



NEC3 Engineering and Construction

Short Contract (ECSC3)

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

and

for Fire Detection System

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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:

Title of the Contract

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	[•]	[•]
3	[•]	[•]
4	[•]	[•]
5	[•]	[•]
6	[•]	[•]
7	[•]	[•]

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

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

For the tenderer:

For the Employer

Signature _____

Name _____

Capacity _____

On behalf of _____
(Insert name and address of organisation)

Name & signature of witness _____

Date _____

C1.2 Contract Data

Data provided by the *Employer*

Clause	Statement	Data
General		
10.1	The <i>Employer</i> is :	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 <i>Employer's</i> representative to whom the <i>Employer</i> in terms of clause 14.4 delegates his actions ¹ is :	Makhosazane Thandeka Mantshintshi
	Address	Kendal Power Station Kendal Balmoral Turn off N12 Johannesburg/eMalahleni Private Bag X7272 eMalahleni 1035 SA
	Tel No.	013 647 9131
	Fax No.	+086 243 6515
	E-mail address	MantshMt@Eskom.co.za
11.2(11)	The <i>works</i> are	Design Review, Supply, Installation and Commissioning of a combined Aspirating Smoke Detection (ASD) and Hydrogen Detection System in 8 Battery Rooms at Kendal Power Station. Design Review, Supply, Installation and Commissioning of a Linear Heat Detection system in cable tunnels. Design, supply, Installation and Commissioning of a Fire detection System at the New Chemical Services Building. Interfacing the new FDS to the existing FP2000 Aritech fire alarm panels
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 <i>site</i> is	Kendal Power Station

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

30.1	The <i>starting date</i> is.	TBC
11.2(2)	The <i>completion date</i> is.	TBC.
13.2	The <i>period for reply</i> is	2 weeks
40	The <i>defects date</i> is	52 weeks after Completion date.
41.3	The <i>defect correction period</i> is	<p>One [1] week for normal defect Critical equipment is 24 Hours (Critical equipment is defined as any delay that will affect the running of the plant and/or impact on safety)</p> <ul style="list-style-type: none"> • Safety defect with 24 hours 1st level technical person will be onsite. • Load loss Defects with in 24 hours 1st level technical person will be onsite. <p>The actual correction of the defect shall be subjected to the availability of access to the plant and system.</p>
50.1	The <i>assessment day</i> is the	25th to the 30th of each month.
50.5	The <i>delay damages</i> are	1000 per day
50.6	The retention is	5%
51.2	The interest rate on late payment is	<p>0% [Insert a rate only if a rate less than 0.5% per week of delay has been agreed]</p>
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	the amount of the deductibles relevant to the event
	Does the United Kingdom Housing Grants, Construction and Regeneration Act (1996) apply?	No
93.1	The <i>Adjudicator</i> 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 <i>Adjudicator nominating body</i> 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 <i>tribunal</i> is:	arbitration.
	The <i>arbitration procedure</i> is	the latest edition of Rules for the Conduct of Arbitrations published by The Association of Arbitrators (Southern Africa) or its successor body.
	The place where arbitration is to be held is	Johannesburg South Africa
	The person or organisation who will choose an arbitrator	
	- if the Parties cannot agree a choice or	the Chairman for the time being or his nominee
	- if the arbitration procedure does not state who selects an arbitrator, is	of the Association of Arbitrators (Southern Africa) or its successor body.

The conditions of contract are the NEC3 Engineering and Construction Short Contract (April 2013)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

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.

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

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

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

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

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

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

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

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

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 <i>Employer's</i> insurance The <i>Employer's</i> policy deductible as at contract date, where covered by the <i>Employer's</i> insurance	The <i>Employer's</i> certificate of Completion has been issued
Loss of or damage to Equipment, Plant and Materials	The replacement cost where not covered by the	The Defects Certificate has been issued

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

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 minimum 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 effected 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 Engineering and Construction Short Contract (April 2013) and the relevant parts of its Guidance Notes (ECSC3-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 <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	[•]%
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.

The Price List is as follows / contained in _____ (delete the text which does not apply and this note)

PART C2: PRICING DATA PAGE 17 C2.2 ECSC3 PRICE LIST

C3: Scope of Work

C3.1 Works Information

1. Description of the works

1.1. Executive overview

The scope for the works is described below:

1.1.1. Cable tunnels and 8 battery rooms

- a) The Contractor designs, supply, install, configure, commission the interface of the Linear Heat Detection (LHD) system in the cable tunnels and of a combined Aspirating Smoke Detection (ASD) and Hydrogen Detection System in all 8 Battery Rooms to the existing Stores (Panel 8), Control rooms (Panel 1 to Panel 6), and EOD Aritech fire alarm panels. The Aritech fire alarm panel models are FP2864C-99 and FP2864N.
- b) The Contractor performs design reviews (check and correct) of the provided designs by the Project Manager, supply, manufacture, storage, transport, install and commission the approved design of a Linear Heat Detection (LHD) system in all cable tunnels at Kendal Power Station.
- c) The Contractor performs design reviews (check and correct) of the provided designs by the Project Manager, supply, manufacture, storage, transport, install and commission the approved design of a combined Aspirating Smoke Detection (ASD) and Hydrogen Detection System in 8 Battery Rooms at Kendal Power Station. All battery room are classified as zone 2.
- d) The Contractor extends, supply, storage, transport, install, configure, commission the number of fire alarm loops of the existing fire alarm panel that are required to execute the works. In the case where extension is not feasible, the contractor supplies, install and commissioning a latest model of Aritech fire alarm panel. The existing numbers of loops on the Aritech fire panel are as follows:
 - Panel 1: 4 loops
 - Panel 2: 4 loops
 - Panel 3: 4 loops
 - Panel 4: 4 loops
 - Panel 5: 4 loops
 - Panel 6: 4 loops
 - Panel 8: 8 loops
- e) The Contractor performs all factory acceptance tests, site integration testing, and site acceptance tests according to the testing requirements outlined in the Works Information and as guided by SANS 10139 fire system inspection and testing.

- f) The Contractor decommissions the existing fire detection system in the cable tunnels and its loops and configurations in the local FP2864C-99 Airtech fire alarm panels (Store) and EOD fire alarm panel. It is the responsibility of the Contractor to decommission the existing system only after the new system is installed, commissioned, proven to be meeting the works requirements and acceptance tests.
- g) The Contractor complies with the Employers' decommissioning standards and requirements.
- h) The Contractor compiles and submits documentation as per the Vendor Document Submission Schedule (VDSS) to the Project Manager for acceptance.
- i) The Contractor packages and supplies all Equipment, Plant and Materials, needed for the works and its transport, storage, and delivery to Site.
- j) The Contractor stores and secure all Equipment, Plant and Materials on Site.
- k) The Contractor performs quality control and assurance throughout all phases of works.
- l) The Contractor corrects all Defects of the works.
- m) The Contractor generates information where information is not available and validates and then implements such information to enable them to meet the requirements of the works.
- n) The Contractor complies with all design, installation, cabling and commissioning and decommissioning requirements in line with Employers and SANS standards outlined in the design standard and code section of this Works Information, to deliver a compliant fire detection design that performs optimally in the environmental conditions of the Employer.
- o) It is the responsibility of the Contractor to ensure all required design standards are complied with including those that the Employer might have omitted in design standard and code section of this Works Information.
- p) The following accreditation and skills are a mandatory requirement for executing the works:
 - SAQCC accreditation at Designer level
 - SAQCC accreditation at Cabler
 - SAQCC accreditation at Installation level
 - SAQCC accreditation at Commissioning level

1.1.2. Chemical Services Building

- a) The Contractor design, supply, manufacture, storage, transport, install and commission the approved and SANS 10139 compliant design of a Fire Detection System at the New Chemical Services Building at Kendal Power Station.
- b) The Contractor design, supply, manufacture, storage, transport, install, configure, and commission the approved design of a local Aritech fire alarm panel at the New Chemical Services Building at Kendal Power Station. The Aritech fire alarm panel models must be latest addressable panel.
- c) The Contractor design, manufacture, storage, transport, supply, install, configure, commission the interface of the local Aritech fire alarm panel at the new Chemical Services Building to the OPCR Aritech fire alarm panel.
- d) The Contractor design, manufacture, storage, transport, supply, install, configure, commission the interface of the Fire Detection System to the new Chemical Services Building HVAC system.
- e) The Contractor ensures that all proposed designs are supported by the OEM for at least 10 years or more from time of implementation.
- f) The following accreditation and skills are a mandatory requirement for executing the works:
 - SAQCC accreditation at Designer level
 - SAQCC accreditation at Cabler level
 - SAQCC accreditation at Installation level
 - SAQCC accreditation at Commissioning level

1.2. Employer's objectives and purpose of the works

All battery rooms at Kendal Power Station are not equipped with fire detection and H2 explosive level monitoring and this poses a safety risk. In case of a fire event and/ or increase in H2 concentration level will go undetected. Hydrogen levels in the battery rooms are also not monitored and this may pose a health risk to personnel entering the battery rooms in case of high hydrogen concentration levels. Battery rooms are classified as hazardous locations according to SANS 10108 with a risk of fire explosion. Rechargeable batteries use an electrochemical reaction to convert available electrical current into stored chemical energy. This chemical reaction can produce quantities of hydrogen gas, which is highly flammable. Hydrogen gas can lead to catastrophic explosions when not properly

managed or due to lack of proper ventilation. Hence, early smoke detection and reliable hydrogen gas monitoring are required for battery rooms.

According to NFPA 850, cable spreading rooms and cable tunnels should be protected with automatic sprinkler or gaseous extinguishing systems and early warning fire detection systems. Currently, optical smoke detectors are installed in cable tunnels with inadequate coverage in reference to the requirements from SANS 10139. The cable tunnels have high amount of ash which contribute to a high number of nuisance alarms on the fire detection system. Optical smoke detectors are not a suitable fire detection system for the cable tunnels considering the current environmental conditions at the station. Thus, in case of a fire event the fire might go undetected.

