NEC3 Term Service Contract (TSC3)

A contract between **Eskom Holdings SOC Ltd (Reg No. 2002/015527/30)**

and **……..**

for **PROVISION OF ELECTRICAL LEAK LOCATION SURVEY FOR THE ASH DISPOSAL FACILITY AT KENDAL POWER STATION**

Contents: Compiled in accordance with CIDB Standard for Uniformity in Construction Procurement (May 2010 amendments)

Documentation prepared by: **Mzi S. Ngcongolo**

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:

ELECTRICAL LEAK LOCATION SURVEY FOR THE ASH DISPOSAL FACILITY AT KENDAL POWER STATION
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	**R**
Value Added Tax @ 15% is	**R**
The offered total of the Prices inclusive of VAT is	**R**
(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 .....

For the tenderer: *(Insert name and address of organisation)*

.....

Name & signature of witness ..... Date .....

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

Acceptance

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

The terms of the Contract, are contained in:

Part 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 .....

for the Employer .....
(Insert name and address of organisation)

.....

Name & signature of witness ..... Date .....

Note: If a tenderer wishes to submit alternative tender offers, further copies of this document may be used for that purpose, duly endorsed, 'Alternative Tender No. _____ '

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		

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

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

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

C1.2 Contract Data

Data provided by the *Employer*

Clause	Statement	Data
	General	
	The *conditions of contract* are the core clauses and the clauses for main Option	
	dispute resolution Option	**W1: Dispute resolution procedure**
	and secondary Options	
		X2 Changes in the law
		X7: Delay damages
		X10 *Employer*'s *Agent*
		X11: Termination by the *Employer*
		Z: *Additional conditions of contract*
10.1	The *Employer* is (Name):	**Eskom Holdings SOC Ltd (reg no: 2002/015527/30), a state-owned company incorporated in terms of the company laws of the Republic of South Africa**
	Address	**Registered office at Megawatt Park, Maxwell Drive, Sandton, Johannesburg**
10.1 & 14.4	The *Employer*'s representative to whom the *Employer* in terms of clause 14.4 delegates his actions[1] is (Name):	**Mzi S. Ngcongolo**
	Address	**Kendal Power Station Balmoral/ R545 Road Ogies**
	Tel No.	**(017) 749 5025**
	Fax No.	**N/A**
	E-mail address	**NgcongSM@eskom.co.za**
11.2(11)	The *works* are	**PROVISION OF ELECTRICAL LEAK LOCATION SURVEY FOR THE ASH DISPOSAL FACILITY AT KENDAL POWER**
11.2(13)	The Works Information is in	**the document called 'Works Information' in Part 3 of this contract.**
11.2(12)	The Site Information is in	**the document called 'Site Information' in Part 4 of this contract.**
11.2(12)	The *site* is	**Kendal Power Station**
30.1	The *starting date* is.	**11 March 2024**

[1] Except those actions which can only be done by the *Employer* as a Party to the contract.

11.2(2)	The *completion date* is.	**10 March 2025**
13.2	The *period for reply* is	**0ne week**
40	The *defects date* is	**12 weeks after Completion**
41.3	The *defect correction period* is	**2 weeks**
50.1	The *assessment day* is the	**20 of each month.**
50.5	The *delay damages* are	**R10 000.00 per day up to 5% of the contract value**
50.6	The retention is	**5%**
51.2	The interest rate on late payment is	**0%** **[Insert a rate only if a rate less than 0.5% per week of delay has been agreed]**
80.1	The *Contractor* is not liable to the *Employer* for loss of or damage to the *Employer*'s property in excess of	**the amount of the deductibles relevant to the event**
93.1	The *Adjudicator* is	**the person selected from the ICE-SA Division (or its successor body) of the South African Institution of Civil Engineering Panel of Adjudicators by the Party intending to refer a dispute to him. (see www.ice-sa.org.za). If the Parties do not agree on an Adjudicator the Adjudicator will be appointed by the Arbitration Foundation of Southern Africa (AFSA).**
	Address	
	Tel No.	
	Fax No.	
	e-mail	
93.2(2)	The *Adjudicator nominating body* is:	**the Chairman of ICE-SA a joint Division of the South African Institution of Civil Engineering and the London Institution of Civil Engineers. (See www.ice-sa.org.za) or its successor body**
93.4	The *tribunal* is:	**arbitration.**
	The *arbitration procedure* is	**the latest edition of Rules for the Conduct of Arbitrations published by The Association of Arbitrators (Southern Africa) or its successor body.**
	The place where arbitration is to be held is	**South Africa**
	The person or organisation who will choose an arbitrator - if the Parties cannot agree a choice or - if the arbitration procedure does not state who selects an arbitrator, is	**the Chairman for the time being or his nominee of the Association of Arbitrators (Southern Africa) or its successor body.**

The *conditions of contract* are the NEC3 Term Service Contract (April 2005)[23] and the following additional conditions Z1 to Z11 which always apply:

Z1 Cession delegation and assignment

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

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

Z2 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

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

[2] If June 2005 Edition applies, delete April 2013 and insert June 2005
[3] 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.

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 sub*Contractor*s 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 Sub*Contractor*s, 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 sub*Contractor*s, 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 *Contractor* or a third party, such party's employees, agents, or Subconsultants or Sub*Contractor*'s employees, or any one or more of all of these parties' relatives or friends,

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

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

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

Z11.1 A Committing Party may not take any Prohibited Action during the course of the procurement of this contract or in execution thereof.

Z11.2 The *Employer* may terminate the *Contractor*'s obligation to Provide the Services 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 Services for this reason.

Z11.3 If the *Employer* terminates the *Contractor*'s obligation to Provide the Services for this reason, the amounts due on termination are those intended in core clauses 92.1 and 92.2.

Z11.4 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.

Z12 Insurance

Z _12.1 Replace core clause 82 with the following:

Insurance cover 82

82.1 When requested by a Party, the other Party provides certificates from his insurer or broker stating that the insurances required by this contract are in force.

82.2 The *Contractor* provides the insurances stated in the Insurance Table A, from the *starting date* until the earlier of Completion and the date of the termination certificate.

