



NEC3 Engineering and Construction

# Short Contract (ECSC3)

<b>A contract between</b>	<b>Eskom Holdings SOC Ltd (Reg No. 2002/015527/30)</b>	
<b>and</b>		
<b>for</b>	<b>Hazardous waste temporary holding facility upgrade</b>	
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<b>Documentation prepared by:</b>	M Nkgapele	

# C1 Agreements & Contract Data

## C1.1 Form of Offer and Acceptance

### Offer

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

**HAZARDOUS WASTE TEMPORARY HOLDING FACILITY UPGRADE**

The tenderer, identified in the signature block below, having examined the documents listed in the Tender Data and addenda thereto as listed in the Tender Schedules, 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.

The offered total of the Prices exclusive of VAT is	<b>R</b>
Value Added Tax @ 15% is	<b>R</b>
The offered total of the Prices inclusive of VAT is	<b>R</b>
(in words)	

This Offer may be accepted by the Employer by signing the form of Acceptance overleaf 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	Managing Director		
<b>For the tenderer:</b>			
Name & signature of witness		Date	
Tenderer's CIDB registration number:			

## Acceptance

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

The terms of the Contract, are contained in:

- Part 1 Agreements and Contract Data, (which includes this Form of Offer and Acceptance)
- Part 2 Pricing Data
- Part 3 Scope of Work: Works Information
- Part 4 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 Tender 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, which must be signed by the duly authorised representative(s) for both parties.

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

Notwithstanding anything contained herein, this Agreement comes into effect on the date when the tenderer receives one fully completed and signed copy of this document, including the Schedule of Deviations (if any) together with all the terms of the contract as listed above.

Signature(s)			
Name(s)			
Capacity			
<b>for the Employer</b>	Eskom Holdings SOC Limited Arnot Power station Private bag x2 RIETKUIL 1097		
Name & signature of witness		Date	

**Schedule of Deviations**

Note:

1. To be completed by the Employer prior to award of contract. This part of the Offer & Acceptance would not be required if the contract has been developed by negotiation between the Parties and is not the result of a process of competitive tendering.
2. The extent of deviations from the tender documents issued by the Employer prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender.
3. A tenderer’s covering letter must not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid be the subject of agreement reached during the process of Offer and Acceptance, the outcome of such agreement shall be recorded here and the final draft of the contract documents shall be revised to incorporate the effect of it.

No.	Subject	Details
1		
2		
3		
4		

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			Eskom Holdings SOC Limited Arnot Power station Private bag x2 RIETKUIL 1097
Name & signature of witness			
Date			

## C1.2 Contract Data

### Data provided by the *Employer*

**[Instructions to the contract compiler: (delete these two notes in the final draft of a contract)]**

1. Please read the relevant clauses in the NEC3 Engineering and Construction Short Contract (June 2005) (ECSC3)<sup>1</sup> before you enter data. The number of the principal clause is shown for most statements however other clauses may also use the same data.
2. Where the following symbol is used “[●]” - data is required to be inserted.]

Completion of the data in full is essential to create a complete contract.

Clause	Statement	Data
	<b>General</b>	
10.1	The <i>Employer</i> is (Name):	<b>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</b>
	Address	<b>Registered office at Megawatt Park, Maxwell Drive, Sandton, Johannesburg</b>
10.1 & 14.4	The <i>Employer's</i> representative to whom the <i>Employer</i> in terms of clause 14.4 delegates his actions <sup>2</sup> is (Name):	
	Address	<b>Arnot Power Station Private Bag X2, RIETKUIL 1097</b>
	Tel No.	
	Fax No.	
	E-mail address	
11.2(11)	The <i>works</i> are	<b>Hazardous waste temporary holding facility upgrade</b>
11.2(13)	The Works Information is in	<b>the document called 'Works Information' in Part 3 of this contract.</b>
11.2(12)	The Site Information is in	<b>the document called 'Site Information' in Part 4 of this contract.</b>
11.2(12)	The <i>site</i> is	<b>Arnot Power Station, by South contractors yard</b>
30.1	The anticipated <i>date</i> is.	
11.2(2)	The <i>completion date</i> is.	
13.2	The <i>period for reply</i> is	

<sup>1</sup> Available from Engineering Contract Strategies Tel 011 803 3008, Fax 011 803 3009.

<sup>2</sup> Except those actions which can only be done by the *Employer* as a Party to the contract.

40	The <i>defects date</i> is	<b>weeks after Completion</b>
41.3	The <i>defect correction period</i> is	<b>week</b>
50.1	The <i>assessment day</i> is the	<b>of each month.</b>
50.5	The <i>delay damages</i> are	<b>R per day delayed</b>
50.6	The retention is	<b>% of contract value (TBC)</b>
51.2	The interest rate on late payment is	<b>% (TBC)</b>
80.1	The <i>Contractor</i> is not liable to the <i>Employer</i> for loss of or damage to the <i>Employer's</i> property in excess of	<b>the amount of the deductibles relevant to the event described in the applicable "Format ECSC3" policy available on</b> <i>http://www.eskom.co.za/Tenders/InsurancePoliciesProcedures/Pages/EIMS_Policies_From_1_April_2014_To_31_March_2015.aspx</i>
82.1	The <i>Employer</i> provides this insurance	<b>as stated for "Format ECSC3" available on</b> <i>http://www.eskom.co.za/Tenders/InsurancePoliciesProcedures/Pages/EIMS_Policies_From_1_April_2014_To_31_March_2015.aspx</i>  <b>(See Annexure A for basic guidance)</b>
82.1	The minimum amount of cover for the third insurance stated in the Insurance Table is:	<b>whatever the Contractor deems necessary in addition to that provided by the Employer.</b>
82.1	The minimum amount of cover for the fourth insurance stated in the Insurance Table is:	<b>As prescribed by the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 and the Contractor's common law liability for people falling outside the scope of the Act with a limit of Indemnity of not less than R500 000 (Five hundred thousand Rands)</b>
	Does the United Kingdom Housing Grants, Construction and Regeneration Act (1996) apply?	<b>No</b>
93.1	The <i>Adjudicator</i> is	<b>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 <a href="http://www.ice-sa.org.za">www.ice-sa.org.za</a>). If the Parties do not agree on an Adjudicator the Adjudicator will be appointed by the Arbitration Foundation of Southern Africa (AFSA).</b>
	Address	
	Tel No.	
	Fax No.	
	e-mail	

93.2(2)	The <i>Adjudicator nominating body</i> is:	<b>the Chairman of ICE-SA a joint Division of the South African Institution of Civil Engineering and the London Institution of Civil Engineers. (See <a href="http://www.ice-sa.org.za">www.ice-sa.org.za</a> ) or its successor body</b>
93.4	The <i>tribunal</i> is:	<b>arbitration.</b>
	The <i>arbitration procedure</i> is	<b>the latest edition of Rules for the Conduct of Arbitrations published by The Association of Arbitrators (Southern Africa) or its successor body.</b>
	The place where arbitration is to be held is	<b>South Africa</b>
	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	<b>the Chairman for the time being or his nominee of the Association of Arbitrators (Southern Africa) or its successor body.</b>
	<b>The <i>conditions of contract</i> are the NEC3 Engineering and Construction Short Contract (April 2013)<sup>34</sup> and the following additional conditions Z1 to Z11 which always apply:</b>	

### **Z1 Cession delegation and assignment**

- Z1.1 The *Contractor* does not cede, delegate or assign any of its rights or obligations to any person without the written consent of the *Employer*.
- Z1.2 Notwithstanding the above, the *Employer* may on written notice to the *Contractor* cede and delegate its rights and obligations under this contract to any of its subsidiaries or any of its present divisions or operations which may be converted into separate legal entities as a result of the restructuring of the Electricity Supply Industry.

### **Z2 Change of Broad Based Black Economic Empowerment (B-BBEE) status**

- Z2.1 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.
- Z2.2 The *Contractor* is required to submit an updated verification certificate and necessary supporting documentation confirming the change in his B-BBEE status to the *Employer* within thirty days of the notification or as otherwise instructed by the *Employer*.
- Z2.3 Where, as a result, the *Contractor's* B-BBEE status has decreased since the *starting date* the *Employer* may either re-negotiate this contract or alternatively, terminate the *Contractor's* obligation to Provide the Works.
- Z2.4 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 those stated in Clause 91.1 and the amount due on termination includes amounts listed in Clause 92.1 less a deduction of the forecast additional cost to the *Employer* of completing the *works*.

### **Z3 Confidentiality**

<sup>3</sup> If June 2005 Edition applies, delete April 2013 and insert June 2005

<sup>4</sup> State whether attached as a 'PDF' file in terms of Eskom's licence, or to be obtained from Engineering Contract Strategies Tel 011 803 3008, Fax 086 539 1902 or [www.ecs.co.za](http://www.ecs.co.za).

- Z3.1 The *Contractor* does not disclose or make any information arising from or in connection with this contract available to others except where required by this contract. 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 where required by this contract the *Contractor* ensures that the provisions of this clause are complied with by the recipient.
- Z3.2 If the *Contractor* is uncertain about whether any such information is confidential, it is to be regarded as such until notified otherwise by the *Employer*.
- Z3.3 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.
- Z3.4 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 *Employer*. All rights in and to all such images vests exclusively in the *Employer*.
- Z3.5 The *Contractor* ensures that all his subcontractors abide by the undertakings in this clause.

**Z4 Waiver and estoppel: Add to clause 12.2:**

- Z4.1 Any extension, concession, waiver or relaxation of any action stated in this contract by the Parties or their delegates 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.

**Z5 Health, safety and the environment**

- Z5.1 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.
- Z5.2 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.

**Z6 Provision of a Tax Invoice and interest. Add to clause 50**

- Z6.1 The *Contractor* provides the *Employer* with a tax invoice in accordance with the *Employer's* procedures stated in the Works Information, showing the correctly assessed amount due for payment.
- Z6.2 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 clause 51.2 is then calculated from the delayed date by when payment is to be made.
- Z6.3 The *Contractor* 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.

**Z7 Notifying compensation events**

- Z7.1 Delete from the last sentence in clause 61.1, "unless the event arises from an instruction of the *Employer*."