The new Chemical Services Building is a newly constructed building and does not have fire detection system installed in it. It is a requirement of the National Building Regulations and Building Standards (SANS 10400) for a building to have fire detection system installed before occupancy can take place.

Thus, the objective and purpose of the works, is to address the nuisance alarms that are caused by the current installed system in the cable tunnels that is not operating optimally in the Employer's current environmental conditions. In addition, is to achieve compliance to SANS 10400 for the new Chemical Services Building and SANS 10139 for the 8 battery rooms by installing Aspirating Smoke Detection (ASD) and Hydrogen Detection System to detect both high levels of H₂ present in the room as well as smoke to ensure safety of all personnel working in the area.

1.3. Interpretation and terminology

1.3.1. Definitions

- a) **Aspirating Smoke Detector:** smoke detector, in which air and aerosols are drawn through a sampling device and carried to one or more smoke sensing elements by an integral aspirator (e.g., fan or pump).
- b) **Linear Heat Detector:** detectors which respond to heat applied to any point along the length of the sensing element.
- c) **Addressable System:** System in which signals from detectors, manual call points, or any other devices are individually identified at the control and indicating equipment.
- d) **Alarm Zone:** Geographical subdivision of the protected premises, in which the fire alarm warning can be given separately, and independently, of a fire alarm warning in any other alarm zone.
- e) **Classification:** Controlled disclosure: controlled disclosure to external parties (either enforced by law, or discretionary).

- f) **Detection Zone:** Subdivision of the protected premises such that the occurrence of a fire within it will be indicated by a fire alarm system separately from an indication of fire in any other subdivision.

NOTE: A detection zone will usually consist of an area protected by several manual call points and/or detectors.

- g) **Fire Detection:** The term fire detection and alarm systems include systems that range from those comprising only one or two manual call points and sounders to complex networked systems that incorporate many automatic fire detectors, manual call points and sounders, connected to numerous intercommunicating control and indicating panels.
- h) **Fire Alarm Panel:** Analogue addressable fire detection and alarm control system components that monitor inputs and controls outputs through various types of circuits.
- i) **Functional System:** A fully integrated working system which meets the safety, reliability and operability criteria and performs all detection algorithms, alarming, safety functions and supervisory functions.
- j) **Manual Call Point:** Component of a fire detection and alarm system which is used for the manual initiation of an alarm.

1.3.2. Abbreviations

The following abbreviations are used in this Works Information:

No	Abbreviation	Description
1	ASD	Aspirating Smoke Detection System
2	C&I	Control and Instrumentation
3	COC	Certificate of Compliance
4	EOD	Electrical Operating Department
5	FAT	Factory Acceptance Test
6	FDS	Fire Detection System
7	H2	Hydrogen
8	IEC	International Electrotechnical Commission
9	I/O	Input/ Output
10	LHD	Linear Heat Detection
11	LED	Light Emitting Diode
12	LOSS	Limits of Supply and Services
13	MCP	Manual Call Point
14	NFPA	National Fire Protection Association
15	OPCR	Outside Plant Control Room
16	OHSACT	Occupational Health and Safety act
17	PVC	Polyvinyl Chloride
18	QA	Quality Assurance
19	QC	Quality Check
20	SANS	South African National Standards
21	SAT	Site Acceptance Test
22	SAQCC	South African Qualification and Certification Committee for the Fire Industry
23	SIT	Site Integration Test
24	SSB	Station Service Building
25	SHEQ	Safety, Health and Environment
26	VDSS	Vendor Document Submission Schedule
27	VESDA	Very Early Smoke Detection Alarm System
28	ZMU	Zone Monitoring Unit

2. Drawings

No	Drawing No.	Description / Title
1	0.64/37350	Fire detection system main workshop & stores tunnel layout loop 5
2	0.64/37390	Fire detection system main workshop & stores tunnel layout loop 6
3		Fire detection system overland layout for main workshop & stores Loop 7
4	0.64/37706	Fire detection system cable tunnel substation east loop 7

3. Specifications

The following Technical Specification should be adhered to.

- a) Fire panels to be used should be addressable panels.
- b) Linear Heat Detection (LHD) system in the cable tunnels.
- c) Aspirating Smoke Detection (ASD) and Hydrogen Detection System in all 8 Battery Rooms.

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

4.1 Meetings

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

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

Any action of the *Project 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:

- a) *Contractor's* current activity progress and planned finish dates.
- b) *Contractors* to report on all items listed in the NEC core clause, 31.
- c) *Contractor's* and *Project Manager's* program agenda compared for problematic differences;
- d) Current and projected manpower by class.
- e) Health, safety and quality Management.
- f) The progress of any other relevant activities.
- g) To discuss any technical or commercial issues.
- h) Problem areas or concerns.

Title and purpose	Approximate time & interval	Location	Attendance by:
Risk register and compensation events	Weekly	Venue determined by the <i>Project Manager</i>	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 <i>Project Manager</i>	<i>Employer, Contractor, Supervisor, and Others</i> as determined by the <i>Project Manager</i>
Planning Meetings (including integration meetings with Others)	Weekly	Venue determined by the <i>Project Manager</i>	<i>Employer, Contractor, Supervisor, Planners and Others</i> as determined by the <i>Project Manager</i>
Safety Meetings	Fortnightly	Venue determined by the <i>Project Manager</i>	<i>Employer, Contractor, Supervisor Safety Officers and Others</i> as determined by the <i>Project Manager</i>

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.

4.2 Use of standard forms

NEC 3 ECSC3 applicable templates are to be used for this Contract.

4.3 Invoicing and payment

The Z clauses make reference to invoicing procedures stated here in this Works Information. Also include a list of information which is to be shown on an invoice. The following text is provided as a guide; revise to suit actual requirements.

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* 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.

Add procedures for invoice submission and payment (e. g. electronic payment instructions)

4.4 Records of Defined Cost

In order to substantiate the Defined Cost of compensation events, the *Employer* may require the *Contractor* to keep records of amounts paid by him for people employed by the *Contractor*, Plant and Materials, work subcontracted by the *Contractor* and Equipment.

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

If the ASGI-SA requirements are to be included in this contract specify constraints which *Contractor* must comply with after contract award in regard to any ASGI-SA requirements. The ASGI-SA Compliance Schedule completed in the returnable tender schedules is reproduced here. If ASGI-SA does not apply, delete this paragraph.

The *Contractor* complies with and fulfils the *Contractor's* obligations in respect of the Accelerated and Shared Growth Initiative - South Africa in accordance with and as provided for in the *Contractor's* ASGI-SA Compliance Schedule stated below

[Insert the agreed ASGI-SA Compliance Schedule here]

The *Contractor* shall keep accurate records and provide the *Employer* with reports on the *Contractor's* actual delivery against the above stated ASGI-SA criteria. [Elaborate on access to and format of records and frequency of submission etc.]

The *Contractor's* failure to comply with his ASGI-SA obligations constitutes substantial failure on the part of the *Contractor* to comply with his obligations under this contract.

4.6 BBBEE and preferencing scheme

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

4.7 Facilities to be provided by the *Contractor*

Should the Contractor qualify for a site, the Employer will provide a site within the premises of the Power Station for the Contractor to establish himself for the execution of the works. The Project Manager together with the Site Manager will allocate a site to the Contractor. A site close to the connection points of water, electricity and toilet facilities cannot be guaranteed.

A Contractor qualifies for a site if the answer to at least one of the following questions is affirmative:

- Is the contractor needed on site daily to carryout his/her contractual duties?
- Does the nature of contract activities demand that the contractor be involved continuously, with his/her contractual duties for the whole day for four (4) or more days in a week?
- In a case of a break down, is the contractor required to respond to the call out within 15 minutes?
- Is there any statutory regulation/s that warrants that the contractor must operate within the premises of Kendal Power Station for the delivery of contractual obligations?
- The Contractor is responsible for keeping the site in good state of maintenance and is responsible to ensure that at the end of the Contract period, he informs the Site Manager to inspect the site at least thirty days (30) before the Contract end date. The Contractor shall vacate the site allocated to him at the end of the Contract or on termination of the Contract

A written request, indicating the *Contractor's* requirements in locality and area of storage, office and workshop sites is submitted to the *Supervisor* as soon as possible after the Contract Date.

4.8 Title to material from excavation and demolition

As per Clause 70.1 the Contractor has no title to Materials from excavation and demolition e.g Copper.

4.9 Design by the *Contractor*

As per the Scope of work stipulated in this contract.

4.10 Cataloguing requirements by the *Contractor*

Required Cataloguing will be done by the Contractor in accordance with Eskom standards. Requirements will be provided by the Employer in due time.

4.10 Documentation control

The documentation requirements cover the various engineering stages, from the design stage through fabrication, installation testing and commission and lastly the operating, maintenance and training stage of the project.

The Contractor is responsible for the compilation and the supply of the documentation during the various project stages and to provide the documentation programme to link with the milestone dates. Documentation and drawings are programmed for delivery to meet the milestone dates and in accordance with the agreed VDSS supplied by Employer.

All documents and records must be managed according to Technical Document and Record Management Work instruction (240-76992014), Reporting and Data Requirements Specification for Contractors (240-83561037) and all other Engineering standards referenced in this Work Information. The Employer ensures that the Contractor is provided with latest revisions of the standards. Any uncertainty regarding all specified documentation should be clarified with the Employer and clarification updates should be reflected in clarification meeting minutes. The Language of all documentation shall be English.