INSURANCE TABLE A

Insurance against	Minimum amount of cover or minimum limit of indemnity	Cover provided until
Loss of or damage to the *works*	The replacement cost where not covered by the *Employer*'s insurance The *Employer*'s policy deductible as at contract date, where covered by the *Employer*'s insurance	The *Employer*'s certificate of Completion has been issued
Loss of or damage to Equipment, Plant and Materials	The replacement cost where not covered by the *Employer*'s insurance The *Employer*'s policy deductible as at contract date, where covered by the *Employer*'s insurance	The Defects Certificate has been issued
The *Contractor*'s liability for loss of or damage to property (except the *works*, Plant and Materials and Equipment) and for bodily	Loss of or damage to property *Employer*'s property The replacement	

injury to or death of a person (not an employee of the *Contractor*) arising from or in connection with the *Contractor*'s Providing the Works	cost where not covered by the *Employer*'s insurance The *Employer*'s policy deductible as at contract date where covered by the *Employer*'s insurance <u>Other property</u> The replacement cost **<u>Bodily injury to or death of a person</u>** The amount required by the applicable law	
Liability for death of or bodily injury to employees of the *Contractor* arising out of and in the course of their employment in connection with this contract	The amount required by the applicable law	

82.3 The *Employer* provides the insurances as stated in the Insurance Table B

INSURANCE TABLE B

Insurance against or name of policy	**Minimum amount of cover or mini of indemnity**
Assets All Risk	Per the insurance policy document
Contract Works insurance	Per the insurance policy document
Environmental Liability	Per the insurance policy document
General and Public Liability	Per the insurance policy document
Transportation (Marine)	Per the insurance policy document
Motor Fleet and Mobile Plant	Per the insurance policy document
Terrorism	Per the insurance policy document
Cyber Liability	Per the insurance policy document
Nuclear Material Damage and Business Interruption	Per the insurance policy document
Nuclear Material Damage Terrorism	Per the insurance policy document

Z13 Nuclear Liability

Z13.1 The *Employer* is the operator of the Koeberg Nuclear Power Station (KNPS), a nuclear installation, as designated by the National Nuclear Regulator of the Republic of South Africa, and is the holder of a nuclear licence in respect of the KNPS.

Z13.2 The *Employer* is solely responsible for and indemnifies the *Contractor* or any other person against any and all liabilities which the *Contractor* or any person may incur arising out of or resulting from nuclear damage, as defined in Act 47 of 1999, save to the extent that any liabilities are incurred due to the unlawful intent of the *Contractor* or any other person or the presence of the *Contractor* or that person or any property of the *Contractor* or such person at or in the KNPS or on the KNPS site, without the permission of the *Employer* or of a person acting on behalf of the *Employer*.

Z13.3 Subject to clause Z13.4 below, the *Employer* waives all rights of recourse, arising from the aforesaid, save to the extent that any claims arise or liability is incurred due or attributable to the unlawful intent of the *Contractor* or any other person, or the presence of the *Contractor* or that person or any property of the *Contractor* or such person at or in the KNPS or on the KNPS site, without the permission of the *Employer* or of a person acting on behalf of the *Employer*.

Z13.4 The *Employer* does not waive its rights provided for in section 30 (7) of Act 47 of 1999, or any replacement section dealing with the same subject matter.

Z13.5 The protection afforded by the provisions hereof shall be in effect until the KNPS is decommissioned.

Z14 Asbestos

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

AAIA means approved asbestos inspection authority.

ACM means asbestos containing materials.

AL means action level, i.e. a level of 50% of the OEL, i.e. 0.1 regulated asbestos fibres per ml of air measured over a 4 hour period. The value at which proactive actions is required in order to control asbestos exposure to prevent exceeding the OEL.

Ambient Air means breathable air in area of work with specific reference to breathing zone, which is defined to be a virtual area within a radius of approximately 30cm from the nose inlet.

Compliance Monitoring means compliance sampling used to assess whether or not the personal exposure of workers to regulated asbestos fibres is in compliance with the Standard's requirements for safe processing, handling, storing, disposal and phase-out of asbestos and asbestos containing material, equipment and articles.

OEL means occupational exposure limit.

Parallel Measurements means measurements performed in parallel, yet separately, to existing measurements to verify validity of results.

Safe Levels means airborne asbestos exposure levels conforming to the Standard's requirements for safe processing, handling, storing, disposal and phase-out of asbestos and asbestos containing material, equipment and articles.

Standard means the *Employer*'s Asbestos Standard 32-303: Requirements for Safe Processing, Handling, Storing, Disposal and Phase-out of Asbestos and Asbestos Containing Material, Equipment and Articles.

SANAS means the South African National Accreditation System.

TWA means the average exposure, within a given workplace, to airborne asbestos fibres, normalised to the baseline of a 4-hour continuous period, also applicable to short term exposures, i.e. 10-minute TWA.

Z14.1 The *Employer* ensures that the Ambient Air in the area where the *Contractor* will Provide the Services conforms to the acceptable prescribed South African standard for asbestos, as per the regulations published in GNR 155 of 10 February 2002, under the Occupational Health and Safety Act, 1993 (Act 85 of 1993) ("Asbestos Regulations"). The OEL for asbestos is 0.2 regulated asbestos fibres per millilitre of air as a 4-hour TWA, averaged over any continuous period of four hours, and the short-term exposure limit of 0.6 regulated asbestos fibres per millilitre of air as a 10-minute TWA, averaged over any 10 minutes, measured in accordance with HSG248 and monitored according to HSG173 and OESSM.

Z14.2 Upon written request by the *Contractor*, the *Employer* certifies that these conditions prevail. All measurements and reporting are affected by an independent, competent, and certified occupational hygiene inspection body, i.e., a SANAS accredited, and Department of Employment and Labour approved AAIA. The *Contractor* may perform Parallel Measurements and related control measures at the *Contractor*'s expense. For the purposes of compliance, the results generated from Parallel Measurements are evaluated only against South African statutory limits as detailed in clause Z14.1. Control measures conform to the requirements stipulated in the AAIA-approved asbestos work plan.