**Z8 *Employer's* limitation of liability; Add to clause 80.1**

- Z8.1 The *Employer* liability to the *Contractor* for the *Contractor's* indirect or consequential loss is limited to R0.00 (zero Rand).

**Z9 Termination: Add to clause 90.2, after the words "or its equivalent":**

- Z9.1 or had a business rescue order granted against it.

**Z10 Addition to Clause 50.5**

- Z10.1 If the amount due for the *Contractor's* payment of *delay damages* reaches the limits stated in this Contract Data (if any), the *Employer* may terminate the *Contractor's* obligation to Provide the Works.

If the *Employer* terminates in terms of this clause, the procedures on termination are those stated in Clause 91.1 and the amount due on termination includes amounts listed in Clause 92.1 less a deduction of the forecast additional cost to the *Employer* of completing the *works*.

**Z11 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 <i>Contractor</i> 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 influencing an Affected Party to act unlawfully or illegally,  |

Committing Party	means, as the context requires, the <i>Contractor</i> , 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 11.1 A Committing Party may not take any Prohibited Action during the course of the procurement of this contract or in execution thereof.

Z 11.2 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 11.3 If the *Employer* terminates the *Contractor's* obligation to Provide the Works for this reason, the amounts due on termination are those intended in core clauses 92.1 and 92.2.

Z 11.4 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 A: Insurance provided by the Employer

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

1. For the purpose of works contracts likely to be let under this contract (low value straight forward work), insurance provided by Eskom (the *Employer*) has been arranged on the basis of “**Format ECSC3**” as described on the web link given at the foot of this page.
2. Tendering contractors should note that cover provided by the *Employer* is only per the policies available on the internet web link listed below under the **Format ECSC3** 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 82.1. In terms of clause 82.1 “The *Contractor* provides the insurances stated in the Insurance Table. The *Contractor* does not provide an insurance which the *Employer* is to provide as stated in the Contract Data”. 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.
3. When 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.
4. **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\\_From\\_1\\_April\\_2014\\_To\\_31\\_March\\_2015.aspx](http://www.eskom.co.za/Tenders/InsurancePoliciesProcedures/Pages/EIMS_Policies_From_1_April_2014_To_31_March_2015.aspx)

## Annexure B: The *Employer’s* Panel of Adjudicators

The following persons listed in alphabetical order of their surname have indicated their willingness to be included in the Eskom Panel of Adjudicators. Their CV’s may be obtained by using the contact details provided.

Name	Location	Contact details (phone & e mail)
Nigel ANDREWS	Gauteng	+27 11 836-6760 nigela@quoin.net
Andrew BAIRD	Gauteng	+27 11 803 3008 <a href="mailto:andrewbaird@ecsconsult.co.za">andrewbaird@ecsconsult.co.za</a>
Christopher BINNINGTON	Gauteng	+27 11 888-6141 <a href="mailto:cdb@bca.co.za">cdb@bca.co.za</a>
Bruce LEECH	Gauteng	+27 11 290 4000 leech@counsel.co.za
Nigel NILEN	Gauteng	+27 11 465 3601; nilences@global.co.za
Peter THURLOW	Gauteng	+27 11 787 6226 <a href="mailto:info@thurlowassoc.com">info@thurlowassoc.com</a>

**Information about the Panel and appointment of the selected *Adjudicator* is available from Supply Chain Operations management, by contacting Leighton Itholeng on 011 800 4031 or [Leighton.Itholeng@eskom.co.za]**

### Data provided by the *Contractor* (the *Contractor's Offer*)

The tendering contractor is advised to read both the NEC3 Engineering and Construction Short Contract (April 2013) and the relevant parts of its Guidance Notes (ECSC3-GN)<sup>5</sup> in order to understand the implications of this Data which the tenderer is required to complete. An example of the completed Data is provided on page 31 of the ECSC3 April 2013 Guidance Notes.

Completion of the data in full is essential to create a complete contract.

10.1	The <i>Contractor</i> is (Name):	[•]
	Address	[•]
	Tel No.	[•]
	Fax No.	[•]
	E-mail address	[•]
63.2	The percentage for overheads and profit added to the Defined Cost for people is	[•]%
63.2	The percentage for overheads and profit added to other Defined Cost is	[•]%
63.2	The hourly rates for Defined Cost of design outside the Working Areas are:	
	Category of employee	[•]%
	Hourly rate	[•]%
63.2	The percentage for design overheads is:	[•]%
63.2	The categories of design employees whose travelling expenses to and from the Working Areas are included in Defined costs are:	[•]%
11.2(9)	The Price List is in	<b>the document called 'Price List' in Part 2 of this contract.</b>
11.2(10)	The offered total of the Prices is [Enter the total of the Prices from the Price List]:	<b>R[•] excluding VAT [in words] [•] excluding VAT</b>

<sup>5</sup> Available from Engineering Contract Strategies Tel 011 803 3008, Fax 086 539 1902 or www.ecs.co.za.

## C2 Pricing Data

### C2.1 Pricing assumptions: Option A

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

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.

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

Entries in the first four columns in the Price List are made by the tendering *Contractor*.

All Prices are to be shown excluding VAT.

### C2.2 Price List

The Price List is based on Option A, activity schedule in NEC 3 contract.

The tendering *Contractor* 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 Price List have listed some items that the *Employer* requires the *Contractor* is to include in his activity schedule and be priced accordingly as a minimum.

#### 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.

Example of an activity schedule below. The *activity schedule* could have the following format:

Item No	Description	Unit of Measure
	<b><u>DESIGN</u></b>	
<b>100</b>	<b><u>Provide design for approval by the Engineer</u></b>	
a	Site Geotechnical investigation	Item
b	Detail Design for the facility for the approval/acceptance of Eskom Engineer	Item
	i. Hazardous waste storage area	
	ii. Operator office, kitchen & toilets	
	iii. Access road	
c	Facilitate approval by the Authorities (DEFF)	Item
d	Provide detail construction drawings	Item
e	Provide As-built drawings	Item
f	Running cost associated with the design activity	Sum
	<b>SUB TOTAL DESIGN</b>	
<b>200</b>	<b>ACTIVITY NO 2</b>	
	<b><u>CIVIL WORKS</u></b>	
	<b><u>Construction of the Facility</u></b>	
a	Portal Frame	tons
b	Supply and Fabrication of Structural Steel (S355JR)	tons
c	Hot dipped galvanising	tons
c	Delivery to Arnot site	tons
d	Structural Erection on Site	tons
e	Design, supply and install a suitable capacity overhead crane	Item
SANS 1200	<b>EARTHWORKS</b>	
300	<b><u>SITE PREPARATION</u></b>	
	Demolishing	Sum
	Waste & scrap sorting and removal to dumping site to be located by Contractor	Sum
	Clear and Grub to a depth of 150mm	m2
	Remove topsoil to a nominal depth of 150mm, stockpile and maintain	m3
400	<b><u>BULK EXCAVATION</u></b>	
	Excavate in all materials and use for embankment or backfill or dispose as ordered	m3
	Extra over for:	
	(1) Intermediate excavation	m3
	(2) Hard Rock excavation	m3
	Excavate for restricted foundations, footings and pipe trenches in all material and use for backfilling or embankment or dispose	m3

	Extra over for:	
	(1) Intermediate excavation	m3
	(2) Hard Rock excavation	m3
	Importing of material:	
	Extra over for importing materials from commercial sources or from borrow pits	m3
	Extra Excavation in all materials to provide working space around structure	m3
500	<b>EXISTING SERVICES</b>	
	(1) Supply (unless hired under item (2) below) of specialist equipment for detection	Sum
	(2) The use or hire for specialist equipment for detection	Hour
600	<b>BACKFILLING AND COMPACTION</b>	
a	<b>Backfilling</b>	
	Under solid floors, steps, pavings, etc. of G6 material in accordance with SABS 1200DM compacted to 93% Mod AASHTO density	m3
	Under solid floors, steps, paving, etc. of G5 material in accordance with SABS 1200DM compacted to 95% Mod AASHTO density	m3
b	<b>Compaction</b>	
	Compaction of in-situ ground surface over site for platform by wetting and compacting to 93% Mod AASHTO	m2
	Compaction of in-situ ground surface over site for platform by wetting and compacting to 95% Mod AASHTO	m2
700	<b>CARTING AWAY FROM SITE</b>	
	Extra over all excavations for carting away	
	Surplus material from excavations and/or stockpiles on site to dumping site to be located by Contractor	m3
	Carting away of contaminated material to an approved disposal site	m3
800	<b>DEWATERING</b>	
	Keeping all excavations free of all water other than subterranean water	Sum
	Dealing with subterranean water to keep work area dry	Sum
900	<b>CONCRETE FORMWORK AND REINFORCEMENT</b>	
	CONCRETE CAST AGAINST EXCAVATED SURFACES	
	10MPA/19MM CONCRETE SURFACE BLINDING UNDER FOOTINGS AND BASES	m3
	30MPA/19MM CONCRETE SLABS, BASES, FOUNDATIONS & SUMPS	m3
1000	<b>TEST CUBES</b>	
	Sampling and testing 150x150 mm concrete cubes	no.
1100	<b>SMOOTH FORMWORK</b>	
	<b>Smooth formwork to sides</b>	
	• Rectangular columns	m2
	• Beams	m2
	• Edges exceeding 300mm high	m2

