



KENYA FORESTRY RESEARCH INSTITUTE

TENDER NO: KEFRI/ONT/009/2020- 2021

**TENDER NAME: SUPPLY, INSTALLATION,
CONFIGURATION, TESTING AND
COMMISSIONING OF KEFRI DATA CENTRE**

RELEASE DATE: Tuesday, 11th May, 2021

CLOSING DATE: Tuesday, 25th May 2021

TIME: 11:30 am

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**INVITATION TO TENDER (ITT)
SUPPLY, INSTALLATION, CONFIGURATION, TESTING AND
COMMISSIONING OF KEFRI DATA CENTRE**

1. KEFRI invites sealed tenders for Supply, Installation, Configuration, Testing and Commissioning of KEFRI Data Centre
2. Tendering will be conducted under open competitive method National open tender using a standardized tender document. Tendering is open to all qualified and interested Tenderers.
3. Qualified and interested tenderers may obtain further information and inspect the Tender Documents during office hours **8:00 am to 5:00 pm** on Mondays to Fridays inclusive except on public holidays at the address given below.
**Kenya Forestry Research Institute Headquarters,
Muguga, off Nairobi – Naivasha Road,
P.O Box 20412-00200, Nairobi**
4. A complete set of tender documents may be purchased or obtained by interested tenders upon payment of a non- refundable fees of **Ksh 1,000** in cash or Banker's Cheque and payable to **Kenya Forestry Research Institute Headquarters, Muguga, off Nairobi – Naivasha Road, P.O Box 20412-00200, Nairobi.** or Tender documents may be obtained electronically free of charge from; <https://www.kefri.org/components/tenders/tenders.html> or Public Procurement Information Portal (www.tenders.go.ke).Tender documents obtained electronically will **be free of charge.**
5. Tender documents may be viewed and downloaded for free from the website <https://www.kefri.org/components/tenders/tenders.html> or Public Procurement Information Portal (www.tenders.go.ke). Tenderers who download the tender document must forward their particulars immediately to tenders@kefri.org to facilitate any further clarification or addendum. The procedure to be followed by tenders in registering their particulars will be as **follows:**
Tenderers shall indicate; Tender reference No; Tender Name; official Email Address and the Telephone number and the complete name and Designation of the Person to be contacted. KEFRI will not be liable for failure of delivery of the Clarification/Addenda to the indicated Contacts, therefore the tenderers are reminded to re-confirm their contacts before they emailed.
6. All Tenders must be accompanied by a tender Security of **Kes. 200,000.00** or “Tender-Securing Declaration dully filled and signed by Authorized person.

7. Completed tenders must be delivered to the address below on or before Tuesday 25th May 2021. Electronic Tenders will not be permitted.
8. Tenders will be opened immediately after the deadline date and time specified above or any deadline date and time specified later. Tenders will be publicly opened in the presence of the Tenderers' designated representatives and anyone who chooses to attend at the address below - Late tenders will be rejected.
9. The addresses referred to above are:

A. Address for obtaining further information and for purchasing tender documents

Kenya Forestry Research Institute (KEFRI)
Supply Chain Management Office
Ag. Deputy Director-Supply Chain Management
Email: tenders@kefri.org
Tel: 0722157414 / 0724259781 / 0734251888

B. Address for Submission of Tenders.

Kenya Forestry Research Institute (KEFRI)
The Director,
P.O Box 20412-00200 City Square, Nairobi
Tender Box, situated outside Director's offices
N/B: Large tenders that cannot be dropped in the tender box shall be received and registered in the tender register on or before the closing time of 11:30am, Tuesday, 25th, May, 2021.

C. Address for Opening of Tenders.

Kenya Forestry Research Institute (KEFRI)
Auditorium Hall, immediately after the closing of the tender.
Designation: Ag. Deputy Director-Supply Chain Management
For: DIRECTOR-KEFRI

SECTION I -INSTRUCTIONS TO TENDERERS

A. General

1. Scope of Tender

1.1 In connection with the Invitation to Tender (ITT), specified in the Tender Data Sheet (TDS), the Procuring Entity, issues this Tendering document for the Design, Supply and Installation of Plant and equipment as specified in Section VII, Procuring Entity's Requirements.