Z14.3 The *Employer* manages asbestos and ACM according to the Standard.

Z14.4 In the event that any asbestos is identified while Providing the Services, a risk assessment is conducted and if so required, with reference to possible exposure to an airborne concentration of above the AL for asbestos, immediate control measures are implemented, and relevant air monitoring conducted in order to declare the area safe.

Z14.5 The *Contractor*'s personnel are entitled to stop working and leave the contaminated area forthwith until such time that the area of concern is declared safe by either Compliance Monitoring or an AAIA approved control measure intervention, for example, per the emergency asbestos work plan, if applicable.

Z14.6 The *Contractor* continues to Provide the Services, without additional control measures presented, on presentation of Safe Levels. The contractually agreed dates to Provide the Services, including the Completion Date, are adjusted accordingly. The contractually agreed dates are extended by the notification periods required by regulations 3 and 21 of the Asbestos Regulations, 2001.

Z14.7 Any removal and disposal of asbestos, asbestos containing materials and waste, is done by a registered asbestos *Contractor*, instructed by the *Employer* at the *Employer*'s expense, and conducted in line with South African legislation.

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

The tendering *Contractor* is advised to read both the NEC3 Term Service Contract (April 2005) and the relevant parts of its Guidance Notes (TSC3-GN)[4] 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 *Contractor* 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	**%**
11.2(9)	The Price List is in	**the document called 'Price List' in Part 2 of this contract.**
11.2(10)	The offered total of the Prices is [Enter the total of the Prices from the Price List]:	**R** **excluding VAT** **[in words]** **excluding VAT**

[4] 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

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

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

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

All Prices are to be shown excluding VAT unless instructed otherwise by the *Employer* in Tender Data or in an instruction the *Employer* has given before the tenderer enters his Prices.

If there is insufficient space in the Price List which follows, state in which document the Price List is contained.

C2.2 Price List

Item	Description (Refer to Payment Items in SoW Clause 5)	Quantity	Unit	Rate	Price
1	**Site Mobilization and Demobilization (Lump Sum)**				
1.1	Ash Disposal Facility (ADF) Phase 2	1	Sum		
1.2	Ash Disposal Facility (ADF) Phase 3	1	Sum		
1.3	Pollution Control Dam (PCD - Compartment 1)	1	Sum		
1.4	Pollution Control Dam (PCD - Compartment 2)	1	Sum		
1.5	Clean Water Dam (CWD - Compartment 1)	1	Sum		
1.6	Clean Water Dam (CWD - Compartment 2)	1	Sum		
2	**Liner integrity Survey on covered Geomembrane as per ASTM D7007 (Dipole Method) Preperation of Final Report**				
2.1	Ash Disposal Facility (ADF) Phase 2	278 071	m^2		
2.2	Ash Disposal Facility (ADF) Phase 3	321 367	m^2		
2.3	Pollution Control Dam (PCD - Compartment 1)	16 600	m^2		
2.4	Pollution Control Dam (PCD - Compartment 2)	25 600	m^2		
2.5	Clean Water Dam (CWD - Compartment 1)	40 500	m^2		
2.6	Clean Water Dam (CWD - Compartment 2)	40 100	m^2		
3	**Liner integrity survey on exposed geomembrane as per ASTM D7953-14 (Arc Method)* Preperation of Final Report**				
3.1	Ash Disposal Facility (ADF) Phase 2	11 609	m^2		
3.2	Ash Disposal Facility (ADF) Phase 3	13 152	m^3		
4	**Liner integrity survey on exposed geomembrane as perR ASTM D7002-16 (Water Puddle Method) * Preperation of Final Report**				
4.1	Ash Disposal Facility (ADF) Phase 2	11 609	m^2		
4.2	Ash Disposal Facility (ADF) Phase 3	13 152	m^3		
5	**Preliminaries and Generals**				
5.1	Generator 6Kva-220V Genset 10HP and Fuel	165	day		
5.2	Accommodation	660	day		
5.3	Occupational Health and Safety Requirements	1	Sum		
5.4	Vehicle use for technicians and fuel costs during the s	165	day		
5.5	M-Benz Water Tanker 16,000 l	330	hours		
5.6	Watercart Operators	330	hours		
6	**Contingency**				
6.1	Contingency	0.1	%age		
				TOTAL (excl VAT)	
				15% VAT	
				TOTAL (incl VAT)	

3.1 SCOPE OF WORK

The Scope of Works will be applicable in the following areas at the Kendal New Ash Dam Project:

- Ash Disposal Facility Phase 2
- Ash Disposal Facility Phase 3
- Pollution Control Dam (Dam No.1)
- Clean Water Dam (Dam No.2)

The Scope of Works consist of the General Electric Leak Location Survey (ELLS) on the abovementioned facilities to confirm the competence of the geomembrane installation after placement of the above liner protection layer and/or sacrificial layer to a depth of 300mm. The standard to be complied with or the ELLS on the single composite liner is ASTM D8265. The facility layouts and lining systems can be viewed in the attached Issue for Construction (IFC) Drawings. The ELLS Specialist (*Contractor*) is advised to familiarize themselves with all the details of the lining system, including drainage, outlets, concrete works, etc., to identify where isolation will be required and to include for this in their rates. The *Contractor* may have discussions with the Earthworks *Contractor* (Concor Lubocon JV) to assist with the isolation requirements, however payment for these services should be included in the rate schedule.

The *Contractor* will be required to do an Electric Leak Location Survey using, Arc Testing (ASTM D7953-14) or Water Puddle (ASTM D7002-16) and Dipole Testing (ASTM D7007) or a combination thereof, to confirm and certify that the Installer has met the Specification Requirements as stated in SANS 10409:2020 on the above-mentioned facilities.

The following sections will from part of the SOW for the ELLS Specialist: -

3.2 Supporting Reference

The publications below form part of this specification to the extent referenced. Where a particular publication is referred to, that publication shall, unless otherwise stated, be the edition in effect 30 (thirty) days prior to the date of issue of this specification. Any contradictions between publications shall be submitted to the Engineer for decision.