4.10.1 Document Identification

- a) The Contractor is required to submit a Vendor Documentation Submission Schedule (VDSS) in line with what was submitted by the Employer as per agreed dates to the Project Manager. The Contractor's VDSS shall indicate the format of documents to be submitted. Once the VDSS has been verified agreed between the Contractor and the Project Manager, the Project Manager will pre-allocate document numbers as per the VDSS and send back to the Contractor.
- b) The VDSS is revisable, and changes must be discussed and agreed between the Contractor and the Project Manager. Changes in the VDSS can be additional documentation to be submitted, changes in submission dates or corrections in documentation descriptions, document numbers etc.

4.10.2 Document Submissions

- a) All Project documents are submitted to the Project Manager with a transmittal note according to Project/Plant Specific Technical Documents and Record Management work Instruction (240-76992014). In order to portray a consistent image it is important that all documents used within the project follow the same standard of layout, style and formatting as described in the Work Instruction.
- b) The Contractor is required to submit documents as electronic and hard copies and both copies are delivered to the Project Manager with a transmittal note.
- c) In addition, the Contractor adheres to the following standards

- Project Plant Specific Technical Documents – Handover Works Instruction 240-124341168
 - Project Documentation Deliverable Requirement Specification 240-65459834
 - Technical Documentation Classification and Designation Standard 240-54179170
- d) All documentation submitted by the Contractor, is accompanied by the completed transmittal with the following field as a minimum.
- Name of the Package
 - Name of Contractor
 - Transmittal Number
 - Contractor Details
 - Date of Submission
 - Description of Document
 - Document Number
 - Document revision
 - Document type
 - Document media type
 - Number of copies
 - Purpose of submission
 - Document PBS (e.g. AKZ / KKS)
 - Signed by and date

4.11 Project Communications

- a) All Project Communication shall be submitted to the Project Manager and copy the mailbox that will be supplied to the Contractor by the Project Manager for tracking purposes.
- b) Communication/execution log of all communication to and from the Contractor shall be kept to date by both Parties. A communication matrix shall be used to define what information will be disseminated to whom and in which medium.
- c) Should there be any change in the people listed in the communication matrix, a revised communication matrix must be sent by either party to ensure that information flows effectively.

4.11.1 Email and Other Submission Method

- a) Where applicable and contractually agreed, e-mails submissions can be used, as well as other submission methods employed in the relevant project.

4.12 Intellectual Property

- a) All designs, drawings, specification, instructions, manuals and other documents created, produced by or on behalf of the Contractor for the purposes of carrying out the works (Collectively, the

'Contractor's Copyright Documents') and copyright therein and all intellectual property rights relating thereto, are, will be, and will remain the property of the Contractor for the duration of the project or contract.

- b) The Contractor hereby grants to the Employer an irrevocable, royalty free, non-exclusive and perpetual licence to use those Contractor's copyright documents supplied to the Employer under the Contract for the purpose of operating, maintaining, adjusting, and repairing the works.
- c) The Contractor shall not under any circumstances be obliged to divulge or supply any proprietary manufacturing documents, designs, processes or specifications.

4.13 Sole Remedies

- a) The Parties rights and remedies, as identified in the Contract, shall be the sole and exclusive rights and remedies available to the Parties, in respect of matters to which they are said to relate in the Contract.

4.14 Engineering Change Management

- a) All Design change management shall be performed in accordance to the latest revision of the Eskom Project Engineering Change Management Procedure (240-53114026). All design reviews will be conducted according to the Design Review Procedure (240-53113685).

4.15 Drawing Format and Layout

- a) The creation, issuing and control of all Engineering Drawings will be in accordance to the latest revision of the Engineering drawing Standard (240-86973501). Drawings issued to the Employer will be a minimum of one hardcopy and an electronic copy that is editable.
- b) All contractors are required to submit electronic drawings in Micro Station (DGN) format, and scanned drawing in pdf format. No drawings in TIFF, AutoCAD or any other electronic format will be accepted.
- c) Drawings should be natively drawn in MicroStation V8 as no conversions will be accepted.
- d) Drawings issued to the Employer may not be 'right Protected" or encrypted. The employer reserves the right to use these drawing to meet other contractual obligations. The contractor shall include the Employer's drawing numbers in the drawing title block. Drawing numbers will be assigned by the Employer as drawing are developed.
- e) All drawings shall be submitted to the Employer for quality check before hand-over. It is recommended that the Contractor send a sample drawing for each drawing type to the drawing office as soon as the first drawings are generated, to ensure the correct standard is followed before creating all drawings.

4.16 Vendor Document Submittal Schedule

- a) Vendor Document Submittal Schedule specifies the following:
- The type of documentation which is provided.
 - The native/original format in which the soft copy of the documentation is provided in addition to the .pdf soft copy.
 - The limits of supply of the documentation (clarifying the provider and maintainer of the documentation).
 - The stage in the project execution during which the documentation is provided as a deliverable.
 - Live documents that are generated and maintained by the engineering tools.
- b) Vendor Document Submittal Schedule defines the type of technical documents that are exchanged during the project execution only. It is not a document index that lists each and every document technical document.
- c) Hardcopies, .pdf soft copies and native/original softs of each document specified in Appendix 1 are provided at the stages defined in Appendix 1 – Vendor Document Submittal Schedule.
- d) All documentation submitted by the Contractor conforms to all the requirements of the technical documentation index and are in an adequate state of completeness.

4.117 Health and safety risk management

4.9.1 General

In carrying out its obligations to the Employer in terms of this contract, which obligations include, amongst others, providing the works; using Plant, Materials and Equipment; and whilst at the site for any reason, the Contractor is the “Employer” in terms of the Occupational Health and Safety Act, No. 85 of 1993, in respect of its activities and in relation to its employees, agents, and mandatories.

The Contractor does not consider itself under the supervision or management of the Employer with regard to compliance with the Safety Health and Environmental requirements.

Furthermore, the Contractor does not consider himself to be a subordinate or under the supervision of the Project Manager in respect of these matters. The Contractor is responsible for the supervision of its employees, agents, and mandatories and takes full responsibility and accountability for ensuring that they are competent, aware of the Safety Health and Environmental requirements, whilst executing the works in accordance with the Safety Health and Environmental requirements.

The Contractor ensures compliance with, amongst others:

- The provisions of the Occupational Health and Safety Act, No. 85 of 1993 and all applicable regulations (as amended), binding in terms thereof;
- The latest versions of standards, procedures, specifications, rules, systems of work and requirements of the Employer, copies of which will be provided to the Contractor on request.
- The Contractor shall prepare an environmental management plan and method statements relating to the activities that will be carried out.
- The provisions of the National Environmental Management Act (as amended) and all regulations in force from time to time in terms of that Act.
- The Contractor implements a comprehensive health, safety and environmental management system, based on the OHSAS 18001 and ISO 14001 requirements for utilisation at the project.
- The Contractor appoints a person, qualified and competent in accordance with the safety health and environmental requirements, as the liaison with the Employer's Project Safety, Health and Environmental Manager or delegated person for all such matters as pertaining related to safety, health and the environment. The Contractor shall ensure that such a person is contactable 24 hours a day, and is registered with a registered professional council approved by the Principal Director of the Department of Labour, as per the requirements of the latest Construction Regulations, inclusive of all exemptions and amendments pertaining thereto.
- The Contractor hereby indemnifies the Employer and holds the Employer harmless in respect of any and all loss, costs, claims, demands, liabilities, damage, penalties or expenses that may be made against the Employer and/or suffered or incurred by the Employer (as the case may be) as a result of, any failure of the Contractor, its employees, agents, and mandatories to comply with their obligations, and/or the failure of the Employer to procure the compliance by the Contractor, its employees, agents, and/or mandatories with their responsibilities and/or obligations in terms of or arising from the Occupational Health and Safety Act, No. 85 of 1993.

4.17.2 Mandatory Agreements

- a) In terms of sections 37(1) and 37(2) of the OHSA, the Employer is relieved of any and all of its responsibilities and liabilities pertaining to the activities performed by the Contractor (and its employees, agents, Subcontractors and mandatories) relating to the works; the use of plant, materials and equipment; and whilst at the Site for whatsoever reason.
- b) The Contractor confirms that, in terms of the Construction Regulations, regulation 6, it is hereby mandated as the designer and must perform all duties required of a designer.

- c) The Contractor confirms that he has been provided with sufficient information regarding the health, safety and environmental arrangements applicable to the works; the use of Plant, Materials and Equipment, as well as at the Site.

The Contractor Further confirms that;

- a) Prior to the Contractor commencing with any operations/ activities relating to the *Works* and/or prior to gaining access to the Site, the Contractor concludes a written mandatory agreement with the Employer in terms of section 37(2) of the OHSA and 5(1)(k) under the construction regulations. The aforementioned agreement constitutes a record of the written arrangements and procedures between the Contractor and Employer regarding health and safety.
- b) As far as is reasonably practicable, the safety and absence of risks to health in connection with the production, processing, use, handling, storage or transport of articles or substances is maintained;
- c) As far as is reasonably practicable, all hazards pertaining to the health and safety of persons and harm to the environment that are attached to any work which is performed, any article or substance which is produced, processed, used, handled, stored or transported and any plant or machinery which is used in its business, is clearly identified and, as far as is reasonably practicable, further establishes what precautionary measures should be taken with respect to such work, article, substance, plant or machinery in order to protect the health and safety of persons and or harm to the environment, and provides the necessary means to apply such precautionary measures;

Such information, instructions, training and supervision as may be necessary to ensure, as far as is reasonably practicable, the health and safety at work of its employees, agents, and mandatories is provided;

- d) As far as is reasonably practicable, no employee, agent, and mandatory perform any work or produces, processes, uses, handles, stores or transports any article or substance or operates any plant or machinery, unless the precautionary measures contemplated above, or any other precautionary measures which may be prescribed have been taken;

Such measures as may be necessary in the interest of health and safety and the environment are enforced;

- e) Work is performed and that plant, materials or equipment is used under the direct supervision of a person trained to understand the hazards associated with it and who has the authority to ensure that precautionary measures required by the Employer are implemented; and

All employees are informed of the scope of their authority as contemplated in OHSA.