2. Definitions

2.1 Throughout this Tender document:

- a) The term “in writing” means communicated in written form (e.g.by mail, e-mail, fax, including if specified **in the TDS**, distributed or received through the electronic-procurement system used by the Procuring Entity) with proof of receipt;
- b) if the context so requires, “singular” means “plural” and vice versa; and
- c) “Day” means calendar day, unless otherwise specified as “Business Day.” A Business Day is any day that is an official working day in Kenya. It excludes the Kenya's official public holidays.

3. Fraud and Corruption

3.1 The Procuring Entity requires compliance with the provisions of the Public Procurement and Asset Disposal Act, 2015, Section 62 “Declaration not to engage in corruption”. The tender submitted by a person shall include a declaration that the person shall not engage in any corrupt or fraudulent practice and a declaration that the person or his or her sub-contractors are not debarred from participating in public procurement proceedings.

3.2 The Procuring Entity requires compliance with the provisions of the Competition Act 2010, regarding collusive practices in contracting. Any tenderer found to have engaged in collusive conduct shall be disqualified and criminal and/or civil sanctions may be imposed. To this effect, Tenders shall be required to complete and sign the “Certificate of Independent Tender Determination” annexed to the Form of Tender.

3.3 Unfair Competitive Advantage-Fairness and transparency in the tender process require that the firms or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to this tender. To that end, the Procuring Entity shall indicate in the Data Sheet and make available to all the firms together with this tender document all information that would in that respect give such firm any unfair competitive advantage over competing firms.

3.4 Tenderers shall permit and shall cause their agents (where declared or not), subcontractors, sub consultants, service providers, suppliers, and their personnel, to permit the Procuring Entity to inspect all accounts, records and other documents relating to any initial selection process, prequalification process, tender submission, proposal submission, and contract performance (in the case of award), and to have

them audited by auditors appointed by the Procuring Entity.

4. Eligible Tenderers

4.1 A Tenderer may be a firm that is a private entity, a state-owned enterprise or institution subject to ITT 4.6, or any combination of such entities in the form of a joint venture (JV) under an existing agreement or with the intent to enter into such an agreement supported by a Form of intent. In the case of a joint venture, all members shall be jointly and severally liable for the execution of the entire Contract in accordance with the Contract terms. The JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the members of the JV during the Tendering process and, in the event the JV is awarded the Contract, during contract execution. The maximum number of JV members shall be specified in the TDS.

4.2 Public Officers of the Procuring Entity and their relatives (i.e. spouse, child, parent, brother or sister and a child, parent, brother or sister of a spouse) their business associates or agents and firms/organizations in which they have a substantial or controlling interest shall not be eligible to tender or be awarded a contract. Public Officers are also not allowed to participate in any procurement proceedings.

4.3 A Tenderer shall not have a conflict of interest. Any Tenderer found to have a conflict of interest shall be disqualified. A Tenderer may be considered to have a conflict of interest for the purpose of this Tendering process, if the Tenderer:

- a) Directly or indirectly controls, is controlled by or is under common control with another Tenderer; or
- b) Receives or has received any director indirect subsidy from another Tenderer; or
- c) Has the same legal representative as another Tenderer; or
- d) Has a relationship with another Tenderer, directly or through common third parties, that puts it in a position to influence the Tender of another Tenderer, or influence the decisions of the Procuring Entity regarding this Tendering process; or
- e) or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the Plant and Installation Services that are the subject of the Tender; or
- f) or any of its affiliates has been hired (or is proposed to be hired) by the Procuring Entity as Project Manager for the Contract implementation; or
- g) would be providing goods, works, or non-consulting services resulting from or directly related to consulting services for the preparation or implementation of the project specified in the TDS ITT 2.1 that it provided or were provided by any affiliate that directly or indirectly controls, is controlled by, or is under common control with that firm; or
- h) has a close business or family relationship with a professional staff of the Procuring Entity who:
 - (i) are directly or indirectly involved in the preparation of the Tendering

document or specifications of the Contract, and/or the Tender evaluation process of such Contract; or (ii) would be involved in the implementation or supervision of such contract unless the conflict stemming from such relationship has been resolved in a manner acceptable to the Procuring Entity.