- Project Technical Specifications related to the construction of the Kendal Ash Disposal Facility.
- Project Construction Drawings.
- Project Construction Quality Assurance Plan.
- Regulatory Compliance Requirements such as issued by Department of Water and Sanitation.
- South African National Standards (SANS):

o SANS 10409:2020: Design, selection, and instillation of geomembrane.

- American Society for Testing and Materials (ASTM).

o ASTM D4439: Terminology for Geosynthetics.

o ASTM D6747-15: Standard Guide for Selection of Techniques for Electrical Detection of Leaks in Geomembranes.

o ASTM D7953-14: Standard Practice for Electrical Leak Location on Exposed Geomembranes Using the Arc Testing Method.

o ASTM D7002-16: Standard Practice for Leak Location on Exposed Geomembranes Using the Water Puddle System.

- ASTM D7007: Standard Practices for Electrical Methods for Locating Leaks in Geomembranes Covered with Water or Earth Materials.

- ASTM D4439-18: Terminology for Geosynthetics.

- D8265 – 19: Standard Practices for Electrical Methods for Mapping Leaks in Installed Geomembranes.

3.3 Definitions

For the purposes of this specification, the definitions given in the Contract and the following definitions shall apply:

"Electrical leak location" – a method which uses electrical current or electrical potential to locate leaks in a geomembrane.

"Leak" – a leak is any unintended opening, perforation, breach, slit, tear, puncture, crack, or seam breach. Significant amounts of liquids or solids may or may not flow through a leak. Scratches, gouges, dents, or other aberrations that do not completely penetrate the geomembrane are not considered to be leaks.

"Geomembrane" – an essentially impermeable membrane used with foundation, soil, rock, earth, or any other geotechnical engineering related material as an integral part of a man-made project, structure, or system.

"Conductive-backed geomembrane" – a specialty geomembrane manufactured using the coextrusion process with an insulating layer in intimate contact with a conductive layer.

"Leak detection sensitivity" – the smallest leak that the leak location equipment and survey methodology are capable of detecting under a given set of conditions. The leak detection sensitivity specification is usually stated as a diameter of the smallest leak that can be likely detected.

"Poor contact condition" – for the purposes of this specification, a poor contact condition means that a leak is not in intimate contact with the sufficiently conductive layer above or underneath the geomembrane to be tested. This occurs on a wrinkle or wave, under the overlap flap of a fusion weld, in an area of liner bridging and, in an area, where there is a subgrade depression or rut.

3.4. SPECIFICATIONS

This specification covers the test methods applicable for locating leaks in installed covered geomembranes using electrical methods. This specification shall use the term "leak" to mean holes, punctures, tears, knife cuts, seam defects, cracks, and similar breaches in an installed primary layer HDPE geomembrane at the Kendal Ash Disposal Facility.

3.4.1 Electrical Leak Survey Project Requirements

3.4.1.1 Applicable ASTM Test Methods

The electrical leak survey on the Kendal Ash disposal facility (ADF), Pollution Control Dams (PCD's) and Clean Water Dams (CWD's) will be performed on the primary geomembrane (non-conductive) or cover material in accordance with:

- ASTM D4439-18: Terminology for Geosynthetics

- ASTM D6747-15: Standard Guide for Selection of Techniques for Electrical Detection of Leaks in Geomembranes.

- ASTM D7953-14: Standard Practice for Electrical Leak Location on Exposed Geomembranes Using the Arc Testing Method.

- ASTM D7002-16: Standard Practice for Leak Location on Exposed Geomembranes Using the Water Puddle System.

- ASTM D7007: Standard Practices for Electrical Methods for Locating Leaks in Geomembranes Covered with Water or Earth Materials.

- D8265 – 19: Standard Practices for Electrical Methods for Mapping Leaks in Installed Geomembranes

The ASTM test methods are further applicable, where deemed necessary.

It is the responsibility of the ELLS specialist (*Contractor*) to ensure any site design changes (such as material that may have changed that will be placed above or below the testing geomembrane, site geometry, penetrations) that may occur during construction that are different to tender drawings on which initial testing assumptions and costing were made on conducting the electrical leak survey are accordingly addressed to the Project Engineer, in no less than four (4) weeks prior to the commencement of the leak survey. The *Contractor* shall communicate these changes and implications in a detailed method statement for submission and approval by the Project Engineer.

As a minimum requirement the *Contractor* shall adjust and address any revisions and changes to the test methods of the electrical leak survey by quoting the applicable ASTM test method for execution of the electrical leak survey, in particular and not limited to the following:

- ASTM D7703-16: Standard Practice for Electrical Leak Location on Exposed Geomembranes Using the Water Lance System.
- ASTM D7240-18: Leak Location using Geomembranes with an Insulating Layer in Intimate Contact with a Conductive Layer via Electrical Capacitance Technique (Conductive Geomembrane Spark Test).
- ASTM D7909-14: Standard Guide for Placement of Blind Actual Leaks during Electrical Leak Location Surveys of Geomembranes.
- ASTM D6747-15: Standard Guide for Selection of Techniques for Electrical Detection of Leaks in Geomembranes.
- D8265-19: Standard Practices for Electrical Methods for Mapping Leaks in Installed Geomembranes.
- ASTM D7007: Standard Practices for Electrical Methods for Locating Leaks in Geomembranes Covered with Water or Earth Materials.

3.4.1.2 Qualification of Specialist *Contractor*

The *Contractor* shall be approved by the Project Engineer and the Employer, and the following information is to be submitted:

- Corporate background and information.
- *Contractor* capabilities and qualification requirements:

o *Contractor* must have tested a minimum of 50,000 sqm.

o *Contractor* shall provide curriculum vitae's (CV's) of key personnel – professional competence/experience.

o Proof of certification of personnel to conduct the electrical leak surveys as issued by an independent certification body such as Geosynthetic Research Institute or any other approved institution that can certify the technicians are qualified to carry out the tests as per applicable ASTM test methods.

o *Contractor* shall provide a list of equipment and their calibrations certificates must be provided with the bid submission.

o A copy of *Contractor*'s quality control plan and data capturing templates to be submitted with bid submission.

o Health and Safety plan.