4.17.3 Permit to Work

- a) The Contractor allocates staff to be trained and authorised as Responsible Persons according to the Employers' Lant Safety Regulations (36-681) and /or High Voltage Regulations. These Responsible Persons are available on Site as and when required to take out permits to work.
- b) In this contract the *Contractor* shall appoint employees to attend and be authorised as follows;
 - Two Supervisors to be Authorised in terms of the PSR as Responsible Person; and
 - Two to be Authorised in terms of ORHVS as Responsible Person.

4.18 Environmental constraints and management

The Contractor shall comply with the environmental criteria and constraints stated in the SHEQ Policy statement 32-727 and ISO 14001: 2015 standard.

4.19 Quality assurance requirements

- a) The *Contractor* shall complete and sign Form A (Enquiry/Contract/Quality Requirements for Contractor Quality Management Specification 240-105658000/ QM 58 and ISO 9001).
- b) The *Contractor* shall submit objective evidence of a developed, implemented and maintained QMS that complies with ISO 9001 or any applicable standard of quality management system (the latest applicable revision ISO 9001:2015). The following documents (approved/ signed copies) shall be submitted:
 - Quality Management System manual or a documented information that have defines and describes the QMS and its scope
 - Quality Policy, aligned with the *Contractor's* strategic direction (documented information)
 - Quality Objectives (documented information)
 - Control of documented information (both maintain and retain documented information)
 - Internal audit procedure (documented information)
 - Control of nonconforming outputs (documented information)
 - Nonconformity and Corrective action procedure (documented information)
- c) The QMS should drive all the Contractor's business management processes to ensure that all of Eskom's requirements are fully met on a consistent basis.

- The *Contractor* shall submit the latest copy of the management system internal audit reports. The audit reports must include, if applicable, nonconformity identified, and the resulting remedial actions (correction and/ or corrective action reports).
- The *Contractor* shall submit a draft contract quality plan that is specific to the scope of work as described in the tender documents. The plan must address the minimum requirements as per ISO 10005.
- Where applicable; the *Contractor* shall submit an example of inspection and test plan (ITP) or quality control plan (QCP) on similar or previous work done.
- The *Contractor* shall submit documented information for Control of Externally Provided Processes, Products and Services.
- The *Contractor* shall submit a copy of documented information for roles, responsibilities and authorities in relation to the QMS. Examples of relevant documented information are; organization charts, job descriptions, work instructions, duty statements, manuals, procedures.
- The *Contractor* shall submit documented information retained (records) of management review meetings that include agenda, meeting minutes, attendance registers, reports, presentations, etc.

4.20 Contractor's management, supervision, and key people

- a) The contractor will provide the *Employer* and the *Project Manager* with an organogram with the key people and the roles and responsibility. Organogram is to be submitted at Tender stage and will be subjected to approval by the Employer.
- b) The organogram provided must show clear reporting lines between individuals.

5. Requirements for the programme

- a) All planning and scheduling is done based on the Critical Path Method (CPM). The Contractor uses activity codes to define interfaces to be agreed upon between Project Manager and Contractor. The Contractor's programme shows the actual critical path clearly.
- b) The schedule layout considers the approved WBS, reflecting the manner the works are to be performed as per the Contractor's Method Statement and how activities are to be summarised, reported and monitored.
- c) The project programme is prepared representing the significant work activities and deliverables associated with the works.
 - The programme includes:
 - Major milestones, interface dates, access dates and key dates (for the new plant, existing plant and between Subcontractors)
 - The duration of major activities and their relationship to one another.
 - Identified long-lead material items.
 - Responsibility assignments for accomplishing project objectives end product is a time scaled bar-chart programme developed using logic network.
- d) **The Contractor's Program will be done using Microsoft Project software.**

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

6.1 Plant and Materials

6.1.1 Quality

The *Contractor* responsibilities include but are not limited to the following:

- a) The *Contractor* is accountable for the quality of the output and liable for any failures.
- b) Implementation of their QMS on site
- c) Administration of their QA/QC systems on site
- d) On-and-offsite inspections
- e) Weekly and monthly progress reporting on quality performance
- f) The *Contractor* is responsible for defining the level of intervention of QA/QC or inspections in line with the *Employers* requirements.
- g) The *Contractor* is responsible for defining the level of intervention of QA/QC or inspections to be imposed on his Subcontractor, suppliers and sub-suppliers and must ensure that these are in line with the *Employer's* requirements

- h) Where Non-Conformance (NC) notifications are issued, the Contractor acknowledges receipt within the period of reply and proposes corrective and preventive actions to the Supervisor. The corrective and preventive actions will include the implementation and completion dates. Progress on all NCs notifications issued to the Contractor must be reported to the Supervisor on weekly basis.

6.1.2 Plant & Materials provided “free issue” by the *Employer*

- a) There is no free issue for this contract, all other Plant and Materials are to be provided by the *Contractor*.

6.1.3 *Contractor's* procurement of Plant and Materials

- a) The *Employer* expects the contractor to purchase good quality material and records of such may be requested by the *Employer* at any time.

6.1.4 Spares and consumables

- a) The Contractor shall have enough spares to correct all defects picked during the project. Safety defects to be corrected within 24 hours and Normal defect 2 days. Defects during commissioning must be addressed with 24 hours.

C4: Site Information

Kendal Power Station is situated approximately 40km Southwest of Witbank in the Mpumalanga province. Construction started in 1982 and took 11 years to complete.

Kendal Power Station comprises six generating sets (Units) of 686 MW each, the station capacity is 4116 MW, which is indirectly dry-cooled. The generators produces electricity at a voltage of 22KV, the generator transformers steps up the transmission voltage to 400kV.

Kendal Power Station receives its coal supply of over a million tons per month from a neighbouring mine Khutala as well as other sources with varying characteristics. The ash that remains after the combustion of coal has two grading i.e. coarse ash (5% of total ash) and fly ash (95% of total ash). The fly ash together with waste gasses passes through the electrostatic precipitators where 99.9% of the ash is collected. The coarse ash is removed by a submerged scraper conveyor to the apron conveyor. The fly ash is moistened and mixed in the ash conditioners. Both gratings of ash are transported via the overland conveyors to the ash dump, where it is spread by an ash spreader, levelled and covered with topsoil and finally regressed. The maximum continuous rating of each boiler at the turbine stop valves is 577kg/s with superheated steam temperature and pressure of 540 degrees Celsius and 17,24MPa respectively.

The water usage at Kendal Power Station is minimal (0.1 litre per kilowatt-hour). The water comes from the Vaal and Usutu Water Schemes alternatively. The WTP produces potable and demineralised water, conducts water balancing and effluent management, chemistry control and monitoring of all process water. The CP plants, one at each unit, are used for the polishing of condensate water on the units while the CP Regeneration plant does the transfers and regeneration of the Unit CP resin and is located in the Water Treatment Plant.

The power station is a Zero Liquid Effluent Discharge Station and ISO 14001 compliant

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

1. Access limitations

Access and Security control shall be done according to the Eskom Access Control Policies.

Employees, Contractors, and visitors shall be subjected to induction training and substance abuse test when entering Eskom sites, or as and when required while on Eskom sites.

It may be required that prior to access being granted that person(s) complete the required training e.g. plant access training, employee training, occupational health and safety training or any other prescribed training.

The Principal Contractor shall subject its employees to complete Criminal clearance verifications with the South African Police Service (SAPS) Criminal Record Centre (CRC) or accredited supplier linked to SAPS AFIS system and provide proof to security delegated team before access can be granted.

Contractors are to submit proof of verification record(s) (Security clearance) from SAPS or accredited supplier linked to SAPS AFIS system not older than thirty (30) days, as part of Risk Management process to curb any threats against the Installation. It is compulsory for these documents to be submitted to Security for verification before access to site is granted. Only individuals with clear criminal records will be considered.

Contractors are required to submit the SAPS Clearance Certificate obtained by the employee along with a copy of his/her Identity Document or Passport to the site Security Manager.

The following are prohibited items and shall not be allowed on Eskom sites unless the necessary authorisation for possession has been obtained. - Firearms(excludes Eskom official firearms) issued to the South African Security Forces.

- Liquor/Alcohol
- Dangerous weapons
- Drugs
- Any other items that may be declared prohibited

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

To be determined as work proceeds.

3. Hidden and other services within the *site*

The Contractor May be required to relocate existing underground and other hidden services encountered.

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

Details of existing building is as described in the works information.