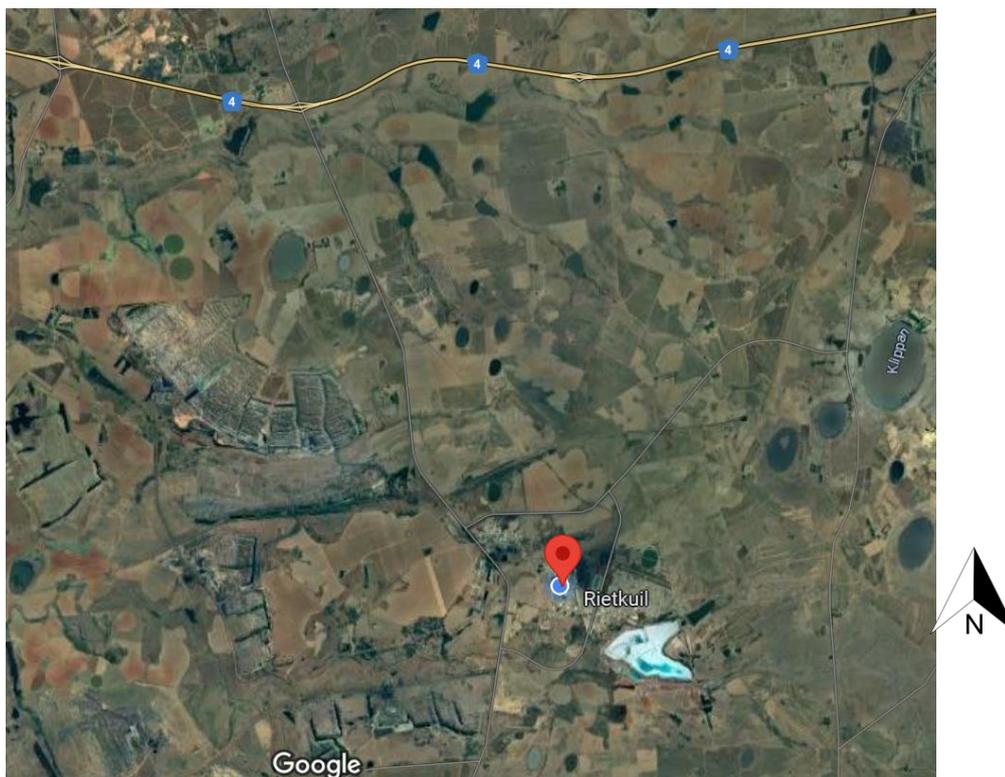
	<b>Smooth Formwork soffits</b>	
	• Slabs	m2
	• Rectangular beams	m2
1200	<b>REINFORCEMENT</b>	
	<b>High tensile steel reinforcement to structural concrete</b>	
	Various bar diameters	tons
	<b>Mild steel reinforcement for links (as approved by Employer)</b>	
	Various bar diameters	tons
1300	<b>BRICKWORK</b>	
	<b>Brickwork of common clay bricks</b>	
	• 110mm Walls	m2
	• 230mm Walls	m2
	<b>Face brickwork</b>	
	• Extra over brickwork for face brickwork	m2
	Prestressed concrete fabricated lintels	m
	110 x70mm Lintels in lengths not exceeding 3m	m
1400	<b>WATER PROOFING</b>	
a	<b>Damp proofing of walls and floors</b>	
	One layer 375-micron embossed damp proof course	m2
b	<b>Water Proofing to Roofs</b>	
	One-layer waterproofing with 75mm side and 100mm end laps, torch-fusion sealed to and including bitumen primed surfaces to:	m2
1500	<b>PLUMBING AND DRAINAGE</b>	
	<b>Class 34 uPVC pipes and related fittings</b>	
	• 110mm dia.	m
	• 160mm dia.	m
	• 200mm dia.	m
1600	<b>ANCILIARY STEEL ITEMS</b>	
	Allowance Catladder, covers, gratings, handrails & etc for floor drainage trenches). Items to be Stainless Steel	tons
1700	<b>DESIGN &amp; CONSTRUCT OPERATORS OFFICE</b>	Sum
1800	<b>DESIGN &amp; CONSTRUCT ACCESS ROAD</b>	Sum
1900	<b>DESIGN &amp; INSTALL ACCESS CONROL FEATURES (Steel frame gate, remote operated motor)</b>	Sum
	Allowance for access automation/motorised sliding gates	
	<b>SUB TOTAL CIVIL WORKS</b>	

	<b>MECHANICAL, ELECTRICAL, C&amp;I, SAFETY AND CONFIGURATION</b>	
<b>2000</b>	<b>POWER SUPPLY &amp; ELECTRICAL DESIGN, SUPPLY &amp; INSTALLATIONS</b>	Sum
	Contractor is responsible for <u>Testing &amp; Commissioning</u>	
<b>2100</b>	<b>C&amp;I DESIGN, SUPPLY &amp; INSTALLATIONS</b>	
	· Optical Smoke/Flame Detectors.	Item
	· Camera surveillance system.	Item
	· PA system linked to Arnot's system.	Item
	Contractor is responsible for the complete field design & engineering including <u>interfacing, construction, manufacturing, testing and handover of all C&amp;I works</u>	
<b>2200</b>	<b>FIRE PROTECTION DESIGN, SUPPLY &amp; INSTALLATION</b>	Item
<b>2300</b>	<b>SIGNAGE SUPPLY &amp; INSTALLATION</b>	Sum
<b>2400</b>	<b>PLANT &amp; COMPONENTS LABELLING</b>	Sum
	<b>SUB TOTAL MECHANICAL, ELECTRICAL, C&amp;I, SAFETY AND CONFIGURATION</b>	
	<b>TOTAL</b>	

# C3: Scope of Work

## 3.1. DESCRIPTION OF THE DESIGN WORKS

### 3.1.1. Overview of the project area



**Figure 1: Locality Plan showing Arnot Power Station**

The project is at Arnot PS which is located roughly 40km South-East of the town of Middelburg within the Mpumalanga province. The project site area is located immediately South of Arnot PS close to the Southern cooling towers by the contractor's yard. The locality of the Arnot PS is shown in Figure 1. The general view of the existing waste storage facility is as shown in Figure 2 below.

The approximate coordinates of the access gate for the station are as follows:

- Latitude 25°56'20.3"S
- Longitude 29°47'57.5"E



**Figure 2: General view of the Scrapyard at Arnot PS**

### **3.2. EMPLOYER'S OBJECTIVES AND PURPOSE OF THE WORKS**

During normal operations of the station, various types of hazardous wastes are generated. Such wastes produced are waste oil stored in skips, oil contaminated waste, waste oil drums, chemical waste drums, scrap metal waste, lagging waste etc. The waste storage facility in which these hazardous wastes are temporarily stored does not comply with the requirements stipulated in the National Environmental Management Waste Act. In addition, these facilities pose a threat to the environment and/or health of the employees entering the power station.

Therefore, the *Employer's* objective is to appoint a *Contractor* to redesign and/or upgrade and provide construction services for all the works required for a temporary hazardous waste storage facility at Arnot PS that will comply with all applicable environmental legalisations.

The works will be divided into two phases.

Phase 1: Design of the facility for review by the *Employer* and approval by the Authorities

Phase 2: Construction of the facility.

### **3.3. SCOPE OF WORK REQUIREMENTS**

The *Contractor* is responsible for the supply, design and construction/installation and commissioning of the below mentioned *works* for temporary hazardous waste storage facility at Arnot PS. The design and/or construction drawings must be submitted to the *Project Manager* in advance in order for the *Employer* to review and accept. A method statement, clearly defining the execution of the *works*, must be submitted to the *Project Manager* for approval as part of the design package.

#### **3.3.1. Design responsibility requirements**

The *Contractor* undertakes the below mentioned design responsibility.

- i. The Contractor takes full professional accountability and liability for all designs done by the Contractor.
- ii. The Contractor is responsible for the design of all temporary works required for the execution of the project.

- iii. The Contractor takes full professional accountability and liability for all designs of all temporary works required for execution of the project.
- iv. All designs, design reports and construction drawings prepared by the Contractor are signed off by an ECSA Professionally registered Technologist and/or Engineer who takes full professional accountability for the designs.
- v. The Contractor is mandated in terms of Construction Regulations 2014: Duties of Designer, 6(1) g to fulfil the duties described therein for the detailed designs done by the Contractor. Any risk associated with the Contractor's design is highlighted to the Employer together with mitigation measures.
- vi. The Contractor's design is required to be in accordance with all National Standards and Specifications referenced in this works information as indicated in Section 2.2.
- vii. The Contractor submits all designs drawings in electronic format, i.e., drawings in CAD format (Microstation \*.dgn or AutoCAD \*.dwg) and calculations, specification, etc. in Microsoft Office, Microsoft Excel or .pdf format. Drawings are to be done on Eskom drawing sheets, which will be provided. The Contractor's title block, etc. can be added to the left of Eskom's title block.

### **3.3.2. Civil Works requirements**

The *Contractor* design team is responsible to ensure all the civil & structural design requirements for the waste storage facility are provided. The concept design of all civil and structural requirements for the new/upgraded hazardous waste facility should include a review and/or assessment of the current waste site (Scrapyard) and a feasibility study on the different design options to be considered for its upgrade.

#### **i. Hazardous waste storage area**

- Design and construct a steel structure according to the produced design drawings and specifications.
- Design and construct concrete floor to slopes with waste sump and fire /oil trap complete with supports and covers/ gratings to specification.
- Supply and fit steel IBR profile (0.8 thick mm) and clear polycarbonate IBR profile roof sheeting, complete with all flashings to specifications.
- Supply and fit steel IBR profile and clear polycarbonate IBR profile wall cladding, complete with all flashings to specifications.
- Design, supply and install emergency shower to manufacturer's instructions.
- Design, supply and install all water and drainage as per the requirements.
- Design, supply and install a suitable capacity overhead crane for the waste storage area's operational requirements. The overhead crane includes the overhead crane beam, hoist, and long and cross travel drives, crane wheels, rails, rail stops and brakes.

#### **ii. Operator office, kitchen & toilets building.**

- Design and construct a brick building with a kitchen and toilets to specifications.
- Supply and fit steel IBR profile roof sheeting, complete with all flashings as per drawings and specifications.
- Design, supply and install all water and drainage requirements.
- Design, supply and install all electrical, lighting and air conditioning requirements.

#### **iii. Access road**

- Design and construct an access road and its drainage system to specification.

### 3.3.2.1.1. Design criteria and operations

The *Contractor* will use the following design criteria to develop the concept to detail design of the waste storage facility:

- Eliminate the environmental impacts caused by the store hazardous waste.
- The facility is required to cater for the placement of 6 m<sup>3</sup> closed skips.
- Access controlled environment is required for the storage facility.
- Ease of removing and placing of skips.
- Ease of constructability and maintainability of the facility.
- Design for purpose and cost saving in mind.
- Compliance to the applicable codes and standards.