- A list of at least five (5) completed projects in the last twenty-four (24) months. For each project, the following information shall be provided:

o Purpose of testing, its location, and start/finish dates.

o Name of facility owner, project manager and engineer and contact details.

o Two reference letters from previous clients to be provided as part of the bid submission.

o Type, thickness, and surface area of the installed geomembrane.

- The *Contractor* conducting the electrical leak survey shall be independent from the owner, earthworks *Contractor*, liner installer and design engineering firm of the project.

3.4.1.3 Site Preparation Requirements

The electrical leak survey is required to be performed on the primary geomembrane liner (non-conductive) or cover material at the project site as described above.

It is the responsibility of the *Contractor* to familiarize themselves with the following in relation to the design of the facility and successful execution of the electrical leak survey:

- Boundary conditions that are applicable to the site conditions and facility design layout or configuration such as the sloping of the embankments, provision of berms to aid testing, provision of sufficient water to conduct the test and any limitations applicable to the applicable leak survey.

- Subgrade conductivity – the primary geomembrane will have an underlying compacted clay layer, refer to construction drawings for details. It is the responsibility of the *Contractor* to ensure he is familiar with the technical specifications of the compacted clay layer and where required the subgrade material must be watered before placement of the geomembrane.

- Above Geomembrane – the primary geomembrane will have a cover material that may consist of, geocells, concrete, coarse ash, etc. refer to construction drawings for details. It is the responsibility of the *Contractor* to ensure he is familiar with the technical specifications of the cover material, where required the cover material must be watered before testing.

- The *Contractor* shall ensure that the subgrade conductivity trial testing is performed as early as possible in the case of questionable site soils.

- Sensitivity test – shall be performed to consider the site-specific conditions and the basin configuration. The calibration location shall clearly be marked and repaired afterwards. Alternatively, an artificial leak may be used.

- Objects that will provide a source of electrical grounding on site should be carefully considered and addressed by the *Contractor* prior to construction of the facility and the electrical leak survey commencing. The *Contractor* shall familiarize himself with the sequence of the construction activities on site in particular relating to any metal pipe penetrations, concrete inlet or outlet structures, including metal batten strips, if they exist on construction drawings, and the consequence and impact of it in relation to electrical grounding shall be communicated to the Project Engineer prior to commencement of construction and possible mitigation measures shall be clearly addressed to the Project Engineer.

- The *Contractor* shall be responsible in the preparation of the areas to be tested. The surface of the geomembrane in the area to be tested shall be cleaned and shall be free of grease, moisture, dust, dirt, debris, and foreign material of any kind.

- Wrinkles in the liner can interfere with the intimate contact between the liner and the subgrade beneath it. The *Contractor* shall ensure the liner is relatively flat but when the wrinkles are severe the work must be performed during the early morning or late afternoon/evening.

- The geomembrane must be completely installed in the facilities prior to the electrical leak survey commencing.

3.4.1.4 Weather Restrictions

The *Contractor* shall consider that rapid weather changes are possible at the site, resulting in delays in performance of the electrical leak survey.

Electrical leak surveys shall only be undertaken under weather conditions allowing such work within the warranty limits imposed for certification by the Project Engineer or appointed CQA Engineer and which will not jeopardize the integrity of the geomembrane barrier performance function. Electrical leak surveys shall not occur under adverse environmental conditions, including, but not limited to:

- Precipitation of any kind, including condensing fog.
- Areas of ponded water due to rain, that inhibits safety to conduct the survey.
- Periods of excessive winds or dust.

The *Contractor* shall submit to the Project Engineer prior to commencement of surveying and upon agreement and approval of the Project Engineer what will be deemed and defined as adverse weather conditions in relation to project site weather conditions. The *Contractor* shall provide for a weather measuring device including and not limited to a rain gauge, and a wind vane.

3.4.1.5 Quality Control of Surveys

The *Contractor* shall submit prior to commencement of the electrical leak survey the following: -

- Detailed method statement on how the electrical leak survey shall be executed; the method statement shall include:

o Survey method according to the applicable ASTM test method as outlined in Section 3.1.1 of this specification.

o Panel layout of area to be surveyed.

o Equipment to be used and calibrations certificates.

o Technicians to be used on the project and their relevant qualifications.

o Testing schedule indicating daily production rates.

In addition, the *Contractor* shall ensure the following:

- The sensitivity testing procedures of the applicable ASTM test method is agreed with the Project Engineer/CQA Engineer.
- The *Contractor* shall ensure that the survey is performed with the same parameters as were employed during the sensitivity test. In addition, the Project Engineer/CQA Engineer shall verify that the applicable ASTM survey method was comprehensively applied to the entire survey area.
- If the Project Engineer/CQA Engineer suspects that the sensitivity test performed by the survey *Contractor* does not represent site conditions, then the option to create a “blind actual leak” shall be considered. If a blind leak is installed, it should be in accordance with the Standard Guide for Placement of Blind Actual Leaks during Electrical Leak Location Surveys of Geomembranes (ASTM D7909). Per the ASTM Standard Guide, a blind actual leak is “a circular hole in the geomembrane intentionally placed by the owner or owner’s representative to ensure that the site conditions are suitable for an electrical leak location survey and that a valid electrical leak location survey is performed.

3.4.1.6 Identified Leak Repairs

4.1.6.1 General

Any identified leaks found during the electrical leak survey shall be repaired immediately before proceeding to other areas to be tested. Reasons for requiring repairs to the geomembrane survey may include, but are not limited to:

- Seam intersections.
- A hole, tear, or penetration, including holes in the seam for air pressure testing device.
- A scratch, gouge, or nick that penetrates more than 10 percent of the material thickness.
- A hard object underneath the geomembrane.
- A fish mouth or wrinkle at seam overlaps.
- Bridging.
- Excessive scuffing.
- Geomembrane material defects.
- Large wrinkles.

Panels that require more than one repair per 25m² shall be reported to the Project Manager and must be reported on to the Installer through the Project Manager (Geomembrane Installer) to be removed and replaced with new geomembrane panel at the Installers expense.