Annexure A: Fire Detection VDSS for CSB

Eskom			FIRE DETECTION SYSTEM INSTALLATION PROJECT				Title		Fire Detection VDSS for CSB				Unique Identifier		Revision		0	
							Document Type		Technical Documentation Exchange Requirements									
			(First Character of Revision No. in Document No.) →				BASELINE											
DOCUMENT SET	OBJECT CODE	DOCUMENT REF. NO.	COMPOSITE DOCUMENT	SINGLE DOCUMENTS	Engineering Documents (P1)	Concept Design Documents (P2)	FAT/SIT/SAT (P3)	Commissioning Documents (P4)	As Built Documents (P5)	LIVE Documents	Type of Document	Native / Original Software (SW) Format	ADDITIONAL INFORMATION ON DOCUMENT CONTENT				DATE OF LAST UPDATE	
FDS	FDS	FDS010		MASTER DOCUMENT LIST			Y			X	List	MS EXCEL						
PRE DETECTION SYSTEM GENERAL DOCUMENTS		FDS	FDS020	HAZARDOUS LOCATION CLASSIFICATION DOCUMENT							Narrative	MS WORD						
		FDS	FDS030	FIRE PROTECTION/DETECTION ASSESSMENT BASED ON ESKOM PROCEDURE						X	Narrative	MS WORD	CATEGORY CLASSIFICATION OF SYSTEM					
		FDS	FDS040	CONTINUOUS FDS SERVICE CONFIRMATION METHODOLOGY (INSTALLATION, COMMISSIONING, CHANGE OVER)	Y		X			X	Narrative	MS WORD	PLAN FOR THE INSTALLATION, COMMISSIONING AND CHANGE OVER METHODOLOGY OF THE NEW SYSTEM WHILE THE EXISTING SYSTEM IS STILL RUNNING.					
		FDS	FDS050	LOGBOOK AS PER SANS10139						X	X	Narrative	MS WORD / PDF / HARD COPY	LOGBOOK INCLUDING IMPAIRMENT REGISTER. LOGBOOK IS REQUIRED FROM THE TIME THE FDS IS LIVE. IF THERE IS AN EXISTING LOGBOOK THIS CAN BE USED TO COVER THE OLD AND NEW SYSTEMS. LOGBOOK TO BE LOCATED AT THE FIRST RESPONDER (ADJACENT TO THE MAIN FIRE CONTROL PANEL).				
		FDS	FDS060	BACKUP AND DISASTER RECOVERY PLAN			X			X	Narrative	MS WORD	DISASTER RECOVERY PLAN (DRP) IS A NARRATIVE STATING HOW THE FDS IS RECOVERED AFTER CATASTROPHIC FAILURE, INCLUDING A BACKUP PLAN. THE DRP COVERS THE ENTIRE SYSTEM INCLUDING SCADA (IF APPLICABLE) ALL THE WAY DOWN TO COMPONENT LEVEL.					
		FDS	FDS070	RECOMMENDED SPARES LIST						X	List	MS EXCEL						
		FDS	FDS080	ENGINEERING, OPERATING AND MAINTENANCE MANUALS			X			X	X	Narrative	MS WORD					
		FDS	FDS090	ENGINEERING, OPERATING AND MAINTENANCE TRAINING MANUALS			X			X	X	Narrative	MS WORD					
		FDS	FDS100	FUNCTIONAL SPECIFICATION OF THE FDS (THIS IS NOT A PRODUCT USER MANUAL or CATALOGUE)			X			X	X	Narrative	MS WORD	DOCUMENT WHICH EXPLAINS HOW THE ENTIRE FIRE DETECTION SYSTEM FUNCTIONS IN AS MUCH DETAIL AS POSSIBLE.				
		FDS	FDS110	FUNCTIONAL SPECIFICATION OF THIRD PARTY SYSTEM			X			X	X	Narrative	MS WORD	DOCUMENT WHICH EXPLAINS HOW THIRD PARTY INTERFACES FUNCTION IN AS MUCH DETAIL AS POSSIBLE. INCLUDE LIST SUMMARISING ALL THIRD PARTY INTERFACES.				
		FDS	FDS120	SYSTEM ARCHITECTURE		Y	X					Drawing	CAD	HIGH LEVEL DIAGRAM SHOWING THE ENTIRE SYSTEM INCLUDING 3RD PARTY INTERFACES				
		FDS	FDS130	LIST OF ABBREVIATIONS		E				X	X	List	MS WORD / MS EXCEL					
		FDS	FDS140	METHOD STATEMENT ON CONSIDERATIONS FOR REDUCTION OF FALSE ALARMS AS PER SANS 10139			X			X	X	Narrative	WORD					
		FDS	FDS150	ALARM LIST			X			X	X	List	Excel	FIRE ALARMS AND SYSTEM FAULT ALARMS				
		FDS	FDS160	ALARM RESPONSE PROCEDURE			X			X	X	Narrative	WORD	CONTRACTOR LIAISE WITH EMPLOYER REPRESENTATIVES DURING DEVELOPMENT OF THESE PROCEDURES. PROCEDURES DEVELOPED FOR EACH ALARM TYPE.				
		FDS	FDS170	SCALED FLOOR DIAGRAMS		E		X		X	X	Drawing	CAD	SHOWING POSITION OF MANUAL CALL POINTS WITH MAXIMUM TRAVEL DISTANCE TO THE NEAREST MANUAL CALL POINT, SPACING AND SITING OF AUTOMATIC FIRE DETECTORS, SITING AND RANGE OF FIRE ALARM AND SOUNDER DEVICES, THE POSITIONS OF ALL CONTROL, INDICATING AND POWER SUPPLY EQUIPMENT, THE POSITIONS OF ALL EQUIPMENT THAT MAY REQUIRE ROUTINE ATTENTION OR REPLACEMENT (E.G. SHORT CIRCUIT ISOLATORS, DETECTION ZONES, ALARM ZONES, LOOP CONNECTIONS)				
		FDS	FDS180	RECORD OF AGREED VARIATIONS FROM DESIGN SPECIFICATION		X		X			X	List	EXCEL	PROVIDED AS PART OF TENDER RETURNABLES				
	CIE	CE	CE010		PANEL LAYOUT DRAWINGS			X		X	X	Drawing	CAD	ALL PANELS				
CONTROL AND MONITORING EQUIPMENT	CE	CE020		FIRE PANEL NETWORK DIAGRAM			X		X	X	Drawing	CAD	DETAILED NETWORK TOPOLOGY DIAGRAM SHOWING IP ADDRESSES, PHYSICAL PORT ALLOCATION, TERMINAL NUMBERS, NETWORK MEDIA CONVERTERS ETC.					
FLD	FLD	FLD010		POINTS LIST			X		X	X	List	Excel	DETAILED LIST OF ALL SIGNALS AVAILABLE ON THE SYSTEM					
FED DOCUMENTS		FLD	FLD020	TYPES OF SENSORS, ELEMENTS AND EQUIPMENT			X		X	X	Narrative	PDF	DETAILED DATASHEET FOR EACH TYPE					
		FLD	FLD030	CERTIFICATES OF COMPLIANCE					X	X	Narrative	PDF	COC FOR INSTALLATIONS IN HAZARDOUS LOCATIONS ONLY.					
		FLD	FLD040	END OF PHASE SYSTEM DESIGN CERTIFICATE (DESIGN, INSTALLATION AND COMMISSIONING)			X		X	X	X	Narrative	WORD	IN ACCORDANCE WITH SECTION 11(2) OF ELECTRICAL INSTALLATION REGULATIONS IN OHLS ACT.				