During normal station operations, the below are the waste quantities/volumes for the various types of hazardous wastes Arnot PS generates.

- Oil-contaminated waste in skips – 4 x 6m<sup>3</sup> skips per month.
- Waste oil drums – 40 x 210 litres per month
- Chemicals waste drums -1 x year
- Scrap metal waste - 138ton per month
- Lagging waste – 10 x compactor truck during outages
- Fluorescent tubes waste – 210 bulbs per month

The *Contractor* designs and size the transfer facility in line with Category C (2); which will entail the registration of the new site with DEFF.

### 3.3.2.1.2. Waste facility operations

The *Contractor* will be responsible for the design, production of fabrication drawings and the installation of the area earmarked for oil contaminated waste skips and other types on wastes as indicated in 3.3.2.1. Since the facility is located next to an access road, the functioning of all gates should not encroach onto the road. For this requirement to be satisfied, the bund facility storage area is required to be filled with concrete.

Waste skip trucks are to be utilised to collect the temporarily stored waste at the facility. The structure should be strategically positioned to allow sufficient space for the skip trucks to turn and reverse up the installed ramp to access the waste skips. In addition, there should be sufficient clearance between the floor slab and the roof of the facility to ensure that the waste skips can be accessed. The drainage sump is to flush with water and a mobile pump is to be utilised to regularly drain the sump, to prevent overflows.

Forklifts will be utilised to place and remove the oil and chemical waste barrels/drums from the facility to the collection vehicle whereby the collected waste will be transported off-site for disposal. The facility should be designed to ensure sufficient space is available for forklift to turn and reverse around the entire structure.

### **3.3.2.1.3. Design deliverables**

The *Contractor* will supply all the construction drawings as output to the *Works Information* in order for him to execute the project as per specifications. The design package will include but not limited to:

- i. Detail architecture specifications in the form of construction drawings.
- ii. Site layout drawings.
- iii. Detailed structural steel layouts and specifications in the form of construction drawings.
- iv. Detailed concrete layouts and specifications in the form of construction drawings.
- v. Detailed reinforcement drawings
- vi. Bending schedules
- vii. Detailed access road layouts and specifications in the form of construction drawings.
- viii. Modified fencing arrangement and access gate details.

### **3.3.3. Electrical Requirements**

The *Contractor* design and provides construction of low energy lighting for the facility and its affected area. The *Contractor* provides the electrical detail designs, manufactures, constructs, supplies and installs the Distribution Board, Lighting Luminaires, plug sockets, welding plugs, power cables including cable racks and ensure the new waste facility is bonded to the existing earth mat in accordance with the associated standards, the designs should be performed in accordance with SANS 10114-1 (Interior Lighting Design), SANS 10142-1 (The wiring of premises part 1: Low voltage installations) and 240-55714363 (Coal Fired Power Stations Lighting and Small Power Installation Standard).

#### **1.1.1.1 Lighting design requirements**

- i. Supply and install sufficient switches for switching on and off the high bay luminaires.
- ii. Supply and install High Pressure Sodium, Mast-system Lighting.
- iii. The Mast-system Lighting shall also be switched on and off via the day light switch.

The manufacturing, construction and testing of interior and exterior lighting accessories shall be done in accordance with SANS 10142-1 (The wiring of premises part 1: Low voltage installations), 240-55714363 (Coal Fired Power Stations Lighting and Small Power Installation Standard, and SANS 10114-1 (Interior Lighting Design)

#### **3.3.3.1. Distribution Board requirements**

The Distribution Board shall be designed in accordance with the latest standard for Coal Fired Power Stations Lighting and Small Power Installation (240-55714363) as well as SANS 10142-1 (The wiring of premises part 1: Low voltage installations).

#### **1.1.1.2 Power supply requirements**

The power cables and cable racks shall be done in accordance with 240-56227443 (Requirements for Control and Power Cables for Power Stations Standard).

### 1.1.1.3 Earthing and Lightning Protection Requirements

For the earthing and lightning protection Works, the *Contractor* ensures:

- i. All new electrical equipment to be installed is earthed and properly bonded to the existing earth mat in accordance with the requirements of SANS 10142-1 and the Earthing and Lightning Protection Standard (240-56356396).
- ii. Conduct an earth continuity test and provide certification for quality controls.
- iii. Ensure that new equipment is interfacing with all the other system requirements of the plant/installation.
- iv. Produce all documentation and drawings for the design.

The earthing and lightning protection will comply with the Earthing and Lightning Protection Standard (240-56356396). In addition, the lightning protection will comply to SANS 61024 and SANS 10313.

### 3.3.4. C&I Requirements

- i. The *Contractor* designs and installs the following systems .
  - Optical Smoke/Flame Detectors.
  - Camera surveillance system.
  - PA system linked to Arnot's system.

### 3.3.5. Fire Protection requirements

- ii. The Contractor compiles a fire risk assessment and fire detection and protection strategy as part of the design package submittal, for approval by the Employer.
- iii. The fire risk assessment of the holding facility to include probable ignition sources, fire hazards, propagation, fire loads, and possible fire consequences.
- iv. The combination of facilities to be provided in a warehouse, including the design of buildings, all safety-related and fire-related facilities shall be determined by a logical process that considers all relevant circumstances, risks and uses to which the warehouse will be subjected.
- v. The requirements for fire detection and protection systems are in accordance with the latest revisions of SANS 10400, SANS 10400 T, SANS 10400 W, SANS 10139.
- vi. The storage areas are classified in classes of occupancy as per SANS 10400
- vii. The assessment and design strategy for fire protection should consider the following: segregations; separation; containment; spillage control; fire traps; construction materials; adequate ventilation where there are possible fumes; smoke or heat control systems if required etc.

- viii. Where highly flammable gases or flammable liquids are stored, effective extraction shall be provided and the ventilation shall be so efficient as to prevent the formation of an explosive atmosphere
- ix. Fire areas separating elements : Fire resistance of each wall that acts as a separating element shall be at least a) 120 min in the case of a wall adjoining a storage area of occupancy class J1, and b) 60 min in the case of a wall adjoining a storage area of occupancy class J2 or J3 Where piping, ducting and electric cables penetrate a separating wall, they shall be sealed around as to prevent the spread of fire.
- x. In areas where flammable are stored, appropriate measures shall be taken to prevent the accumulation of electrostatic charges or to discharge these under controlled circumstances. The relevant provisions of SANS 10123 shall apply
- xi. All exit doors shall be easy to open in the dark or in dense smoke.
- xii. Emergency exits shall be provided in addition to the main exit
- xiii. All openings in separating walls shall be fitted with self-closing fire-door assemblies of at least the same fire resistance as the wall itself, and that comply with the requirements of SANS 1253.
- xiv. The design and installation of fire detection system, fixed firefighting equipment and portable extinguishers will be informed by the fire risk assessment

### **3.3.6. Signage requirements**

i. The *Contractor* is required to provide applicable signage's for the following system:

- viii. Fire Protection system.
  - ix. Hazardous waste demarcated locations/areas as per SANS Code 0228 requirements.
  - x. Access control system
- ii. The Contractor provides and installs all signs in accordance with SANS 1186.
- iii. Symbolic safety signs shall comply with SANS 1186-1 and shall be used as necessary outside the warehouse to denote safety-related features of the premises, including the following: a) "no smoking", "no naked flames" and "no fires" restrictions and other specific hazard warnings; b) the positions and types of fire-related equipment (such as extinguishers, hose reels, hydrants, mains water supplies and alarm switches); and c) areas in which protective clothing or apparatus is required; d) first-aid stations, equipment and apparatus; and e) emergency exit routes and other directional information.
- iv. Every type of storage area inside a warehouse shall be clearly demarcated, for example separate storage areas for poisons, flammables and corrosives shall display the relevant hazard class.

## **3.4. PROJECT DELIVERABLES**

- Project plan detailing all the design activities and timelines for review and acceptance by the *Employer*.
- Investigation report(s) for further engineering and/or environmental studies that may be required to conclude detail design phase for the infrastructure in Section 3.3.
- Presentation of the final design to DWS/ DEFF for approval if required.
- Approved detail design report and drawings outlining the design of the entire facility with the associated infrastructure.
- Construction bill of quantities.
- Operating plan manual outlining the new landfill operations.
- Closure and rehabilitation plan report for the landfill.

### **3.5. PROCEDURE FOR SUBMISSION AND ACCEPTANCE OF THE DESIGNS**

The *Contractor* or his appointed *Consultant* (*herein used interchangeably*) is to carry out this work in accordance with the requirements and standards indicated in Section 3.1 and with the required legal and statutory requirements. The designer is permitted to use best practice engineering solution and make reasonable assumptions to complete the works.

All the designs shall be passed on to the *Project Manager* for review and approval prior to placement of any order or procurement of the designs or submission to the authorities.

#### **3.5.1. Design Review Procedure**

Where the *Consultant* has design work in their scope, the *Consultant* is the Design Authority as defined in the Design Review Procedure (240-53113685). The *Consultant* is responsible for following this design procedure and conducting all the design reviews as specified in this procedure. The *Consultant* is responsible for conducting the following design reviews:

- i. Detail Design Freeze Review
- ii. Integrated Design Review

#### **3.5.2. Process for Submission of Documents**

The *Consultant* submits all documents according to the accepted VDSS. The process for the submission of documents is described below:

- i. The *Consultant* submits the documents and drawings to the *Project Manager*.
- ii. The *Project Manager's* Document Controller registers the documents.
- iii. The *Project Manager's* Document Controller will supply the documents/drawings to all relevant parties within the *Project Manager's* project team.