- 4.4 A tenderer shall not be involved in corrupt, coercive, obstructive or fraudulent practice. A tenderer that is proven to have been involved in any of these practices shall be automatically disqualified and would not be awarded a contract
- 4.5 A firm that is a Tenderer (either individually or as a JV member) shall not participate as a Tenderer or as JV member in more than one Tender except for permitted alternative Tenders. Such participation shall result in the disqualification of all Tenders in which the firm is involved. However, this does not limit the participation of a Tenderer as subcontractor in another Tender or of a firm as a subcontractor in more than one Tender.
- 4.6 A Tenderer may have the nationality of any country, subject to the restrictions pursuant to ITT 4.9. A Tenderer shall be deemed to have the nationality of a country if the Tenderer is constituted, incorporated or registered in and operates in conformity with the provisions of the laws of that country, as evidenced by its articles of incorporation (or equivalent documents of constitution or association) and its registration documents, as the case may be. This criterion also shall apply to the determination of the nationality of proposed subcontractors or sub-consultants for any part of the Contract including related Services.
- 4.7 A Tenderer that has been debarred by the PPRA shall be ineligible to be prequalified for, initially selected for, tender for, propose for, financially or otherwise, during such period of time as the PPRA shall have determined. The list of debarred firms and individuals is available at PPRA Website www.ppra.go.ke.
- 4.8 Tenderers that are state-owned enterprises or institutions in Kenya may be eligible to compete and be awarded a Contract(s) only if they can establish that they (i) are legally and financially autonomous (ii) operate under commercial law, and (iii) are not under supervision of the Procuring Entity.
- 4.9 Firms and individuals may be ineligible if so indicated in Section V and (a) as a matter of law or official regulations, Kenya prohibits commercial relations with that country; or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, Kenya prohibits any import of goods or contracting of works or services from that country, or any payments to any country, person, or entity in that country. Where the procurement is implemented across jurisdictional boundaries, then exclusion of a firm or individual on the basis of ITT 4.8 (a) above by any country may be applied to that procurement across other countries involved.
- 4.10 Foreign tenderers are required to source at least forty (40%) percent of their contract inputs (in supplies, subcontracts and labor) from national suppliers and contractors. To this end, a foreign tenderer shall provide in its tender documentary evidence that this requirement is met. Foreign tenderers not meeting this criterion will be automatically disqualified. Information required to enable the Procuring Entity determine if this condition is met shall be provided in for this purpose is be provided in "SECTION III -

EVALUATION AND QUALIFICATION CRITERIA, Item 9”.

- 4.11 Pursuant to the eligibility requirements of ITT 4.10, a tender is considered a foreign tenderer, if it is registered in Kenya, has less than 51 percent ownership by nationals of Kenya and if it does not subcontract foreign contractors more than 10 percent of the contract price. JVs are considered as foreign tenderers if the individual member firms are registered in Kenya have less than 51 percent ownership by nationals of Kenya. The JV shall not subcontract to foreign firms more than 10 percent of the contract price.
- 4.12 The Competition Act 2010 requires that firms wishing to tender as Joint Venture undertakings which may prevent, distort or lessen competition in provision of services are prohibited unless they are exempt in accordance with the provisions of Section 25 of the Act. JVs will be required to seek for exemption from the Competition Authority of Kenya. Exemption shall not be a condition for tender, but it shall be a condition of contract award and signature. A JV tenderer shall be given opportunity to seek such exemption as a condition of award and signature of contract. Application for exemption from the Competition Authority of Kenya may be accessed from the website www.cak.go.ke
- 4.13 A Kenyan tenderer shall provide evidence of having fulfilled his/her tax obligations by producing a valid tax clearance certificate or tax exemption certificate issued by the Kenya Revenue Authority.

5. Eligible goods, Plant and equipment for Installation Services

- 5.1 The Plant and equipment for Installation Services to be supplied under the Contract may have their origin in any eligible country.
- 5.2 For purposes of ITT 5.1 above, “origin” means the place where the plant, or component parts thereof are mined, grown, produced or manufactured, and from which the services are provided. Plant components are produced when, through manufacturing, processing, or substantial or major assembling of components, a commercially recognized product results that is substantially in its basic characteristics or in purpose or utility from its components.
- 5.3 Any goods, works and production processes with characteristics that have been declared by the relevant national environmental protection agency or by other competent authority as harmful to human beings and to the environment shall not be eligible for procurement.

B. Contents of Tendering Document

6. Sections of Tendering Document

- 6.1 The Tendering document consists of Parts 1, 2, and 3, which include all the sections indicated below, and should be read in conjunction with any Addenda issued in accordance with ITT 10.