		FLD	FLD050	DETECTOR LOOP DIAGRAM			X		X	X	X	Drawing	CAD	DRAWING SHOWING THE LOOPS WITH ALL DETECTORS CONNECTED TO THE FIRE PANEL.				
		FLD	FLD060	TERMINATION DRAWINGS			X		X	X	X	Drawing	CAD	DRAWING SHOWING DEVICE TERMINATIONS FOR ALL LOOPS.				
		FLD	FLD070	FIELD DEVICE CALIBRATION SHEETS (WHERE APPLICABLE)					X	X	X	Narrative	PDF					
PWE	PWE	PWE010		POWER SUPPLY METHODOLOGY			X		X	X	Narrative	WORD	PHILOSOPHY OF WHERE NORMAL POWER SUPPLY IS OBTAINED AND HOW BACKUP POWER WILL BE SUPPLIED.					
	PWE	PWE020		BATTERY STANDBY TIME CALCULATIONS			X			X	Calculation	EXCEL	STANDBY TIME AND ALARM TIME AS PER SANS 10139					
	PWE	PWE030	POWER & EARTHING DESIGN	ELECTROMAGNETIC COMPATIBILITY	Y		X			X	DATASHEET	PDF						
	PWE	PWE040		LIGHTNING / SURGE PROTECTION AND EARTHING METHODOLOGIES			X		X	X	Narrative	WORD	IN ACCORDANCE WITH SANS 10139					
	PWE	PWE050		LOAD SCHEDULES			X		X	X	List	EXCEL	(CONSUMERS PER UPS AND BATTERY CHARGERS)					
	PWE	PWE060		EARTHING DRAWINGS			X		X	X	X	Drawing	CAD					
TST	PWE	PWE070		POWER DISTRIBUTION DRAWINGS			X		X	X	Drawing	CAD						
	TST	TST010		REQUIREMENTS FOR PERIODIC TESTING OF THE SYSTEM						X	Narrative	MS WORD	TESTS TO BE CARRIED OUT IN THE FUTURE					
	TST	TST020		FAT PROCEDURE			X		X	X	Narrative	MS WORD						
	TST	TST030		FAT TEST REPORT			X		X	X	Narrative	MS WORD						
	TST	TST040		SAT PROCEDURE			X		X	X	Narrative	MS WORD						
	TST	TST050		SAT TEST REPORT			X		X	X	Narrative	MS WORD						
ACCEPTANCE TESTS	TST	TST060		SIT PROCEDURE			X		X	X	Narrative	MS WORD						
	TST	TST070		SIT TEST REPORT			X		X	X	Narrative	MS WORD						
	TST	TST080		COMMISSIONING PROCEDURE					X	X	Narrative	WORD	IN ACCORDANCE WITH SANS 10139 (DETAILED STEP BY STEP TESTING PROCEDURE WITH HOLD POINTS)					
	TST	TST090		COMMISSIONING TESTS REPORT					X	X	Narrative	WORD						
	TST	TST100		ACCEPTANCE CERTIFICATE							Narrative	PDF	ACCEPTANCE CERTIFICATE IS ONLY ISSUED TO THE CONTRACTOR BY THE EMPLOYER ONCE ALL AS-BUILT DOCUMENTATION HAS BEEN RECEIVED AND ACCEPTED					
	BSL	BSL	BSL010	DETAILED DESIGN FREEZE (P2)			P			R	R	Baseline Package		PACKAGE CONSISTS OF LINE ITEMS: FDS010, FDS040, FDS060, FDS080, FDS090, FDS100, FDS110, FDS120, FDS140, FDS150, FDS160, FDS170, FDS180, CE010, CE020, FLD010, FLD020, FLD040, FLD050, FLD060, SLD010, SLD020, SLD030, SLD040, PWE010, PWE020, PWE030, PWE040, PWE050, PWE060, PWE070, ENG010 AND ENG020				
BSL	BSL020	FAT/SIT/SAT (P3)		PACKAGE CONSISTS OF LINE ITEMS: FLD030, FLD040, FLD070, TST020, TST030, TST040, TST050, TST060, TST070			P			R	Baseline Package		PACKAGE CONSISTS OF LINE ITEMS: FLD030, FLD040, FLD070, TST020, TST030, TST040, TST050, TST060, TST070					
BSL	BSL030	COMMISSIONING COMPLETION DOCUMENTS (P4)		PACKAGE CONSISTS OF LINE ITEMS: FDS050, FDS080, FDS090, FDS100, FDS110, FDS120, FDS130, FDS140, FDS150, FDS160, FDS170, FDS180, CE010, CE020, FLD010, FLD020, FLD040, FLD050, FLD060, SCD010, SCD020, SCD030, SCD040, PWE010, PWE020, PWE030, PWE040, PWE050, PWE060, PWE070, TST010, TST020, TST030, TST040, TST050, TST060, TST070, TST080, TST090, ENG010 AND ENG020					P	R	Baseline Package		PACKAGE CONSISTS OF LINE ITEMS: FDS050, FDS080, FDS090, FDS100, FDS110, FDS120, FDS130, FDS140, FDS150, FDS160, FDS170, FDS180, CE010, CE020, FLD010, FLD020, FLD040, FLD050, FLD060, SCD010, SCD020, SCD030, SCD040, PWE010, PWE020, PWE030, PWE040, PWE050, PWE060, PWE070, TST010, TST020, TST030, TST040, TST050, TST060, TST070, TST080, TST090, ENG010 AND ENG020					
BSL	BSL040	AS BUILT DOCUMENTS (P5)		PACKAGE CONSISTS OF LINE ITEMS: FDS010, FDS030, FDS040, FDS050, FDS060, FDS070, FDS080, FDS090, FDS100, FDS110, FDS120, FDS130, FDS140, FDS150, FDS160, FDS170, FDS180, CE010, CE020, FLD010, FLD020, FLD030, FLD040, FLD050, FLD060, FLD070, SCD010, SCD020, SCD030, SCD040, PWE010, PWE020, PWE030, PWE040, PWE050, PWE060, PWE070, TST010, TST020, TST030, TST040, TST050, TST060, TST070, TST080, TST090, ENG010 AND ENG020						P	Baseline Package		PACKAGE CONSISTS OF LINE ITEMS: FDS010, FDS030, FDS040, FDS050, FDS060, FDS070, FDS080, FDS090, FDS100, FDS110, FDS120, FDS130, FDS140, FDS150, FDS160, FDS170, FDS180, CE010, CE020, FLD010, FLD020, FLD030, FLD040, FLD050, FLD060, FLD070, SCD010, SCD020, SCD030, SCD040, PWE010, PWE020, PWE030, PWE040, PWE050, PWE060, PWE070, TST010, TST020, TST030, TST040, TST050, TST060, TST070, TST080, TST090, ENG010 AND ENG020					
ENQ	ENQ	ENQ010	BATTERY LIMITS	LIMITS OF SUPPLY AND SERVICES			X			X	Drawing	EXCEL	DRAWING INDICATING BATTERY LIMITS					
INFORM	ENQ	ENQ020	PROCESS INFORMATION	SYSTEM DESCRIPTIONS AND PHILOSOPHIES			X			X	Narrative	WORD						