- iv. The Project Manager's team reviews the documents/drawings and will submit all comments or inputs to the Project Manager and the Project Manager submits to the Consultant for consideration.
- v. If the Project Manager finds major deficiencies in the submitted documents and drawings, the Consultant revises the documents and drawings and resubmits to the Project Manager.
- vi. The Project Manager reviews the documents and drawings and if no major deficiencies are found, the Consultant organises a Design Review session.
- vii. The Project Manager and the Consultant conduct a Design Review.
- viii. If any fundamental errors were found in the designs or further actions are required, the Consultant record all concerns raised and revises the designs.
- ix. The Consultant organises a Design Review session once all designs were revised according to the concerns raised by the Project Manager.
- x. If no fundamental errors were found in the designs during the Design Review session, the Consultant compiles the Design Review minutes or report and submits it to the Project Manager.
- xi. The Project Manager's Document Controller registers the report.
- xii. The Project Manager's team reviews the Consultant's report/minutes. If the report/minutes are not acceptable, the Consultant revises the report/minutes and resubmits to the Project Manager.
- xiii. The Project Manager will accept the Consultant's design once the report/minutes are accepted by the Project Manager's team.

## **4. MANAGEMENT AND START-UP**

### **4.1. MANAGEMENT MEETINGS**

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

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

All meetings shall be recorded using minutes or a register prepared and circulated by the person who convened the meeting. Such minutes or register shall not be used for the purpose of confirming actions or instructions under the contract as these shall be done separately by the person identified in the *conditions of contract* to carry out such actions or instructions.

All meetings are recorded using minutes and attendance registers prepared and circulated by the person who convened the meeting.

During the scheduled meetings, the *Contractor* reports the overall progress and the following as a minimum requirement:

- xiv. *Contractor's* current activity progress and planned finish dated

- xv. *Contractor's* planned start and finish dates for the works
- xvi. Discussion on the *Contractor's* programme
- xvii. Health, safety and quality issues
- xviii. The progress of any other relevant activities
- xix. Discussion on any technical and commercial issues
- xx. Problem areas or concerns.

## **4.2. DOCUMENTATION CONTROL**

All communications from the *Contractor* carries the contract number and title and is numbered sequentially on the basis of the communication source.

The *Employer* responds in likely manner, numbering communications. Note: All correspondence headings include:

- i. Arnot Power Station
- ii. The Contract or order description
- iii. The *Employer's* contract or order number
- iv. The correspondence subject matter

Where appropriate, the correspondence includes the *Employer's* reference, i.e., initials of contact person and *Employer's* letter reference.

All documents, correspondence, certificates, and all wording on drawings are to be in English. The *Employer* will not undertake any translation, and any errors or misunderstandings made by the *Contractor*, or his sub-contractor and their agents and officers shall be deemed to be the responsibility of the *Contractor*.

Transmittal letters are provided with each document submittal. The transmittal letter must include the *Contractor's* drawing number, revision number, and title for each drawing attached. Each drawing title must be unique and must be descriptive of the specific drawing content.

### **4.2.1. Change Management**

Design change management is performed in accordance to the latest revision of the Eskom Project Change Management Procedure (240-53114026) [1] and the *Employer* ensures that the *Contractor* is provided with latest revisions of the procedure. Any uncertainty regarding this procedure should be clarified with the *Employer* and clarification updates are reflected in updated versions of this procedure.

### **4.2.2. KKS Classification System**

#### **4.2.2.1. Plant Codification**

The KKS Keypart is used by the *Contractor* for classifying and designating the new equipment and infrastructure and their associated documents for the waste facility. The rules for applying the KKS codes are contained in the KKS Standards that is to be provided by the *Employer*. The *Contractor* uses the Arnot KKS Coding Manual which will be advised after signing of the Contract Agreement.

Codification of equipment and infrastructure is generated by the *Employer*; the *Contractor* submits a request for coding of instruments and equipment to the *Project Manager*. Labelling of all

equipment, infrastructure and documentation supplied as part of *works* is the responsibility of the *Contractor*.

The *Contractor* makes use of the relevant codification standard provided by the *Employer*. Unless otherwise stated, the codification is limited to the lowest component level of coding and applies to all systems included in the *works*.

English descriptions are provided for all labelling. Abbreviations to description on labels are generally not acceptable. Where abbreviation is unavoidable due to the limited number of characters that can be engraved on labels abbreviations are in accordance with the with the *Employer's* abbreviation standard. Plant coding is done according to the following standards:

- i. 4011 - Plant Labelling & Coding Procedure
- ii. 240-109607332 - Eskom plant Labelling Abbreviation Standard

The *Contractor* is responsible for ensuring the accuracy, completeness, and consistency of the designations in all documents. This applies both to designations within documents (Plant designations) and of documents (document designations). The *Contractor* submits these for the *Employer's* acceptance.

The *Contractor* provides the *Employer* with outline drawings or diagrams showing the *Contractor's* reference coding for materials as per schedule of submittals.

#### **4.2.2.2. Plant Labelling**

The *Contractor* manufactures and installs labels according to the Arnot Plant Labelling Guideline that will be provided for all the new equipment and infrastructure. Detailed nameplate or label lists with the service legends, including the KKS code are prepared by the *Contractor*, are to be submitted to the *Employer* for review and comment before commencing with the manufacturing of labels.

### **4.3. ENVIRONMENTAL CONSTRAINTS AND MANAGEMENT**

The *Contractor* ensures that all goods, services or works supplied in terms of the Contract comply with all applicable environmental legislations. The *Contractor* is responsible for keeping the work area clean of any environmental waste. All waste introduced and/or produced on the *Employer's* premises by the *Contractor* for this Contract, is handled in accordance with the minimum requirements for the Handling and Disposal of Hazardous Waste in terms of the Government Legislation as proclaimed by the Department of Water Affairs and Forestry and *Employer's* environmental requirements (Waste Management Procedure [32-245] and Management of Waste at Arnot PS).

All environmental incidents must be reported to the *Project Manager* within 24 hours of such occurrences. All environmental incidents occurring on the Project Site and/or on the *Employer's* property must be recorded detailing how each incident was dealt with in an Environmental Incident register.

### **4.4. QUALITY ASSURANCE REQUIREMENTS**

#### **4.4.1. General**

The *Contractor* complies with the *Employer's* quality and technical requirement as included in this works information.

#### 4.4.2. Quality Management Documents Requirements

The *Contractor* is required to compile and submit to the *Project Manager* all QCPs and ITPs for review and acceptance. The *Contractor* submits to the *Project Manager* with a detailed contract organogram showing the quality personnel to be used in the *contract*.

The *Contractor* submits as a minimum the following documents, as required by the *Project Manager*, which requirements does not constitute a compensation event, during the execution of the works:

- Updated QCP register including the *Client's* Intervention points.
- Inspection notifications accompanied by their inspection report.
- Non-conformance and Defect registers and reports.
- Updated site inspection schedules.
- Inspection and test reports
- Monthly contract quality progress report
- Data books for the completed *works*.

#### 4.4.3. Quality Responsibility

The *Contractor* is accountable for the quality of the output and liable for any failures. The *Contractor* is responsible for defining the level of intervention of QA/QC or inspections. Such intervention points are to be in line with the *Employer's* requirements.

The *Contractor* is responsible for defining the level of intervention of QA/QC or inspections to be imposed on all Sub-Contractor's, suppliers and sub-suppliers and must ensure that these are in line with the *Employer's* requirements.

The intervention requirements take into consideration the criticality of the *plant* and *materials*. The interventions points include all witness, hold, verification, review and approval points required by the *Employer*. Failure by the *Contractor* to allow for such intervention points will constitute a non-conformance.

#### 4.4.4. Inspections

The *Contractor* is required to conduct sufficient inspections and tests to satisfy himself that all requirements of the Works Information are being met and the results of inspections and tests shall be submitted to the *Project Manager* in accordance with the *Contractor's* Quality Management System (i.e., accepted QCP/ITP). The *Employer* only verifies that the *works* is conducted as per the *contract*.

Where the *Contractor's* or *Employer's* inspections and/or tests reveal that the requirements of the Works Information have not been attained, the *Contractor* is required, at his expense, to rectify the work to the extent that it does conform with the Works Information.

The *Contractor* drafts a QCP or ITP which shows each activity from the Works Information and submits to the *Project Manager* for acceptance. The *Contractor* provides suitably qualified personnel to conduct onsite inspections.

The *Contractor* ensures that all *works* are inspected and approved before the *Employer* is invited for verification/inspection.

The *Contractor* provides a minimum of 2 working days' notice when inviting the *Employer* to verify/inspect the *works*. The notice to the *Employer* is to contain as a minimum the type of inspection to be conducted, structure/component to be inspected and all relevant QC report and/or documents to be filled/completed.

Damages because of the *Contract's* failure to comply with the inspection notice period as specified in the above paragraph will be borne by the *Contractor* and no compensation events will arise out of this.

#### **4.4.5. Non-Conformance and Defects**

Where NCR's and defects notifications are issued, the *Contractor* acknowledges receipt within 48 hours and proposes corrective and preventive actions to the *Project Manager* as per the *contract* response period. The corrective and preventive actions will include the implementation and completion dates. Progress on all NCR's and defect notifications issued to the *Contractor* must be report the *Project Manager* on a weekly basis.

The *Contractor's* quality manager keeps a register of all NCR's and defect notifications issued. Deviations from the *contract* are treated as a non-conformance. Records of NCRs and Defect Notifications are kept and form part of the data book records.

#### **4.4.6. Quality Reporting**

The *Contractor* submits a monthly quality report, on the last working day of the month, to the *Project Manager*. The report includes but not limited to the following:

- i. A register of NCRs and defects
- ii. Updated QCP/ITP register
- iii. QA monthly report summary
- iv. Planned and completed local inspection dates
- v. Completed and outstanding inspections
- vi. Principal material orders and stocks on site
- vii. *Contractor's* equipment, plant and temporary works on the site or due to be delivered to or removed from the site.

#### **4.4.7. Preservation and transportation Requirements**

The *Contractor* is responsible for ensuring that all products are preserved in their appropriate manner as described in their specifications or in Eskom's Preservation, Shipping and Transportation procedures as applicable. The *Employer* may choose to witness the packaging, loading, and offloading of the products depending on their criticality, this will be indicated in the intervention points on the QCP/ITP documents.

The *Contractor* also ensures that all storage requirements for products are properly implemented to preserve the products against adverse conditions, deterioration, damage, etc. Storage and preservation procedures for the different products must be submitted to the *Project Manager* for review and acceptance. The *Employer* may request to inspect the stored products at any given point during the storage period of the product.