PART 1 - Tendering Procedures

- xi) Section I- Instructions to Tenderers (ITT)
- xii) Section II-Tender Data Sheet (TDS)
- xiii) Section III- Evaluation and Qualification Criteria
- xiv) Section IV-Tendering Forms
- xv) Section V- Eligible Countries
- xvi) Section VI- Fraud and Corruption

PART 2 - Procuring Entity's Requirements

- xvii) Section VII-Procuring Entity's Requirements

PART 3 - Conditions of Contract and Contract Forms

- xviii)Section VIII- General Conditions of Contract (GCC)
- xix) Section IX- Special Conditions of Contract (SCC)
- xx) Section X- Contract Forms

6.2 The Invitation to Tender Notice issued by the Procuring Entity is not part of the Tendering document.

6.3 Unless obtained directly from the Procuring Entity, the Procuring Entity is not responsible for the completeness of the document, responses to requests for clarification, the Minutes of the pre-Tender meeting (if any), or Addenda to the Tendering document in accordance with ITT 10. In case of any contradiction, documents obtained directly from the Procuring Entity shall prevail.

6.4 The Tenderer is expected to examine all instructions, forms, terms, and specifications in the Tendering document and to furnish with its Tender all information or documentation as is required by the Tendering document.

7. Site Visit

7.1 The Tenderer, at the Tenderer's own responsibility and risk, is encouraged to visit and examine the Site of the Required Services and its surroundings and obtain all information that may be necessary for preparing the Tender and entering into a contract for the Services. The costs of visiting the Site shall be at the Tenderer's own expense.

8. Pre-Tender Meeting and a pre-arranged pretender visit of the site of the works

8.1 The Procuring Entity shall specify in the TDS if a pre-tender conference will be held, when and where. The Procuring Entity shall also specify in the TDS if a pre-arranged pretender visit of the site of the works will be held and when. The Tenderer's designated representative is invited to attend a pre- arranged pretender visit of the site of the works. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.

- 8.2 The Tenderer is requested to submit any questions in writing, to reach the Procuring Entity not later than the period specified in the TDS before the meeting.
- 8.3 Minutes of the pre-Tender meeting and the pre-arranged pretender visit of the site of the works, if applicable, including the text of the questions asked by Tenderers and the responses given, together with any responses prepared after the meeting, will be transmitted promptly to all Tenderers who have acquired the Tender Documents in accordance with ITT6.3. Minutes shall not identify the source of the questions asked.
- 8.4 The Procuring Entity shall also promptly publish anonymized (no names) Minutes of the pre-Tender meeting and the pre-arranged pretender visit of the site of the works at the webpage identified in the TDS. Any modification to the Tender Documents that may become necessary as a result of the pre- Tender meeting shall be made by the Procuring Entity exclusively through the issue of an Addendum pursuant to ITT10 and not through the minutes of the pre-Tender meeting. Nonattendance at the pre- Tender meeting will not be a cause for disqualification of a Tenderer.

9. Clarification of Tender Documents

- 9.1 A Tenderer requiring any clarification of the Tender Document shall contact the Procuring Entity in writing at the Procuring Entity's address specified in the TDS or raise its enquiries during the pre- Tender meeting and the pre-arranged pretender visit of the site of the works if provided for in accordance with ITT8.4. The Procuring Entity will respond in writing to any request for clarification, provided that such request is received no later than the period specified in the TDS prior to the deadline for submission of tenders. The Procuring Entity shall forward copies of its response to all tenderers who have acquired the Tender Documents in accordance with ITT6.3, including a description of the inquiry but without identifying its source. If so specified in the **TDS**, the Procuring Entity shall also promptly publish its response at the webpage identified in the **TDS**. Should the clarification result in changes to the essential elements of the Tender Documents, the Procuring Entity shall amend the Tender Documents appropriately following the procedure under ITT10.

10. Amendment of Tendering Document

- 10.1 At any time prior to the deadline for submission of Tenders, the Procuring Entity may amend the Tendering document by issuing addenda.
- 10.2 Any addendum issued shall be part of the tendering document and shall be communicated in writing to all who have obtained the tendering document from the Procuring Entity in accordance with ITT6.3. The Procuring Entity shall also promptly publish the addendum on the Procuring Entity's webpage in accordance with ITT8.1.
- 10.3 To give prospective Tenderers reasonable time in which to take an addendum into account in preparing their Tenders, the Procuring Entity shall extend, as necessary, the deadline for submission of Tenders, in accordance with ITT24.2 below.

