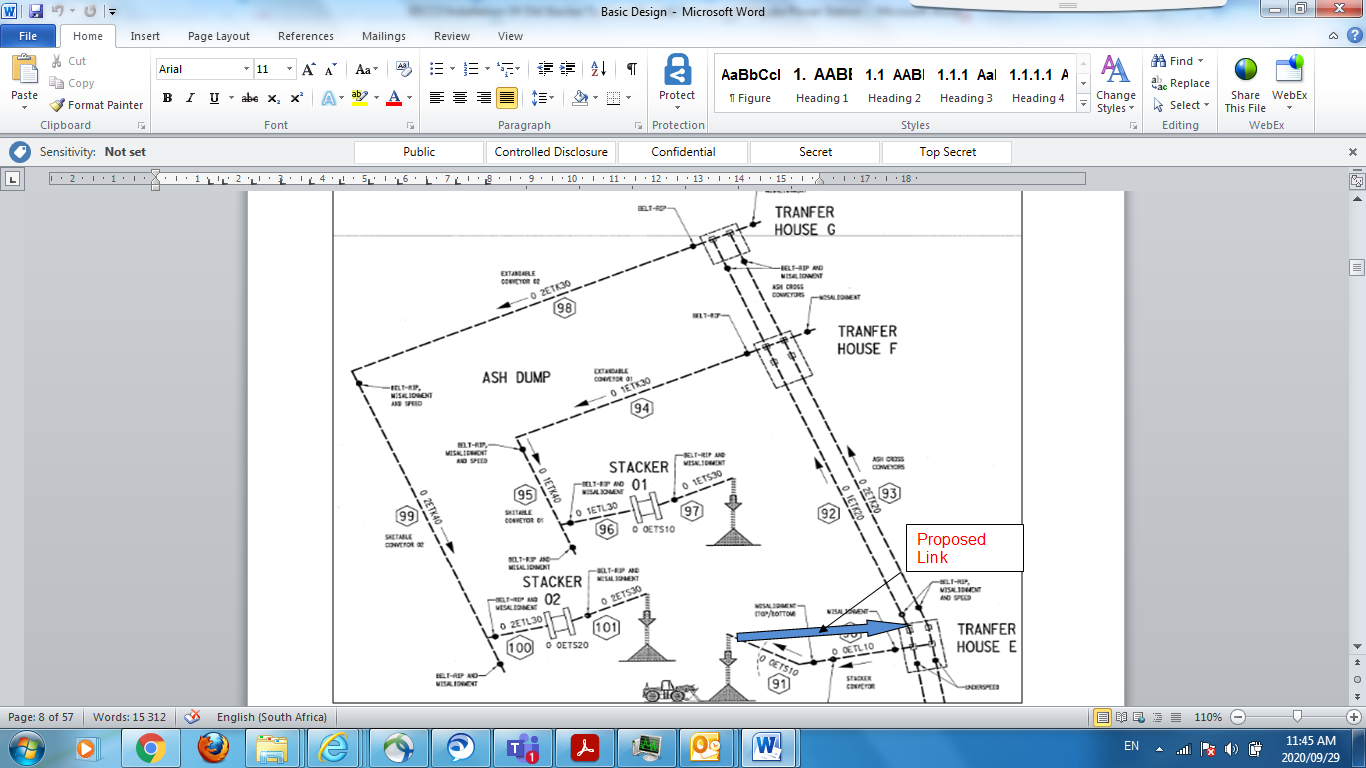




Figure 1: 0.66/0.66/91022



Figure 2: 0.66/91143s1

To next page

From previous page

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*. [↑](#footnote-ref-2)