### **4.5. PROGRAMMING CONSTRAINTS**

#### **4.5.1. Methods and Procedures**

##### **4.5.1.1. General**

Construction methods must be of such a nature that no person, property, or improvements in the vicinity of the works is endangered. The *Employer* accepts no responsibility for any *works* executed without written permission outside the site of *works*.

#### 4.5.1.2. Method Statement

The *Contractor* submits a detailed Construction Method Statements for each activity of his work, together with activity durations, to the *Project Manager* for review and acceptance prior to starting any work. As a minimum, the following requirements are to be included in the method statement:

i. The scope of the Method Statement

ii. Activity:

The Contractor illustrates the description of the major activities as of the construction programme.

iii. Quantity:

The method statement shows the quantity of that activity taken from the Bill of Quantities with its unit of measurement which is directly influenced by the method to be used.

iv. Method

The Method Statement provides a short but complete description of how the activity will be executed and highlighting the risks associated with the method to be used.

v. Sequence

The Method Statement shows the sequence of the activities that will be required to perform a particular task taking into consideration access restrictions and safety requirements.

vi. Resource

All necessary plant, equipment and labour required to complete a particular activity must be indicated. The Method Statement is to include a clear description of the responsibilities of the *Contractor's* personnel involved in the activity, including (where applicable) his Project Manager, Site Quality Manager, Site Engineer, Health and Safety Manager, Technical Office Manager, Production Manager, Supervisor, Environmental Officer and other personnel required for the activity work.

vii. Duration

The duration of the activity will be indicated in the Method Statement.

viii. Quality control points as accepted by the *Project Manager*

ix. Temporary works to be used including *Project Manager's* acceptance where such is supported off existing structures

x. Rigging studies and design calculations where applicable

xi. Manufacturer's literature/ Technical Data Sheets for all materials used including product description, composition, material and performance properties, installation and application procedures, use limitations and recommendations.

xii. Plan for confining, collecting, and disposing of broken concrete and other waste materials as a result of removal operations, where applicable

xiii. Works required to safeguard existing infrastructure and services.

xiv. Risk assessments associated with shutdown of plant/ equipment where deemed necessary, in order to execute the works

All work Method Statements include the name and qualification of the personnel working in the specified activity in conjunction with the requirements as set out in Supplier Quality Management Specification (240-105658000).

## 5. CONSTRUCTION

### 5.1. NOTIFICATION OF CONSTRUCTION WORK

The Construction Regulations require that the *Contractor*, as the main *Contractor*, inform the provincial director of the Department of Labour before carrying out any work on the Site where the work:

- i. Involves the demolition of a structure exceeding a height of three meters, the use of explosives or the dismantling of fixed plant at a height greater than three meters.
- ii. Exceeds 30 days or will involve more than 300 person days of construction work and includes excavation work deeper than one meter: or working at a height greater than three meters above ground or a landing.

### 5.2. GENERAL

The *Contractor* carries out the civil, structural, and building portion of the *works* in accordance with the Occupational Health and Safety Act (85/1993): Construction Regulations, 2014 the National Building Regulations, the South African Environment Protection Act, the waste management code of practice and the regulations promulgated thereunder and Eskom Safety, Health, Environment and Quality (SHEQ) Policy 32-727 for all *works*.

The *Contractor* provides all labour, installation tackle, gear and tools, vehicles, rigging tackle, temporary works/ scaffolding including any geotechnical works required, craneage and foundations for such, consumables, bulk mixing plant, site workshops, site offices, stores, facilities, Equipment, and cleaning materials required to Provide the Works. The *Contractor* is responsible for the supply/ procurement of Plant and Material, fabrication/manufacturing, shop detailing, painting/ galvanising, handling, shipping, storage, testing, delivery, off-loading, erection/construction, disposal of debris, final painting and finishing complete in every detail of structural steelwork, concrete structures, miscellaneous support steel and concrete, access platforms, staircases, foundations, equipment, and spares required to supply the *works*.

The *Contractor* provides all the test equipment for testing, the sub-assemblies and the functional groups for site testing, commissioning, and performance testing.

The *Contractor* provides all necessary temporary works required to complete the *works*. This includes scaffolding, suspended platforms, rope access work, material hoists, cranes, services etc.

During the erection period, the *Contractor* as a builder and/or user of machinery performs 'building work' in terms of OHS Act. The *Contractor*, before taking occupation on a Site, obtains a permit to work from the *Project Manager*. Before a part of the Site is released for access to Others, the said part conforms to the safety requirements of OHS Act. The party taking access then becomes the 'User' in terms of the OHS Act. The releasing of a part of the Site in the above-described manner does not relieve the '*Contractor Giving Access*' of any of his obligations in terms of his contract with the *Employer*. No unauthorised person(s) enters into any prohibited/restricted area. Daily dairies/logs/data books are kept and signed by the *Contractor* and are also signed off daily by the *Supervisor*. The following is to be recorded (as a minimum) in the daily dairies:

- i. Manpower and Equipment used,
- ii. Weather conditions,

- iii. Description of any unique occurrences, incidents, or accidents,
- iv. Delays and reasons for the delays,
- v. Industrial relations abnormalities,
- vi. Interface and access problems,
- vii. Description of activities to be performed,
- viii. Recording of on-site tests, for example a concrete slump test.

In addition to the, the *Contractor* adheres to the following:

- i. The Contractor is restricted to the Site.
- ii. The Contractor is not to enter any other areas and ensures that his employees abide by the regulations.
- iii. The Contractor performs all hoisting and lifting by qualified riggers.
- iv. The Contractor's Equipment does not impair the operation or access to the plant.
- v. The Contractor provides any temporary or expendable materials required for the storage of material.
- vi. The Contractor safeguards and secures all items whilst in the Contractor's custody and control, until completion of the works.
- vii. The adjacent plant and equipment are not modified without written permission from the Project Manager. Modification in this sense includes, but is not limited to the following:
  - o Welding onto existing plant,
  - o Drilling into structural steel or concrete,
  - o Cutting or removing
  - o Loading adjacent structures.

All items that are assembled and constructed off site are listed and provided to the *Project Manager*. From this an ITP is developed between the *Project Manager* and the *Contractor* to determine the intervention points.

### **5.3. WORK METHOD STATEMENT**

The *Contractor* provides a detailed work Method Statement for each activity of his work, together with activity durations. In addition to a description of the method of constructing the *works*, the *Contractor*, in his work Method Statement, includes the following as a minimum:

- i. The scope of the particular Method Statement.
- ii. A comprehensive description of the activity.
- iii. Construction methodology and sequence of construction taking into consideration access restrictions and safety requirements.
- iv. How the Contractor has considered the constraints for constructing the works, including those listed in [provide section number where constraints were listed].
- v. A clear description of the responsibilities of the Contractor's personnel involved in the activity, including (where applicable) his Project Manager, Site Quality Manager, Site Engineer,

Health and Safety Manager, Technical Office Manager, Production Manager, Supervisor, Environmental Officer and other personnel required for the activity work.

- vi. Reference to applicable statutory requirements and how the requirements have been taken into account.
- vii. Health, safety and quality control for the activity.
- viii. All plant, equipment and machinery required to complete activity.
- ix. Quality control points as accepted by the Project Manager.
- x. Laydown areas requirements.
- xi. Temporary works to be used including Project Manager's acceptance where such is supported off existing structures.
- xii. Rigging studies and design calculations where applicable.
- xiii. Manufacturer's literature/ Technical Data Sheets for all materials used including product description, composition, material and performance properties, installation and application procedures, use limitations and recommendations.
- xiv. Plan for confining, collecting and disposing of waste materials as a result of removal operations, where applicable.
- xv. Works required to safeguard existing infrastructure and services.
- xvi. Risk assessments associated with shutdown of plant/ equipment where deemed necessary, in order to execute the works.

All work Method Statements include the name and qualification of the personnel working in the specified activity in conjunction with the requirements as set out in Supplier Quality Management Specification (240-105658000). All Method Statements are reviewed and accepted by *Project Manager* prior to starting any work.

#### **5.4. GENERAL CONSTRUCTION WORK METHOD STATEMENT/CONSTRUCTION EXECUTION PLAN**

The *Contractor* submits a general Construction Work Method Statement taking into consideration the various phases of the project. This Method Statement clearly illustrates how the *Contractor* accounts for the risks of this project, [*including the risk of not completing the construction within the outage duration, add if applicable*]. This Method Statement is tailored to address the specified project objectives and requirements. This Method Statement adequately deals with the critical characteristics of the project.

The Construction Work Method Statement includes, at minimum, the following:

- i. Constraints identified and considered by the Contractor.
- ii. Interfacing with Others; the Contractor illustrates an understanding of the work that is to be completed by Others and accommodates for the completion of such work in his methodology.
- iii. Description and illustrations of a construction traffic plan, use of laydown areas and plot plan.

- iv. Shifts and hand overs for the various sections of the works, this information is to enable the Employer to integrate the programmes of the various contractors.
- v. Design tools and systems that the Contractor plans to use.
- vi. Detailed risk assessment which lists risks specific to the works and is accompanied with associated proposed mitigations.
- vii. List and description of plant and machinery required to carry out the civil and structural components of the works.
- viii. Inspection and quality control plan.
- ix. A clear description of the responsibilities of the Contractor's personnel involved with the works, including (where applicable) his Project Manager, Site Quality Manager, Site Engineer, Health and Safety Manager, Technical Office Manager, Production Manager, Supervisor, Environmental Officer, Fabricator, Erection Engineer, Shop detailer, Transporter and other personnel required for the civil and structural works.
- x. Construction sequencing considerations which take into account the constraints as indicated in this Works Information.
- xi. An investigation into the possibility of carrying out work prior to the outage or post outage, if applicable. This investigation clearly defines all activities which can be carried out prior to outage (if any) and is reflected accordingly in the Construction Programme, [refer to section where requirements for construction program are provided].
- xii. A Concrete Works Method Statement which describes the following as a minimum:
  - o Concrete sourcing.
  - o Testing facilities.
  - o Testing procedures.
  - o Concrete placing and curing.
- xiii. A Steelworks Method Statement (where applicable) which describes the following as a minimum:
  - o Corrosion protection and painting.
  - o Method of fabrication and erection.
  - o The physical location of manufacturing and fabrication.
  - o Erection procedures which includes considerations for modularisation and construction sequencing, including a lifting and rigging plan.
  - o Welding procedures that the *Contractor* plans to use.
  - o Steel transportation.
- xiv. An Earthworks Method Statement which describes the following as a minimum:
  - o Excavation procedure.
- xv. The *Contractor* submits a new Construction Work Method Statement, a month prior to commencing with any construction activities and after Contract Award, which covers all the aspects listed above and any additional requirements or changes arising from negotiations or clarifications, for acceptance by the *Project Manager*. This Method Statement is to

include interfaces with Others. This new method statement includes a sequential erection procedure which clearly shows detailed consideration for stability requirements of the structure (if applicable) at all stages during erection and a constructability analysis which includes the following:

- An analysis of the access to Site.
- An analysis of the crane usage requirements, crane locations and possible congestion to traffic.
- An analysis of the excavations and construction activities required by Others and associated possible impacts on the delivery of the *works*.