Annexure B: Fire Detection VDSS for LHD

Eskom			FIRE DETECTION SYSTEM INSTALLATION PROJECT		Title		Fire Detection VDSS for LHD			Unique Identifier					
					Document Type		Technical Documentation Exchange Requirements			Revision					
					BASELINE										
(First Character of Revision No. in Document No.) →					E	B	D	P							
DOCUMENT SET	OBJECT CODE	DOCUMENT REF NO.	COMPOSITE DOCUMENT	SINGLE DOCUMENTS	Equipment	Concept Design Documents (P1)	Detailed Design Documents (P2)	FAT/SIT/SAT (P3)	Commissioning Documents (P4)	As-Built Documents (P5)	LIVE Documents	Type of Document	Native / Original Software (SW) Format	ADDITIONAL INFORMATION ON DOCUMENT CONTENT	DATE OF LAST UPDATE
FDS	FDS	FDS010		MASTER DOCUMENT LIST			Y			X		List	MS EXCEL		
FIRE DETECTION SYSTEM GENERAL DOCUMENTS	FDS	FDS020		HAZARDOUS LOCATION CLASSIFICATION DOCUMENT								Narrative	MS WORD		
	FDS	FDS030		FIRE PROTECTION/DETECTION ASSESSMENT BASED ON ESKOM PROCEDURE						X		Narrative	MS WORD	CATEGORY CLASSIFICATION OF SYSTEM	
	FDS	FDS040		CONTINUOUS FDS SERVICE CONFIRMATION METHODOLOGY (INSTALLATION, COMMISSIONING, CHANGE OVER)	Y		X			X		Narrative	MS WORD	PLAN FOR THE INSTALLATION, COMMISSIONING AND CHANGE OVER METHODOLOGY OF THE NEW SYSTEM WHILE THE EXISTING SYSTEM IS STILL RUNNING.	
	FDS	FDS050		LOGBOOK AS PER SANS10139						X	X	Narrative	MS WORD / PDF / HARD COPY	LOGBOOK INCLUDING IMPAIRMENT REGISTER. LOGBOOK IS REQUIRED FROM THE TIME THE FDS IS LIVE. IF THERE IS AN EXISTING LOGBOOK THIS CAN BE USED TO COVER THE OLD AND NEW SYSTEMS. LOGBOOK TO BE LOCATED AT THE FIRST RESPONDER (ADJACENT TO THE MAIN FIRE CONTROL PANEL).	
	FDS	FDS060		BACKUP AND DISASTER RECOVERY PLAN			X			X		Narrative	MS WORD	DISASTER RECOVERY PLAN (DRP) IS A NARRATIVE STATING HOW THE FDS IS RECOVERED AFTER CATASTROPHIC FAILURE, INCLUDING A BACKUP PLAN, THE DRP COVERS THE ENTIRE SYSTEM INCLUDING SCADA (IF APPLICABLE) ALL THE WAY DOWN TO COMPONENT LEVEL.	
	FDS	FDS070		RECOMMENDED SPARES LIST						X		List	MS EXCEL		
	FDS	FDS080		ENGINEERING, OPERATING AND MAINTENANCE MANUALS			X		X	X		Narrative	MS WORD		
	FDS	FDS090		ENGINEERING, OPERATING AND MAINTENANCE TRAINING MANUALS			X		X	X		Narrative	MS WORD		
	FDS	FDS100		FUNCTIONAL SPECIFICATION OF THE FDS (THIS IS NOT A PRODUCT USER MANUAL or CATALOGUE)			X		X	X		Narrative	MS WORD	DOCUMENT WHICH EXPLAINS HOW THE ENTIRE FIRE DETECTION SYSTEM FUNCTIONS IN AS MUCH DETAIL AS POSSIBLE.	
	FDS	FDS110		FUNCTIONAL SPECIFICATION OF THIRD PARTY SYSTEMS			X		X	X		Narrative	MS WORD	DOCUMENT WHICH EXPLAINS HOW THIRD PARTY INTERFACES FUNCTION IN AS MUCH DETAIL AS POSSIBLE. INCLUDE LIST SUMMARISING ALL THIRD PARTY INTERFACES.	
	FDS	FDS120		SYSTEM ARCHITECTURE	Y		X			X		Drawing	CAD	HIGH LEVEL DIAGRAM SHOWING THE ENTIRE SYSTEM INCLUDING 3RD PARTY INTERFACES	
	FDS	FDS130		LIST OF ABBREVIATIONS	E				X	X	X	List	MS WORD / MS EXCEL		
	FDS	FDS140		METHOD STATEMENT ON CONSIDERATIONS FOR REDUCTION OF FALSE ALARMS AS PER SANS 10139			X		X	X		Narrative	WORD		
	FDS	FDS150		ALARM LIST			X		X	X		List	Excel	FIRE ALARMS AND SYSTEM FAULT ALARMS	
	FDS	FDS160		ALARM RESPONSE PROCEDURE			X		X	X	X	Narrative	WORD	CONTRACTOR LIAISE WITH EMPLOYER REPRESENTATIVES DURING DEVELOPMENT OF THESE PROCEDURES. PROCEDURES DEVELOPED FOR EACH ALARM TYPE.	
	FDS	FDS170		SCALED FLOOR DIAGRAMS	E		X		X	X	X	Drawing	CAD	SHOWING POSITION OF MANUAL CALL POINTS WITH MAXIMUM TRAVEL DISTANCE TO THE NEAREST MANUAL CALL POINT, SPACING AND SITING OF AUTOMATIC FIRE DETECTORS, SITING AND RANGE OF FIRE ALARM AND SOUNDER DEVICES, THE POSITIONS OF ALL CONTROL, INDICATING AND POWER SUPPLY EQUIPMENT, THE POSITIONS OF ALL EQUIPMENT THAT MAY REQUIRE ROUTINE ATTENTION OR REPLACEMENT (E.G. SHORT CIRCUIT ISOLATORS, DETECTION ZONES, ALARM ZONES, LOOP CONNECTIONS)	
	FDS	FDS180		RECORD OF AGREED VARIATIONS FROM DESIGN SPECIFICATION	X		X			X		List	EXCEL	PROVIDED AS PART OF TENDER RETURNABLES	
	CIE	CIE	CIE010		PANEL LAYOUT DRAWINGS			X	X	X		Drawing	CAD		ALL PANELS
CONTROL AND INDICATING EQUIPMENT	CIE	CIE020		FIRE PANEL NETWORK DIAGRAM			X	X	X		Drawing	CAD		DETAILED NETWORK TOPOLOGY DIAGRAM SHOWING IP ADDRESSES, PHYSICAL PORT ALLOCATION, TERMINAL NUMBERS, NETWORK MEDIA CONVERTERS ETC.	
	FLD	FLD010		POINTS LIST			X	X	X		List	Excel		DETAILED LIST OF ALL SIGNALS AVAILABLE ON THE SYSTEM	
FIELD DOCUMENTS	FLD	FLD020		TYPES OF SENSORS, ELEMENTS AND EQUIPMENT			X	X	X		Narrative	PDF		DETAILED DATASHEET FOR EACH TYPE	
	FLD	FLD030		CERTIFICATES OF COMPLIANCE				X	X	X	Narrative	PDF		COC FOR INSTALLATIONS IN HAZARDOUS LOCATIONS ONLY. IN ACCORDANCE WITH SECTION 11(2) OF ELECTRICAL INSTALLATION REGULATIONS 2018 ACT.	
	FLD	FLD040		END OF PHASE SYSTEM DESIGN CERTIFICATE (DESIGN, INSTALLATION AND COMMISSIONING)			X	X	X	X	Narrative	WORD		DEVIATIONS FROM SANS 10139 ARE IDENTIFIED AND CAPTURED.	
	FLD	FLD050		DETECTOR LOOP DIAGRAM			X	X	X	X	Drawing	CAD		DRAWING SHOWING THE LOOPS WITH ALL DETECTORS CONNECTED TO THE FIRE PANEL	
	FLD	FLD060		TERMINATION DRAWINGS			X	X	X	X	Drawing	CAD		DRAWING SHOWING DEVICE TERMINATIONS FOR ALL LOOPS.	
	FLD	FLD070		FIELD DEVICE CALIBRATION SHEETS (WHERE APPLICABLE)			X	X	X	X	Narrative	PDF		PHILOSOPHY OF WHERE NORMAL POWER SUPPLY IS OBTAINED AND HOW BACKUP POWER WILL BE SUPPLIED.	
POWER & EARTHING	PWE	PWE010		POWER SUPPLY METHODOLOGY			X	X	X		Narrative	WORD		PHILOSOPHY OF WHERE NORMAL POWER SUPPLY IS OBTAINED AND HOW BACKUP POWER WILL BE SUPPLIED.	
	PWE	PWE020		BATTERY STANDBY TIME CALCULATIONS							Calculation	EXCEL		STANDBY TIME AND ALARM TIME AS PER SANS 10139	
	PWE	PWE030	POWER & EARTHING DESIGN	ELECTROMAGNETIC COMPATIBILITY	Y		X	X	X	X	DATASHEET	PDF			
	PWE	PWE040		LIGHTNING / SURGE PROTECTION AND EARTHING METHODOLOGIES			X	X	X	X	Narrative	WORD		IN ACCORDANCE WITH SANS 10139	
	PWE	PWE050		LOAD SCHEDULES			X	X	X	X	List	EXCEL		(CONSUMERS PER UPS AND BATTERY CHARGERS)	
	PWE	PWE060		EARTHING DRAWINGS			X	X	X	X	Drawing	CAD			
ACCEPTANCE TESTS	TST	TST070		POWER DISTRIBUTION DRAWINGS			X	X	X	X	Drawing	CAD			
	TST	TST010		REQUIREMENTS FOR PERIODIC TESTING OF THE SYSTEM							Narrative	MS WORD		TESTS TO BE CARRIED OUT IN THE FUTURE	
	TST	TST020		FAT PROCEDURE			X	X	X	X	Narrative	MS WORD			
	TST	TST030		FAT TEST REPORT			X	X	X	X	Narrative	MS WORD			
	TST	TST040		SAT PROCEDURE			X	X	X	X	Narrative	MS WORD			
	TST	TST050		SAT TEST REPORT			X	X	X	X	Narrative	MS WORD			
	TST	TST060		SIT PROCEDURE			X	X	X	X	Narrative	MS WORD			
	TST	TST070		SIT TEST REPORT			X	X	X	X	Narrative	MS WORD			
	TST	TST080		COMMISSIONING PROCEDURE				X	X	X	Narrative	WORD		IN ACCORDANCE WITH SANS 10139 (DETAILED STEP BY STEP TESTING PROCEDURE WITH HOLD POINTS)	
	TST	TST090		COMMISSIONING TESTS REPORT				X	X	X	Narrative	WORD			
BSL	BSL	BSL010	DETAILED DESIGN FREEZE (P2)				P		R	R	Baseline Package			PACKAGE CONSISTS OF LINE ITEMS: FDS010, FDS040, FDS060, FDS080, FDS090, FDS100, FDS110, FDS120, FDS140, FDS150, FDS160, FDS170, FDS180, CIE010, CIE020, FLD010, FLD020, FLD030, FLD040, FLD050, FLD060, SLD010, SLD020, SLD030, PWE010, PWE020, PWE030, PWE040, PWE050, PWE060, PWE070, ENQ010 AND ENQ020	
	BSL	BSL020	FAT/SIT/SAT (P3)					P		R	Baseline Package			PACKAGE CONSISTS OF LINE ITEMS: FDS010, FDS040, FDS060, FDS080, FDS090, FDS100, FDS110, FDS120, FDS140, FDS150, FDS160, FDS170, FDS180, CIE010, CIE020, FLD010, FLD020, FLD030, FLD040, FLD050, FLD060, SLD010, SLD020, SLD030, PWE010, PWE020, PWE030, PWE040, PWE050, PWE060, PWE070, ENQ010 AND ENQ020	
	BSL	BSL030	COMMISSIONING COMPLETION DOCUMENTS (P4)						P	R	Baseline Package			PACKAGE CONSISTS OF LINE ITEMS: FDS010, FDS040, FDS060, FDS080, FDS090, FDS100, FDS110, FDS120, FDS140, FDS150, FDS160, FDS170, FDS180, CIE010, CIE020, FLD010, FLD020, FLD030, FLD040, FLD050, FLD060, SLD010, SLD020, SLD030, PWE010, PWE020, PWE030, PWE040, PWE050, PWE060, PWE070, ENQ010 AND ENQ020	
	BSL	BSL040	AS BUILT DOCUMENTS (P5)								P	Baseline Package			PACKAGE CONSISTS OF LINE ITEMS: FDS010, FDS040, FDS060, FDS080, FDS090, FDS100, FDS110, FDS120, FDS140, FDS150, FDS160, FDS170, FDS180, CIE010, CIE020, FLD010, FLD020, FLD030, FLD040, FLD050, FLD060, SLD010, SLD020, SLD030, PWE010, PWE020, PWE030, PWE040, PWE050, PWE060, PWE070, ENQ010 AND ENQ020
INPUT INFORMATION FOR CONTRACT	ENQ	ENQ010	BATTERY LIMITS				X		X	X	Drawing	EXCEL		DRAWING INDICATING BATTERY LIMITS	
	ENQ	ENQ020	PROCESS INFORMATION				X		X	X	Narrative	WORD			