C. Preparation of Tenders

11. Cost of Tendering

11.1 The Tenderer shall bear all costs associated with the preparation and submission of its Tender, and the Procuring Entity shall not be responsible or liable for those costs, regardless of the conductor outcome of the Tendering process.

12. Language of Tender

12.1 The Tender, as well as all correspondence and documents relating to the Tender exchanged by the Tenderer and the Procuring Entity, shall be written in the English language. Supporting documents and printed literature that are part of the Tender may be in another language provided they are accompanied by an accurate translation of the relevant passages in the English Language, in which case, for purposes of interpretation of the Tender, such translation shall govern.

13. Documents Comprising the Tender

13.1 The Tender shall comprise the following:

- a) **Form of Tender** prepared in accordance with ITT 14.1;
- b) **Price Schedules** completed in accordance with ITT 14 and ITT 19;
- c) **Tender Security or Tender Securing Declaration**, in accordance with ITT 22;
- d) **Alternative Tender**, if permissible, in accordance with ITT 15;
- e) **Authorization**: written confirmation authorizing the signatory of the Tender to commit the Tenderer, in accordance with ITT 23.3;
- f) **Eligibility of Plant and Installation Services**: documentary evidence established in accordance with ITT 16.1 that the Plant and Installation Services offered by the Tenderer in its Tender or in any alternative Tender, if permitted, are eligible;
- g) **Tenderer's Eligibility and Qualifications**: documentary evidence in accordance with ITT 17.1 establishing the Tenderer's eligibility and qualifications to perform the Contract if its Tender is accepted;
- h) **Conformity**: documentary evidence in accordance to ITT18 that the Plant and Installation Services offered by the Tenderer conform to the Tendering document;
- i) **Subcontractors**: list of subcontractors in accordance with ITT18.2; and
- j) Any other document required **in the TDS**.

13.1 In addition to the requirements under ITT 13.1, Tenders submitted by a JV shall include a copy of the Joint Venture Agreement entered in to by all members. Alternatively, a Form of intent to execute a Joint Venture Agreement in the event of a successful Tender shall be signed by all members and submitted with the Tender, together with a copy of the proposed Agreement. The Tenderer shall serialize pages of all tender documents submitted.

13.2 The Tenderer shall furnish in the Form of Tender information on commissions and

gratuities, if any, paid or to be paid to agents or any other party relating to this Tender

14. Form of Tender and Price Schedules

14.1 The Form of Tender and Price Schedules shall be prepared, using the relevant forms furnished in Section IV, Tendering Forms. The forms must be completed as instructed in each form without any alterations to the text, and no substitutes shall be accepted except as provided under ITT 21.3. All blank spaces shall be filled in with the information requested.

15. Alternative Tenders

15.1 Unless otherwise specified in the TDS, alternative Tenders shall not be considered.

15.2 When alternatives to the Time Schedule are explicitly invited, a statement to that effect will be included in the TDS, and the method of evaluating different time schedules will be described in Section III, Evaluation and Qualification Criteria.

15.3 Except as provided under ITT 15.4 below, Tenderers wishing to offer technical alternatives to the Procuring Entity's requirements as described in the Tendering document must also provide: (i) a price at which they are prepared to offer a Plant meeting the Procuring Entity's requirements; and (ii) all information necessary for a complete evaluation of the alternatives by the Procuring Entity, including drawings, design calculations, technical specifications, breakdown of prices, and proposed installation methodology and other relevant details. Only the technical alternatives, if any, of the Tenderer with the Best Evaluated Tender conforming to the basic technical requirements shall be considered by the Procuring Entity.

15.4 When Tenderers are invited in the TDS to submit alternative technical solutions for specified parts of the facilities, such parts will be identified in the TDS, as will the method for their evaluation, and described in Section VII, Procuring Entity's Requirements.

16. Documents Establishing the Eligibility of the Plant and Installation Services

16.1 To establish the eligibility of the Plant and Installation Services in accordance with ITT 5, Tenderers shall complete the country of origin declarations in the Price Schedule Forms, included in Section IV, Tendering Forms.

17. Documents Establishing the Eligibility and Qualifications of the Tenderer

17.1 To establish its eligibility and qualifications to perform the Contract in accordance with Section III, Evaluation and Qualification Criteria, the Tenderer shall provide the information requested in the corresponding information sheets included in Section IV, Tendering Forms.