## **5.5. TEMPORARY WORKS, SITE SERVICES & CONSTRUCTION CONSTRAINTS**

### **5.5.1. Employer's Site entry and security control, permits, and Site regulations.**

The *Contractor* complies with the *Employer's* procedure for Application of Security Access Control at Arnot Power Station.

### **5.5.2. Restrictions to access on Site, roads, walkways and barricades.**

All areas which are accessible to Others, including other *Contractor's* or the *Employer's* personnel. Or which is adjacent to public roads or thoroughfares, or whereby the safety of persons may be endangered must be barricaded using hard barricading such as scaffolding or prefabricated screens.

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

The *Contractor* keeps records of his People, Equipment, Plant, Material, progress reports including those of his Subcontractors which the *Project Manager* or *Supervisor* have access to at any time. These records may be needed when assessing compensation events.

### **5.5.4. Health and safety facilities on Site**

#### **Medical Facilities**

- i. The *Contractor* provides a First Aid service to his employees and subcontractors. In the case where these prove to be inadequate, like in the event of a serious injury, the *Employer's* Medical Centre and facilities will be available at a fee.
- ii. Outside the *Employer's* office hours, the *Employer's* First Aid Services are only available for serious injuries and life-threatening situations.
- iii. The *Employer* recovers the costs incurred, in the use of the above *Employer's* facilities, from the *Contractor*.

### **5.5.5. Contractor's Equipment**

Whatever title the *Contractor* has to Equipment, Plant and Material passes to the *Employer* if it has been brought within the Working Areas. The title to Equipment, Plant and Material passes back to the *Contractor* if it is removed from the Working Areas with the *Project Manager's* permission.

The *Contractor* removes Equipment from the Site when it is no longer needed unless the *Project Manager* allows it to be in the *works*.

#### **5.5.6. Equipment provided by the Employer.**

The *Employer* provides the *Contractor* scaffolding and barricading where necessary to carry out the *works* as set out in Works Information.

### **5.6. SITE SERVICES AND FACILITIES**

Refer to 32-727, Eskom Safety, Health, Environment and Quality (SHEQ) Policy. All services and facilities that are not specifically stated to be provided by the *Employer* and which are necessary for the *Contractor* to Provide the Works, are provided by the *Contractor*.

#### **5.6.1. Water supply for construction purposes**

The *Contractor* connects to the nearest available water supply point as indicated by the *Project Manager*. The *Employer* supplies, free of charge, reasonable quantities of potable water required for the purpose of this contract from the existing points. The *Contractor* provides, at his own cost, all connection fittings, pipe work, temporary plumbing, and pumps necessary to lead the water from the *Employer's* points of supply to the various points where it is required.

#### **5.6.2. Power supply for construction purposes**

The *Contractor* connects to the nearest available power supply point as indicated by the *Project Manager*. The *Contractor* takes the following into consideration:

- i. The Contractor provides his own portable 380V electrical distribution boards, and supply cables to and from the boards, for all his power supply requirements to execute the works.
- ii. Contractors' Electrical Distribution Boards complies with OHS Act as referred to in the Electrical Installation Regulations and the Electrical Machinery Regulations.
- iii. Each board brought onto site has a Certificate of Compliance issued by an accredited person.
- iv. The Contractors' electrical distribution boards are installed at the works on a time negotiated with the Supervisor, prior to the possession date.
- v. The Employer connects distribution boards to a 380V three-phase AC power supply, where available, only after the Contractor has submitted the valid Certificate of Compliance.
- vi. All Contractors' Electrical Distribution Boards are earthed to the steel structure of the plant.
- vii. The Project Manager connects distribution boards to a 380V three-phase AC power supply, only after the Contractor has submitted the valid Certificate of Compliance.
- viii. All Contractors' Electrical Distribution Boards are earthed to the steel structure of the plant.

#### **5.6.3. Telephone/internet facilities**

The *Contractor* is responsible for arranging his own telephone/internet facilities.

#### **5.6.4. Ablution facilities**

Ablution facilities are available on some areas on site. In areas where the facilities are far from the *Contractor's* working area the *Contractor* makes the necessary arrangement to provide ablution facilities. Chemical serviced toilets are the minimum acceptable standard and maintained in a clean and sanitary condition.

#### **5.6.5. Storage facilities**

The *Contractor* is to make his own arrangements regarding storage facilities and laydown areas that are required to complete the *works*. All laydown areas on Site are as per agreement with the *Project Manager*. All storage facilities (Plant, Material and Equipment) will be within the boundaries of the Site in order not to affect the operations of Others.

#### **5.6.6. Facilities provided by the *Contractor*.**

It is required, for the proper co-ordination and execution of the *works*, that the *Contractor* has an office on Site for the duration of the contract.

The *Contractor* includes in his establishment rates for all further treatment of the *Contractor's* yard areas that he considers necessary for his entire operation throughout his period of occupation and under all weather conditions including SANAS approved bulk mixing plants, laboratories etc. The *Contractor* also includes for all security fencing, security, and access arrangements. The yard is kept clean and tidy at all times, this requirement extends to all workshops and storage areas under the control of the *Contractor*. Maintenance of the yard is the *Contractors* responsibility and is for the *Project Managers* acceptance.

Outfall drainage of all surface run-off drains is constructed by the *Contractor* to the acceptance of the *Project Manager* to minimise erosion and to effect control of contaminated water. The *Contractor's* plan for the layout of his yard area are accepted by the *Project Manager* prior to occupying the yard and the *Contractor* does not occupy any site area other than that allocated to him. The *Contractor's* plan states fully what measures are taken regarding removal and storage of topsoil, stabilisation of eroded areas and further loss of topsoil.

The *Contractor* complies with the *Employer's* standard: 32-727, Eskom Safety, Health, Environment and Quality (SHEQ) Policy.

The *Contractor* provides, erects and maintains for his own use adequate size office accommodation and stores together with drainage, lighting, heating, and hot and cold-water services as may be required. The *Contractor* makes provision for adequate parking and a turning area adjacent to all the aforementioned structures. The *Project Manager*, prior to commencement of any work on Site, accepts all designs and layouts for these provisions.

The *Contractor* dismantles and clears the yard of all temporary structures with associated foundations and infrastructure at the direction of the *Project Manager* on Completion of the *works*. No dismantling and clearance work is carried out without prior acceptance from the *Project Manager*.

The *Contractor* dismantles and clears the yard of all such temporary structures and associated foundations and infrastructure at the direction of the *Supervisor* on Completion of the whole of the *works*. No such dismantling and clearance work is carried out without prior acceptance from the *Supervisor*.

### **5.7. DAMAGE TO COMPONENTS NOT FORMING PART OF THE *WORKS***

The *Contractor* takes the utmost care to prevent damage to existing infrastructure and equipment. The *Contractor* therefore plans the *works* considering any existing infrastructure and equipment.

Any damages resulting from the *works* is repaired/made good by the *Contractor* at his own expense, to the satisfaction of the *Employer*. The *Contractor* supplies a method statement for the repair works to the *Employer* for review and acceptance prior to conducting the repair works.

The *Contractor* may require removing some equipment and structural steel/ concrete structures to facilitate the *works*. In such case, the *Contractor* submits a list of existing equipment/ structural steel/ concrete structures that requires removal in a method statement for the *Project Manager's* review and acceptance. The cost of removal of undamaged components, preservation and replacement to its original working state is the responsibility of the *Contractor*.

### **5.8. TITLE TO MATERIALS FROM DEMOLITION AND EXCAVATION**

The *Contractor* is responsible for disposal of all the waste generated from the *works* in an environmentally friendly manner, ensuring that hazardous (contaminated rubble) and general waste are disposed of at a nearest registered landfill site in accordance with 32-245, *Eskom Waste Management Standard*. The *Project Manager* is notified of the disposal site before any disposal can be done. For all scrap metal, cables and material the *Contractor* submits with the tender the price per tonne for disposal of such material. In case of salvaged equipment, identified by the *Project Manager*, the *Contractor* is expected to safely remove such equipment and store it at the designated site as identified by the *Project Manager*. The list of all salvaged equipment is to be issued to the *Contractor* before the start of the *works*.

### **5.9. BILL OF QUANTITIES**

The *Contractor* compiles a Bill of Quantities, which accounts for each aspect/component of the *works*.

### **5.10. DATA BOOKS**

The *Contractor* submits signed off Data Books to the *Supervisor* for his acceptance. Data books include the following, as a minimum (where applicable):

- ix. Document List.
- x. Instruction for Work/ Purchase Order.
- xi. Approved ITP's, QCP's;
- xii. Method statements and specifications adhered to.
- xiii. Rigging studies.
- xiv. Risk assessments<sup>2</sup>.
- xv. Approved Drawings.
- xvi. Fabrication Drawings.
- xvii. Material Certificates.
- xviii. Weld Map.
- xix. Weld Matrix Sheet.