Annexure C: Fire Detection VDSS for ASD

Eskom			FIRE DETECTION SYSTEM INSTALLATION PROJECT		Title		Fire Detection VDSS for ASD		Unique Identifier		Revision	DATE OF LAST UPDATE		
					Document Type		Technical Documentation Exchange Requirements							
(First Character of Revision No. in Document No.) →					BASELINE									
DOCUMENT SET	OBJECT CODE	DOCUMENT REF NO.	COMPOSITE DOCUMENT	SINGLE DOCUMENTS	Enquiry Documents (P1)	Concept Design Documents (P1)	Detailed Design Documents (P2)	FAT/SIT/SAT (P3)	Commissioning Documents (P4)	As-Built Documents (P5)	LIVE Documents	Type of Document	Native / Original Software (SW) Format	ADDITIONAL INFORMATION ON DOCUMENT CONTENT
FDS	FDS	FDS010	MASTER DOCUMENT LIST				Y		X		X	List	MS EXCEL	PLAN FOR THE INSTALLATION, COMMISSIONING AND CHANGE OVER METHODOLOGY OF THE NEW SYSTEM WHILE THE EXISTING SYSTEM IS STILL RUNNING.
	FDS	FDS040	CONTINUOUS FDS SERVICE CONFIRMATION METHODOLOGY (INSTALLATION, COMMISSIONING, CHANGE OVER)		Y		X		X			Narrative	MS WORD	LOGBOOK INCLUDING IMPAIRMENT REGISTER, LOGBOOK IS REQUIRED FROM THE TIME THE FDS IS LIVE. IF THERE IS AN EXISTING LOGBOOK THIS CAN BE USED TO COVER THE OLD AND NEW SYSTEMS. LOGBOOK TO BE LOCATED AT THE FIRST RESPONDER (ADJACENT TO THE MAIN FIRE CONTROL PANEL).
	FDS	FDS050	LOGBOOK AS PER SANS 10139						X	X		Narrative	MS WORD / PDF / HARD COPY	DISASTER RECOVERY PLAN (DRP) IS A NARRATIVE STATING HOW THE FDS IS RECOVERED AFTER CATASTROPHIC FAILURE, INCLUDING A BACKUP PLAN. THE DRP COVERS THE ENTIRE SYSTEM INCLUDING SCADA (IF APPLICABLE) ALL THE WAY DOWN TO COMPONENT LEVEL.
	FDS	FDS060	BACKUP AND DISASTER RECOVERY PLAN				X		X			Narrative	MS WORD	DOCUMENT WHICH EXPLAINS HOW THE ENTIRE FIRE DETECTION SYSTEM FUNCTIONS IN AS MUCH DETAIL AS POSSIBLE.
	FDS	FDS070	RECOMMENDED SPARES LIST							X		List	MS EXCEL	DOCUMENT WHICH EXPLAINS HOW THIRD PARTY INTERFACES FUNCTION IN AS MUCH DETAIL AS POSSIBLE. INCLUDE LIST SUMMARISING ALL THIRD PARTY INTERFACES.
	FDS	FDS080	ENGINEERING, OPERATING AND MAINTENANCE MANUALS				X		X	X		Narrative	MS WORD	
	FDS	FDS090	ENGINEERING, OPERATING AND MAINTENANCE TRAINING MANUALS				X		X	X		Narrative	MS WORD	
	FDS	FDS100	FUNCTIONAL SPECIFICATION OF THE FDS (THIS IS NOT A PRODUCT USER MANUAL or CATALOGUE)				X		X	X		Narrative	MS WORD	
	FDS	FDS110	FUNCTIONAL SPECIFICATION OF THIRD PARTY SYSTEMS				X		X	X		Narrative	MS WORD	
	FDS	FDS120	SYSTEM ARCHITECTURE		Y		X		X			Drawing	CAD	HIGH LEVEL DIAGRAM SHOWING THE ENTIRE SYSTEM INCLUDING 3RD PARTY INTERFACES.
	FDS	FDS130	LIST OF ABBREVIATIONS		E				X	X		List	MS WORD / MS EXCEL	
	FDS	FDS140	METHOD STATEMENT ON CONSIDERATIONS FOR REDUCTION OF FALSE ALARMS AS PER SANS 10139				X		X	X		Narrative	WORD	
	FDS	FDS150	ALARM LIST				X		X	X		List	Excel	FIRE ALARMS AND SYSTEM FAULT ALARMS
	FDS	FDS160	ALARM RESPONSE PROCEDURE				X		X	X		Narrative	WORD	CONTRACTOR LIAISES WITH EMPLOYER REPRESENTATIVES DURING DEVELOPMENT OF THESE PROCEDURES. PROCEDURES DEVELOPED FOR EACH ALARM TYPE.
	FDS	FDS170	SCALED FLOOR DIAGRAMS		E		X		X	X		Drawing	CAD	SHOWING POSITION OF MANUAL CALL POINTS WITH MAXIMUM TRAVEL DISTANCE TO THE NEAREST MANUAL CALL POINT, SPACING AND SITING OF AUTOMATIC FIRE DETECTORS, SITING AND RANGE OF FIRE ALARM AND SOUNDER DEVICES, THE POSITIONS OF ALL CONTROL, INDICATING AND POWER SUPPLY EQUIPMENT, THE POSITIONS OF ALL EQUIPMENT THAT MAY REQUIRE ROUTINE ATTENTION OR REPLACEMENT (E.G. SHORT CIRCUIT ISOLATORS, DETECTION ZONES, ALARM ZONES, LOOP CONNECTIONS)
	FDS	FDS180	RECORD OF AGREED VARIATIONS FROM DESIGN SPECIFICATION		X		X		X			List	EXCEL	PROVIDED AS PART OF TENDER RETURNABLES
CIE	CE	CE010	PANEL LAYOUT DRAWINGS				X		X	X		Drawing	CAD	ALL PANELS
CONTROL AND INDICATING EQUIPMENT	CE	CE020	FIRE PANEL NETWORK DIAGRAM				X		X	X		Drawing	CAD	DETAILED NETWORK TOPOLOGY DIAGRAM SHOWING IP ADDRESSES, PHYSICAL PORT ALLOCATION, TERMINAL NUMBERS, NETWORK MEDIA CONVERTERS ETC.
FLD	FLD	FLD010	POINTS LIST				X		X	X		List	Excel	DETAILED LIST OF ALL SIGNALS AVAILABLE ON THE SYSTEM
	FLD	FLD020	TYPES OF SENSORS, ELEMENTS AND EQUIPMENT				X		X	X		Narrative	PDF	DETAILED DATASHEET FOR EACH TYPE
	FLD	FLD030	CERTIFICATES OF COMPLIANCE						X	X		Narrative	PDF	COC FOR INSTALLATIONS IN HAZARDOUS LOCATIONS ONLY.
	FLD	FLD040	END OF PHASE SYSTEM DESIGN CERTIFICATE (DESIGN, INSTALLATION AND COMMISSIONING)				X	X	X	X		Narrative	WORD	IN ACCORDANCE WITH SECTION 11(2) OF ELECTRICAL INSTALLATION REGULATIONS IN OHS ACT.
	FLD	FLD050	DETECTOR LOOP DIAGRAM				X		X	X		Drawing	CAD	DEVIATIONS FROM SANS 10139 ARE IDENTIFIED AND CAPTURED.
	FLD	FLD060	TERMINATION DRAWINGS				X		X	X		Drawing	CAD	DRAWING SHOWING THE LOOPS WITH ALL DETECTORS CONNECTED TO THE FIRE PANEL.
	FLD	FLD070	FIELD DEVICE CALIBRATION SHEETS (WHERE APPLICABLE)				X		X	X		Narrative	PDF	DRAWING SHOWING DEVICE TERMINATIONS FOR ALL LOOPS.
PWE	PWE	PWE010	POWER SUPPLY METHODOLOGY				X		X			Narrative	WORD	PHILOSOPHY OF WHERE NORMAL POWER SUPPLY IS OBTAINED AND HOW BACKUP POWER WILL BE SUPPLIED.
	PWE	PWE020	BATTERY STANDBY TIME CALCULATIONS		X		X		X	X		Calculation	EXCEL	STANDBY TIME AND ALARM TIME AS PER SANS 10139
	PWE	PWE030	ELECTROMAGNETIC COMPATIBILITY		Y		X		X			DATASHEET	PDF	
	PWE	PWE040	LIGHTNING / SURGE PROTECTION AND EARTHING METHODOLOGIES				X		X	X		Narrative	WORD	IN ACCORDANCE WITH SANS 10139
	PWE	PWE050	LOAD SCHEDULES				X		X			List	EXCEL	(CONSUMERS PER UPS AND BATTERY CHARGERS)
	PWE	PWE060	EARTHING DRAWINGS				X		X	X		Drawing	CAD	
	PWE	PWE070	POWER DISTRIBUTION DRAWINGS				X		X	X		Drawing	CAD	
TST	TST	TST010	REQUIREMENTS FOR PERIODIC TESTING OF THE SYSTEM				X		X			Narrative	MS WORD	TESTS TO BE CARRIED OUT IN THE FUTURE
	TST	TST020	FAT PROCEDURE				X		X			Narrative	MS WORD	
	TST	TST030	FAT TEST REPORT				X		X			Narrative	MS WORD	
	TST	TST040	SAT PROCEDURE				X		X			Narrative	MS WORD	
	TST	TST050	SAT TEST REPORT				X		X			Narrative	MS WORD	
	TST	TST060	SIT PROCEDURE				X		X			Narrative	MS WORD	
	TST	TST070	SIT TEST REPORT				X		X			Narrative	MS WORD	
	TST	TST080	COMMISSIONING PROCEDURE				X		X	X		Narrative	WORD	IN ACCORDANCE WITH SANS 10139 (DETAILED STEP BY STEP TESTING PROCEDURE WITH HOLD POINTS)
	TST	TST090	COMMISSIONING TESTS REPORT				X		X			Narrative	WORD	
	TST	TST100	ACCEPTANCE CERTIFICATE							E		Narrative	PDF	ACCEPTANCE CERTIFICATE IS ONLY ISSUED TO THE CONTRACTOR BY THE EMPLOYER ONCE ALL AS-BUILT DOCUMENTATION HAS BEEN RECEIVED AND ACCEPTED
BSL	BSL	BSL010	DETAILED DESIGN FREEZE (P2)				P		R			Baseline Package		PACKAGE CONSISTS OF LINE ITEMS: FDS010, FDS040, FDS060, FDS080, FDS090, FDS100, FDS110, FDS120, FDS130, FDS140, FDS150, FDS160, FDS170, FDS180, CE010, CE020, FLD010, FLD020, FLD030, FLD040, FLD050, FLD060, SLD010, SLD020, SLD030, SLD040, PWE010, PWE020, PWE030, PWE040, PWE050, PWE060, PWE070, ENQ010 AND ENQ020
	BSL	BSL020	FAT/SIT/SAT (P3)						P		R	Baseline Package		PACKAGE CONSISTS OF LINE ITEMS: FLD030, FLD040, FLD050, FLD060, FLD070, TST020, TST030, TST040, TST050, TST060, TST070
	BSL	BSL030	COMMISSIONING COMPLETION DOCUMENTS (P4)							P	R	Baseline Package		PACKAGE CONSISTS OF LINE ITEMS: FDS050, FDS060, FDS090, FDS100, FDS110, FDS120, FDS130, FDS140, FDS150, FDS160, FDS170, CE010, CE020, FLD010, FLD020, FLD030, FLD040, FLD050, FLD060, SCD030, SCD040, SCD060, SCD070, TST080 AND TST090
	BSL	BSL040	AS BUILT DOCUMENTS (P5)								P	Baseline Package		PACKAGE CONSISTS OF LINE ITEMS: FDS010, FDS030, FDS040, FDS050, FDS060, FDS070, FDS080, FDS090, FDS100, FDS110, FDS120, FDS130, FDS140, FDS150, FDS160, FDS170, FDS180, CE010, CE020, FLD010, FLD020, FLD030, FLD040, FLD050, FLD060, FLD070, SCD010, SCD020, SCD030, SCD040, PWE010, PWE020, PWE030, PWE040, PWE050, PWE060, PWE070, TST010, TST020, TST030, TST040, TST050, TST060, TST070, TST080, TST090, ENQ010 AND ENQ020
ENQ	ENQ	ENQ010	BATTERY LIMITS				X		X			Drawing	EXCEL	DRAWING INDICATING BATTERY LIMITS
INPUT INFORMATION FOR CONTRACT	ENQ	ENQ020	PROCESS INFORMATION				X		X			Narrative	WORD	