17.2 Tenderers shall be asked to provide, as part of the data for qualification, such information, including details of ownership, as shall be required to determine whether, according to the classification established by the Procuring Entity a supplier or group of suppliers qualifies for a margin of preference. Further the information will enable

the Procuring Entity identify any actual or potential conflict of interest in relation to the procurement and/or contract management processes, or a possibility of collusion between tenderers, and thereby help to prevent any corrupt influence in relation to the procurement process or contract management.

17.3 The purpose of the information described in ITT 15.1 above overrides any claims to confidentiality which a tenderer may have. There can be no circumstances in which it would be justified for a tenderer to keep information relating to its ownership and control confidential where it is tendering to undertake public sector work and receive public sector funds. Thus, confidentiality will not be accepted by the Procuring Entity as a justification for a Tenderer's failure to disclose, or failure to provide required information on its ownership and control.

17.4 The Tenderer shall provide further documentary proof, information or authorizations that the Procuring Entity may request in relation to ownership and control which information on any changes to the information which was provided by the tenderer under ITT 15.1. The obligations to require this information shall continue for the duration of the procurement process and contract performance and after completion of the contract, if any change to the information previously provided may reveal a conflict of interest in relation to the award or management of the contract.

17.5 All information provided by the tenderer pursuant to these requirements must be complete, current and accurate as at the date of provision to the Procuring Entity. In submitting the information required pursuant to these requirements, the Tenderer shall warrant that the information submitted is complete, current and accurate as at the date of submission to the Procuring Entity.

17.6 If a tenderer fails to submit the information required by these requirements, its tenderer will be rejected. Similarly, if the Procuring Entity is unable, after taking reasonable steps, to verify to a reasonable degree the information submitted by a tenderer pursuant to these requirements, then the tender will be rejected.

17.7 If information submitted by a tenderer pursuant to these requirements, or obtained by the Procuring Entity (whether through its own enquiries, through notification by the public or otherwise), shows any conflict of interest which could materially and improperly benefit the tenderer in relation to the procurement or contract management process, then:

- i) if the procurement process is still ongoing, the tenderer will be disqualified from the procurement process,
- ii) if the contract has been awarded to that tenderer, the contract award will be set aside,
- iii) the tenderer will be referred to the relevant law enforcement authorities for investigation of whether the tenderer or any other persons have committed any criminal offence.

17.8 If a tenderer submits information pursuant to these requirements that is incomplete, inaccurate or out-of-date, or attempts to obstruct the verification process, then the consequences ITT 6.7 will ensue unless the tenderer can show to the reasonable

satisfaction of the Procuring Entity that any such act was not material, or was due to genuine error which was not attributable to the intentional act, negligence or recklessness of the tenderer.

18. Documents Establishing the Conformity of the Plant and Installation Services

18.1 The Tenderer shall furnish the information stipulated in Section IV, Tendering Forms in sufficient detail to demonstrate substantial responsiveness of the Tenderers' proposal to the work requirements and the completion time.

18.2 For major items of Plant and Installation Services as listed by the Procuring Entity in Section III, Evaluation and Qualification Criteria, which the Tenderer intends to purchase or subcontract, the Tenderer shall give details of the name and nationality of the proposed Subcontractors, including manufacturers, for each of those items. In addition, the Tenderer shall include in its Tender information establishing compliance with the requirements specified by the Procuring Entity for these items. Quoted rates and prices will be deemed to apply to whichever Subcontractor is appointed, and no adjustment of the rates and prices will be permitted.

18.3 The Tenderer shall be responsible for ensuring that any Subcontractor proposed complies with the requirements of ITT 4, and that any plant, or services to be provided by the Subcontractor comply with the requirements of ITT 5 and ITT 15.1.

19. Tender Prices and Discounts

19.1 Unless otherwise specified in the TDS, Tenderers shall quote for the entire Plant and Installation Services on a "single responsibility" basis. The total Tender price shall include all the Contractor's obligations mentioned in or to be reasonably inferred from the Tendering document in respect of the design, manufacture, including procurement and subcontracting (if any), delivery, construction, installation and completion of the Plant. This includes all requirements under the Contractor's responsibilities for testing, pre-commissioning and commissioning of the plant and, where so required by the Tendering document, the acquisition of all permits, approvals and licenses, etc.; the operation, maintenance and training services and such other items and services as specified in the Tendering document, all in accordance with the requirements of the General Conditions. Items against which no price is entered by the Tenderer will not be paid for by the Procuring Entity when executed and shall be deemed to be covered by the prices for other items.