- xx. Weld Sequence.
- xxi. Welding Consumables Certificates.
- xxii. Welding Procedure.
- xxiii. Welders' Qualifications.
- xxiv. Contractor's ISO 3834 certificate.
- xxv. ESKOM approved NDT Contractor.
- xxvi. Approved NDT procedure.
- xxvii. NDT Technician Qualifications.
- xxviii. NDT Reports/ Results.
- xxix. Certificate of Manufacture.
- xxx. Inspection Reports.
- xxxi. Corrosion Protection Consumables Certificates.
- xxxii. Calibration Certificates.
- xxxiii. Notifications.
- xxxiv. Modifications.
- xxxv. Concessions.
- xxxvi. Technical Queries, Engineering Responses and communications with Project Manager/  
Employer.
- xxxvii. Non-conformance reports.
- xxxviii. Internal Release Notes.
- xxxix. Transport notifications.
  - xl. Calculations for any temporary works that may be required for the safe execution of the works.
  - xli. Concrete 7 day and 28-day cube test results.
  - xl.ii. Slump test results.
  - xl.iii. Concrete mix designs including all required test results e.g., aggregate test results.
  - xl.iv. Steel grade certificates; and
  - xl.v. Pre-concrete and post concrete surveys.

### **5.11. EXCAVATIONS**

No excavations are permitted without an excavation permit obtained from the Project Manager. The *Contractor* complies with the requirements of the Construction Regulations. Excavations are performed such that it imposes a minimum restriction on access to Site for Others. Excavation permits are only issued if the area has been scanned by the *Contractor*, to ensure that there are no underground services in the area to be excavated. Refer to 32-727, Eskom Safety, Health, Environment and Quality (SHEQ) Policy.

### **5.12. CONSTRUCTION AND ERECTION**

1. The *Contractor* is responsible for the rehabilitation and construction of all associated items in accordance with the detailed drawings and specifications.

2. The *Contractor* disposes of all demolition waste at a licenced waste disposal site to be accepted by the *Project Manager*. The waste disposal site is selected to suit the classification of the materials to be disposed of. Certificates of disposal are required to be submitted to the *Employer*.

### 5.13. VENDOR DOCUMENT SUBMISSION SCHEDULE

Item/Activity	Phase of returnable
List of traceable references of previously successfully completed contracts (3 projects in the last 10 years)	Tender Returnable
High level method statement showing understanding of the scope	Tender Returnable
CV's of key personnel including supporting certification (Design Engineers, Construction Manager, Site Engineer)	Tender Returnable
General Construction Work Method Statement	Tender Returnable
Constructability Analysis	Tender Returnable
Construction Programme	Tender Returnable
Constructability Analysis	After completion of detailed design
Construction Programme	Final program after contract award
Detailed Method statements, incl.: <ul style="list-style-type: none"> <li>• Site clearance</li> <li>• Earthworks</li> <li>• Safeguarding slopes</li> <li>• Preparation of engineered fill method statement</li> </ul>	28 days before Construction
Concrete method statements, incl: <ul style="list-style-type: none"> <li>• Curing of concrete and thermal protection for "massive" concrete</li> <li>• Sequence of construction &amp; placing of construction joints</li> <li>• Transport, placing and compaction of concrete</li> <li>• Flooring tolerances</li> <li>• Preparation of foundations method statement</li> </ul>	28 days before Construction
Steelworks method statements, incl: Method statement for erection Method statement for corrosion protection	28 days before Construction
Details/ Data Sheets of penetration in brick work, concrete, steel cladding, open grid flooring etc.	28 days before Construction
Concrete 7- & 28-day cube test results	2 days after testing
Slump test results	Upon completion of test

Item/Activity	Phase of returnable
Aggregate test results	Upon completion of test
Concrete mix design	14 days before Construction
Structural (mill certificates) & Reinforcing Steel grade certificates	14 days before Construction
High Strength Bolts Material Certification	14 days before Construction
Welding procedure specifications	14 days before Fabrication
Weld test certificates	7 days after Construction
NDT testing results	2 days after testing
Inspection and Test Plans	28 days before Construction
Fabrication Drawings	28 days before Construction
Temporary Works Designs	35 days before Construction
Rigging Studies	28 days before Construction
As-built drawings (In .dwg & .pdf format)	14 days after Construction
Data Books	28 ays after Construction

## 5.14. INVOICING AND PAYMENT

In terms of core clause 50 the *Contractor* assesses the amount due and applies to the *Employer* for payment. The *Contractor* applies for payment with a tax invoice addressed to the *Employer* as follows:

[invoiceseskomlocal@eskom.co.za](mailto:invoiceseskomlocal@eskom.co.za)

The *Contractor* includes the following information on each tax invoice:

- Name and address of the *Contractor*
- The contract number and title;
- *Contractor's* VAT registration number;
- The *Employer's* VAT registration number 4740101508;
- The total Price for Work Done to Date which the *Contractor* has completed;
- Other amounts to be paid to the *Contractor*;
- Less amounts to be paid by or retained from the *Contractor*;
- The change in the amount due since the previous payment being the invoiced amount - excluding VAT, the VAT and including VAT;
- (add other as required)

The *Contractor* attaches the detail assessment 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.

### 5.14.1. Invoicing and payment

The contractor maintains all records of defined costs on site stored in a file and accessible to the Employer for the purpose of determining the defined cost. The contractor allows the employer full access to the information and provides explanations where required.

### 5.14.2. Accelerated Shared Growth Initiative – South Africa (ASGI-SA) currently known as Supplier Development, Localisation and Industrialisation

The *Contractor* complies with and fulfils the *Contractor's* obligations in respect of the Accelerated and Shared Growth Initiative - South Africa in accordance currently known as Supplier Development, Localisation and Industrialisation with and as provided for in the *Contractor's* ASGI-SA currently known as Supplier Development, Localisation and Industrialisation Compliance Schedule stated below.

#### Job Creation

Eskom has made a number of empowerment commitments to the local communities surrounding the areas where construction activities are conducted; amongst these are commitments to be considered for local empowerment possibilities in its procurement strategy. In doing this Eskom is seeking to ensure that the local communities' benefits from its procurement spend, through wealth generation and capacity development, and that this benefit is spread as widely as possible throughout the community.

Description	Amount/Number
Number of Jobs to be created	6
Number of Jobs to be retained	15

#### Localisation

Eskom prefers suppliers to purchase all their materials, equipment or any other services required within the borders of South Africa. The Local Content to South Africa is expected to be 100% because Eskom do not expect substantial skills to be imported for these services and the industry has matured enough to possess almost all the skills required.

Criteria	Weight	Target	Proposed Target
Procurement from Local Content to SA	100.0%	100%	100%
<b>TOTAL</b>	<b>100%</b>		

#### SD,L&I Undertaking

#### CORPORATE SOCIAL INVESTMENT

The tenderer is required to submit a CSI Proposal to a value of at least 1% of the Contract value as a direct benefit to the Local to site communities

Criteria	Eskom Target (%)	Contractor Proposal
CSI	%	%

The Contractor to propose an envisaged percentage of the contract value to Corporate Social Investments project (CSI) which amount to R \_\_\_\_\_ as a direct benefit to the local to site communities.

**Note: Eskom will furnish the number of approved CSI projects to be executed by the successful contractor after the contract award. Once CSI project execution is complete, the handover event will be handled by Eskom.**

#### SDL&I REPORTING AND MONITORING PLAN

- The suppliers shall on a quarterly basis submit a report to Eskom in accordance with Data Collection Template on their compliance with the SDL&I obligations described above.
- Eskom shall review the SDL&I reports submitted by the suppliers within 60 (sixty) days of receipt of the reports and notify the suppliers in writing if their SDL&I obligations have not been met.

- Upon notification by Eskom that the suppliers have not met their SDL&I obligations, the suppliers shall be required to implement corrective measures to meet those SDL&I obligations before the commencement of the following report, failing which Retention clauses shall be invoked.
- Every contract should be accompanied by the SDL&I implementation schedule which must be completed by the supplier and returned to SDL&I within 30 days of contract award. It shall be used as a reference document for monitoring, measuring and reporting on the supplier's progress in delivering on their stated SDL&I commitments.

The *Contractor* shall keep accurate records and provide the *Employer* with reports on the *Contractor's* actual delivery against the above stated ASGI-SA currently known as Supplier Development, Localisation and Industrialisation criteria.

The *Contractor's* failure to comply with his ASGI-SA currently known as Supplier Development, Localisation and Industrialisation obligations constitutes substantial failure on the part of the *Contractor* to comply with his obligations under this contract.

## C4: Site Information

The location of Arnot Power Station is approximately 50 km east of Middelburg in Mpumalanga. Arnot Power Station consists of 6 x 350MW turbo generator units with an installed capacity of 2100MW at maximum continuous rating (MCR).

The specific site is inside Arnot Power Station, by the Scrapyard located South of the power station by the contractors yard.

### C4.1: Information about the *site* at time of tender which may affect the work in this contract

#### 1. Access limitations

The *Contractor* takes note that he will be performing construction work on a national key point (Arnot Power Station) fence. The *Contractor* will be responsible for ensuring that no unauthorised person gains access to the fence area during construction. The *Contractor* provides all relevant security personnel during construction.

The *Contractor* provides a temporary fence to separate the construction site from the normal operation of the water treatment plant. The *Contractor* further provides all the necessary personnel and strategies to effectively manage traffic in and out of his site without interrupting the normal operations of the coal stockyard. The *Contractor* ensures that all vehicles traveling within the site are fitted with all the required safety articles such as flags, lights, reverse alarm etc.

#### 2. Ground conditions in areas affected by work in this contract

The ground condition in the area is as follows:

- First approx. 500mm natural ground is soft salty sand
- 500mm and deeper is weathered soft sand stone formation, can be excavated with 20Ton excavator

#### 3. Hidden and other services within the *site*

The *Contractor* makes use of underground service detection before any excavations are done to detect underground services such as electric cables, water pipes, IT and telephone cables. The *Contractor* notifies the employer of presence of underground and the employer advises the employer within 2days in terms of how the contractor deals with the obstruction.

#### 4. Details of existing buildings / facilities which *Contractor* is required to work on

The *Contractor* takes note that he will be performing construction work on a national key point (Arnot Power Station) fence. The *Contractor* will be responsible for ensuring that no unauthorised person gains accesses the fence area during construction. The *Contractor* provides all relevant security personnel during construction.