All repairs shall be labelled by the Technician, who shall record pertinent details relative to the repairs, such as a photography plus date and time repaired. All information shall be captured in applicable SANS 104090:2020 log sheets.

3.4.1.7 Survey Schedule

The *Contractor* shall provide adequate manpower as required to meet the project completion schedule. One technician shall achieve no less than 6000m²/day on the electrical leak survey.

3.5 REPORTING REQUIREMENTS OF THE ELECTRICAL LEAK SURVEY

3.5.1 Daily Reports

The *Contractor* shall provide daily reports on the electrical leak surveyed areas and shall contain the following information as a minimum:

- Description of the area of survey.
- Survey methodology.
- Description of test apparatus.
- Climatic conditions.
- Field notes, including memoranda of meetings and/or discussions with the Project Engineer and liner installer.
- Identification of any site conditions that do not conform to Section 6 of ASTM D8265-19.
- Results of system functionality and calibration test (sensitivity test).
- Location (GPS coordinates) photographed type and size of leaks.
- Repairs on detected leaks and photographed proof of repairs.

- Signatures of witness personnel not associated with *Contractor* such as client representative or Resident Engineer or CQA Engineer.

- Reporting requirements as per Section 9 of ASTM D8265-19, where applicable.

3.5.2 Final Survey Completion Report

The *Contractor* shall further produce a final completion report for submission to the Project Manager and CQA monitor within fourteen (14) days of completion of survey that summarises the activities documented in the daily reports. The final completion report shall also include:

- An outline of the survey method.

- Panel layout of survey areas and where leaks were identified, and repairs conducted.

- Discussion of problems and solutions.

- "As-Built" drawings (with GPS coordinates) showing all the locations where the leaks where found. *Contractor* will also request the assistance of the Geomembrane Installer to identify these locations on his overall panel layout drawing.

- Letter of Certification – the letter indicating that the facility has been surveyed to applicable ASTM test methods as per project specifications and all leaks were identified and repaired accordingly.

3.6 PAY ITEMS

3.6.1 Liner Integrity Survey Listed Items

Site Mobilization and Demobilization (Lump Sum) Qty = 5

This rate shall include:

- All mobilization and demobilization of personnel and equipment to site including: (A notice period will be given)

o Generators for power supply and extensions cables.

o Necessary accessories to conduct the survey.

o Supervision.

o Labourers to assist with, watering, isolation, and location of anomalies.

- Site medicals and inductions for all *Contractor*s' personnel during the duration for the survey period.

- Any applicable equipment permits.

- Transport costs and associated accommodation.

- Provision of a water cart for supply of water where required.

3.6.2 Liner integrity survey on cover geomembrane as per ASTM D7007 (Dipole Testing) (m2)

The rate shall include the following:

- Liner integrity survey on the installed primary geomembrane (non-conductive) as per construction drawings and in accordance with ASTM D7007: Standard Practices for Electrical Methods for Locating Leaks in Geomembranes Covered with Water or Earth Materials. The rate shall cover all site preparations related to the testing procedures and shall include sensitivity tests or trial tests, performance of the leak survey, identification of leaks and repairs; data processing and capturing, as well as preparational work to conduct testing, repairs, closure, and retesting.

- Where necessary additional requirements as stipulated in ASTM D7007.

- All site preparations related to the testing procedures.
- Sensitivity tests or trial tests, performance of the leak survey, identification of leaks and repairs.
- Data processing and capturing.
- Preparation of daily reports as per Section 4.1 of the specification.
- Attendance of project site meetings when required.

3.6.3 Liner Integrity Survey on exposed Geomembrane

As per ASTM D7953-14 (Arc Testing) or

The rate shall include the following:

- Liner integrity survey on the installed primary geomembrane (non-conductive) as per construction drawings and in accordance with ASTM D7953-14: Standard Practice for Electrical Leak Location on Exposed Geomembranes using the Arc Testing Method.
- Where necessary additional requirements as stipulated in ASTM D7909-14.
- All site preparations related to the testing procedures.
- Sensitivity tests or trial tests, performance of the leak survey, identification of leaks and repairs.
- Data processing and capturing.
- Preparation of daily reports as per Section 4.1 of this specification.
- Attendance of project site meetings when required.

3.6.4 Liner Integrity Survey on exposed Geomembrane

As per ASTM D7002-16 (Water Puddle)

The rate shall include the following:

- Liner integrity survey on the installed primary geomembrane (non-conductive) as per construction drawings and in accordance with ASTM D7002-16: Standard Practice for Leak Location on Exposed Geomembranes using the Water Puddle System.
- Where necessary additional requirements as stipulated in ASTM D7909-14 and ASTM D8265-19.
- All site preparations related to the testing procedures.
- Sensitivity tests or trial tests, performance of the leak survey, identification of leaks and repairs.
- Data processing and capturing.
- Preparation of daily reports as per Section 4.1 of the specification and ASTM D8265-19 reporting requirements.
- Attendance of project site meetings when required.

3.6.5 Incremental Weather Standby Rate RATE ONLY (R/hr)

The rate only charges for any standby time related to incremental weather conditions as prohibits the *Contractor* to proceed with works as per conditions outlined in Section 3.1.4 of the project specifications.

3.6.6 Preparation of Final Completion Electrical (Qty 5 reports)

Leak Survey Report (Lump Sum)

Preparation of Final electrical leak survey report on the installed primary geomembrane (non-conductive) as per requirements listed in Section 4.2 of the technical specifications. The Final Completion Report will be submitted within fourteen (14) days from completion of surveys. The scope of work entails the CQA, Design & Construction Monitoring of HDPE Geomembrane related activities for the extension of the Continuous Ash Dump Phases 2 and 3 Projects.

4. Drawings

Not applicable

5. Specifications

This specification covers the test methods applicable for locating leaks in installed covered geomembranes using electrical methods. This specification shall use the term “leak” to mean holes, punctures, tears, knife cuts, seam defects, cracks, and similar breaches in an installed primary layer HDPE geomembrane at the Kendal Ash Disposal Facility.

5.1 Electrical Leak Survey Project Requirements

5.1.1 Applicable ASTM Test Methods

The electrical leak survey on the Kendal Ash disposal facility (ADF), Pollution Control Dams (PCD’s) and Clean Water Dams (CWD’s) will be performed on the primary geomembrane (non-conductive) or cover material in accordance with:

- ASTM D4439-18: Terminology for Geosynthetics
- ASTM D6747-15: Standard Guide for Selection of Techniques for Electrical Detection of Leaks in Geomembranes.
- ASTM D7953-14: Standard Practice for Electrical Leak Location on Exposed Geomembranes Using the Arc Testing Method.
- ASTM D7002-16: Standard Practice for Leak Location on Exposed Geomembranes Using the Water Puddle System.
- ASTM D7007: Standard Practices for Electrical Methods for Locating Leaks in Geomembranes Covered with Water or Earth Materials.
- D8265 – 19: Standard Practices for Electrical Methods for Mapping Leaks in Installed Geomembranes

The ASTM test methods are further applicable, where deemed necessary.

It is the responsibility of the ELLS specialist (*Contractor*) to ensure any site design changes (such as material that may have changed that will be placed above or below the testing geomembrane, site geometry, penetrations) that may occur during construction that are different to tender drawings on which initial testing assumptions and costing were made on conducting the electrical leak survey are accordingly addressed to the Project Engineer, in no less than four (4) weeks prior to the commencement of the leak survey. The *Contractor* shall communicate these changes and implications in a detailed method statement for submission and approval by the Project Engineer.
As a minimum requirement the *Contractor* shall adjust and address any revisions and changes to the test methods of the electrical leak survey by quoting the applicable ASTM test method for execution of the electrical leak survey, in particular and not limited to the following:

- ASTM D7703-16: Standard Practice for Electrical Leak Location on Exposed Geomembranes Using the Water Lance System.
- ASTM D7240-18: Leak Location using Geomembranes with an Insulating Layer in Intimate Contact with a Conductive Layer via Electrical Capacitance Technique (Conductive Geomembrane Spark Test).
- ASTM D7909-14: Standard Guide for Placement of Blind Actual Leaks during Electrical Leak Location Surveys of Geomembranes.
- ASTM D6747-15: Standard Guide for Selection of Techniques for Electrical Detection of Leaks in Geomembranes.

- D8265-19: Standard Practices for Electrical Methods for Mapping Leaks in Installed Geomembranes.
- ASTM D7007: Standard Practices for Electrical Methods for Locating Leaks in Geomembranes Covered with Water or Earth Materials.

Title	Date or revision	Tick if publicly available
General Specifications:		
Health and Safety requirements		√
Environmental requirements		√
Site regulations and access control		√

6. Constraints on how the *Contractor* Provides the Works

The *Contractor* is required to consider the following as some of the constrains which might impact the *Contractor*'s activities:

- Changes in the Environmental legislation and regulations
- Delay in construction by others
- Site stability and community unrest
- Access to information from others
- Inclement weather
- Working with others
- Inclement weather

6.1 Meetings

Meetings will be held between the *Services Manager* and the *Contractor* (and any other co-opted members). The *Contractor* is represented at each meeting by appropriate members of its staff.

The venue for these meetings is determined by the *Services Manager*. The *Services Manager* writes the minutes of meetings.

Any action of the *Services Manager, Supervisor, Contractor* and *Adjudicator* implied in the minutes of meetings with contractual implications is confirmed by a separate communication given in accordance with this Works Information.

The *Contractor* reports the overall progress and as a minimum requirement, the following is addressed:

i. *Contractor's* current activity progress and planned finish dates
ii. *Contractors* to report on all items listed in the NEC core clause, 31
iii. *Contractor's* and *Services Manager's* programme agenda compared for problematic differences
iv. Current and projected manpower by class
v. Health, safety and quality Management
vi. The progress of any other relevant activities
vii. To discuss any technical or commercial issues
viii. Problem areas or concerns

Regular meetings may be convened and chaired by the *Services Manager* as follows:

Table 3 – Meetings Schedule

Title and Purpose	Approximate Time & Interval	Location	Attendance by
Risk register and compensation events	Weekly	Venue determined by the *Services Manager*	Relevant appointed members of a Risk or and Compensation event committee
Overall contract progress and feedback (from contract date to execution commencement)	Weekly	Venue determined by the *Services Manager*	*Employer*, *Contractor*, *Supervisor*, and Others as determined by the *Services Manager*
Planning Meetings (Including integration meetings with Others)	Weekly	Venue determined by the *Services Manager*	*Employer*, *Contractor*, *Supervisor*, Planners and Others as determined by the *Services Manager*
Safety Meetings	Fortnightly	Venue determined by the *Services Manager*	*Employer*, *Contractor*, *Supervisor,* SHE Officers and Others as determined by the *Services Manager*
Contractor's SHE Meetings	Monthly	Venue determined by the *Services Manager*	*Employer*, *Contractor*, *Supervisor,* SHE Officers and Others as determined by the *Services Manager*
Payment Assessment Meeting	Monthly	Venue determined by the *Services Manager*	*Employer*, *Contractor*, *Supervisor*, Quantity Surveyor and Others as determined by the *Services Manager*
Quality and Engineering Meeting	Weekly	Venue determined by the *Services Manager*	*Employer*, *Contractor*, *Supervisor,* Quality Officers and Others as determined by the *Services Manager*

All meetings are 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. People attending meetings must have authority to make decisions and execute the decision.

6.2 Use of standard forms

Not applicable

6.3 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:

The *Contractor* shall address the tax invoice to
Kendal Power station

and include on each invoice the following information:

The words “TAX INVOICE” at the top of the invoice
Name and address of the *Contractor* and the Service Manager.
Name and address of the Employer
The contract number and title.
The purchase order number
Invoice date
Invoice number
Contractor’s VAT registration number.
The Employer’s VAT registration number 4740101508.
Description of service provided for each item invoiced based on the Price List.
Total amount invoiced excluding VAT, the VAT and the invoiced amount including VAT.
Banking details as per Eskom’s vendor database

The *Contractor* shall send the invoices for payment to: InvoicesgrpcapitalOTH@eskom.co.za and copy the following Finance personnel: HlongwKh@eskom.co.za, SibisiSI@eskom.co.za, DavidsGPN@eskom.co.za
The *Contractor* includes the following information on each tax invoice:

6.4 Records of Defined Cost

Not applicable

6.5 Accelerated Shared Growth Initiative – South Africa (ASGI-SA)

Not applicable

6.6 BBBEE and preferencing scheme

Not applicable

6.7 Facilities to be provided by the *Contractor*

Stockpile area

6.8 Title to material from excavation and demolition

Not applicable

6.9 Design by the *Contractor*

Not applicable

6.10 Cataloguing requirements by the *Contractor*

Not applicable

7. Requirements for the programme

PROGRAMME AND PLANNING

7.1 GENERAL

The *Contractor* submits a single programme that incorporates the programmes of all of his sub-*Contractor*s. The interface points between his different sub-*Contractor*s as well as the interface points between the individual sub-*Contractor*s and the *Contractor* are to be clearly identified.

7.2 DETAILS OF THE EMPLOYER AND OTHERS WHO WILL BE OCCUPYING THE WORKING AREAS AT THE SAME TIME

Other *Contractor*s are working in the same area as the work of this contract. In this regard, the *Contractor* co-ordinates his work with the Project Manager to maintain harmonious working conditions on Site.
During the progress of the works the *Contractor* provides access to Others who also execute work in the same area, on an as and when required basis.

The *Contractor* makes his own assessment of the problems and difficulties which may be encountered for providing access to and interfacing with Others (this includes access difficulties experienced during construction or commissioning phase).
No extra payment or claim of any kind on account of providing reasonable access is allowed.

7.3 COMPUTERISED PLANNING AND REPORTING

The Project Manager does not intend duplicating the *Contractor*'s programming and planning, however, portions or high-level extractions of the Accepted Programme may be used in the Employer's internal master project programme for control purposes.
The *Contractor* submits updated computer files on a monthly basis, or at any other time as required by the *Contractor* or as instructed by the Project Manager.
The updated computer file shows the logic and all filters and layouts used in the programme. MS Project has been adopted by the Employer for all planning, progress monitoring and reporting on the Kendal Power Station Continuous Ash Disposal Extension Facility Project.
The *Contractor* obtains this software and applies it for the planning and control of the works in line with the accepted Work Breakdown Structure.

7.4 ADDITIONAL PROGRAMME REQUIREMENTS

The *Contractor* uses the Critical Path Method (CPM) technique for programme and planning.
The programme shows the actual critical path clearly. The preparation of the programme contains a programme basis document. This basis document describes the programme and planning methodology, format, project execution philosophy, resource assumptions, qualifications and any other items that may have a substantive impact on the schedule.
The programme layout considers the accepted WBS, reflecting the manner in that the works are to be performed and how control data are summarised, reported and monitored.
The following levels of programme are to be used for this project for dynamic integrated project control:

- Management level programme (Level 1)
- Project level programme (Level 2)
- Control level programme (Level 3)
- Discipline speciality programme (Level 4)

The *Contractor* submits the level 2 programme with the tender documentation. The level 3 programme is to be submitted within one month following design freeze of the unit

7.4.1 MANAGEMENT LEVEL PROGRAM (LEVEL 1)

The management level programme is used to establish work goals and overall time Frames for the works.
It is a statement of project objectives recorded in graphic form. The management level programme defines:

- Established goals or major milestones key dates,
- The duration of major operations and their relationship to one another,
- Identified Long Lead material items,
- Responsibility assignments for accomplishing project objectives.

7.4.2 PROJECT LEVEL PROGRAM (LEVEL 2)

A "rolled up" programme from the control level programme is produced. It is separated by Work packages areas and by Phase (Engineering, Procurement, Execution and Commissioning).

7.4.3 CONTROL LEVEL PROGRAM (LEVEL 3)

The project level programme is prepared representing the significant work activities and deliverables associated with the works. The end product is a time scaled bar-chart schedule developed through use of a logic network. This programme is separated by sections of the work package, by WBS.
The work within each work package area is broken down by engineering discipline, procurement of tagged equipment and bulks, execution by *Contractor*, and commissioning & start-up. The control level programme is resource-loaded.

7.4.4 DISCIPLINE SPECIALITY PROGRAM (LEVEL 4)

The need for supplemental or discipline speciality programme is dependent upon the
requirements and/or circumstances of the contract.
The discipline speciality programme developed and maintained by the *Contractor* is generated for tracking and control of various activities and deliverables for all phases of the contract. This programme is usually formatted in MS Project report utilising the WBS structure.
This programme typically represents day-to-day tasks which are work package based and become summarised in the Level 3 activities. Resource information for manpower, Plant, Material and Equipment and reflected in the resource histograms is to be provided by the *Contractor*. The *Contractor*'s programme is to align to the *Contractor*'s Method Statement. The programme to show where the Electric Leak Location Survey (ELLS) will be performed (Ash damp Phase 2, Ash damp Phase 3, PCD 1, PCD 2, CWD1, CWD 2) and the type of ELLS which will be performed at a particular section and at what point of executing the scope.

7.5 SUBMISSION OF REVISED PROGRAMMES AND PROGRESS REPORTING

The *Contractor* submits two hard copies and one electronic copy in MS Project, of each revised programme and progress report to the Project Manager for acceptance. All formally issued reports are to follow the progress reporting requirements as stated below.

7.5.1 STATUS REPORTS

A status report is submitted by the *Contractor* to the Project Manager. This
Report should align to section 5 of the document requirement. Contents of a weekly report should include the following items:

- The updated MS Project programme
- Programme summary narrative
- Progress and performance summaries

8. Services and other things provided by the *Employer*

Item	Date by which it will be provided
Water	20 June 2022
Electricity	20 June 2022
Laydown area	20 June 2022

C4: Site Information

The site is Kendal Power Station Ash Disposal Facility extension. The site is on old Ogies Road.

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

1. Access limitations

The *Contractor* will be working with others on the construction site.

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

Not applicable

3. Hidden and other services within the *site*

Not applicable

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

The *Contractor* will be working on an area which is constructed by others.