19.2 Tenderers are required to quote the price for the commercial, contractual and technical obligations outlined in the Tendering document.

19.3 Tenderers shall give a breakdown of the prices in the manner and detail called for in the Price Schedules included in Section IV, Tendering Forms.

19.4 Depending on the scope of the Contract, the Price Schedules may comprise up to the six (6) schedules listed below. Separate numbered Schedules included in Section IV, Tendering Forms, from those numbered 1 to 4 below, shall be used for each of the elements of the Plant and Installation Services. The total amount from each Schedule corresponding to an element of the Plant and Installation Services shall be summarized in the schedule titled Grand Summary, (Schedule 5), giving the total Tender price (s)

to be entered in the Form of Tender. Tenderers shall note that the plant and equipment included in Schedule Nos. 1 and 2 below exclude materials used for civil, building and other construction works. All such materials shall be included and priced under Schedule No.4, Installation Services. The Schedules comprise:

Schedule No. 1: Plant (including Mandatory Spare Parts) Supplied from Abroad

Schedule No. 2: Plant (including Mandatory Spare Parts) Supplied from within Kenya

Schedule No. 3: Design Services

Schedule No. 4: Installation Services **Schedule No. 5:** Grand Summary (Schedule Nos.1 to 4) **Schedule No. 6:** Recommended Spare Parts

19.5 In the Schedules, Tenderers shall give the required details and a breakdown of their prices as follows:

- a) Plant to be supplied from a broad (Schedule No.1):
The price of the Plant shall be quoted on CIP-named place of destination basis as specified **in the TDS**, including all taxes payable in Kenya.
- b) Plant manufactured within Kenya (Schedule No.2):
 - i) The price of the plant shall be quoted on an EXW Incoterm basis (such as “ex-works,” “ex- factory,” “ex-warehouse” or “off-the-shelf,” as applicable);
 - ii) Sales tax and all other taxes payable in Kenya on the plant if the contract is awarded to the Tenderer; and
 - iii) The total price for the item.
- c) Design Services (Schedule No.3);
- d) Installation Services shall be quoted separately (Schedule No.4) and shall include rates or prices for local transportation to named place of final destination as specified **in the TDS**, insurance and other services incidental to delivery of the plant, all labor, contractor's equipment, temporary works, materials, consumables and all matters and things of whatsoever nature, including operations and maintenance services, the provision of operations and maintenance manuals, training, etc., where identified in the Tendering document, as necessary for the proper execution of the installation and other services, including all taxes, duties, levies and charges payable in Kenya as of twenty-eight (28) days prior to the deadline for submission of Tenders;
- e) Recommended spare parts shall be quoted separately (Schedule 6) as specified in either subparagraph (a) or (b) above in accordance with the origin of the spare parts.

19.6 The terms EXW, CIP, and other similar terms shall be governed by the rules prescribed in the current edition of Incoterms, published by the International Chamber of Commerce, as specified in the TDS.

19.7 The prices shall be either fixed or adjustable as specified in the TDS.

- 19.8 In the case of Fixed Price, prices quoted by the Tenderer shall be fixed during the Tenderer's performance of the contract and not subject to variation on any account. A Tender submitted with an adjustable price quotation will be treated as non-responsive and rejected.
- 19.9 In the case of Adjustable Price, prices quoted by the Tenderer shall be subject to adjustment during performance of the contract to reflect changes in the cost elements such as labor, material, transport and contractor's equipment in accordance with the procedures specified in the corresponding Appendix to the Contract Agreement. A Tender submitted with a fixed price quotation will not be rejected, but the price adjustment will be treated as zero. Tenderers are required to indicate the source of labor and material indices in the corresponding Form in Section IV, Tendering Forms.
- 19.10 If so indicated in ITT 1.1, Tenders are being invited for individual lots (contracts) or for any combination of lots (packages). Tenderers wishing to offer any price reduction (discount) for the award of more than one Contract shall specify in their Form of Tender the price reductions applicable to each package, or alternatively, to individual Contracts within the package, and the manner in which the price reductions will apply.
- 19.11 Tenderers wishing to offer any unconditional discount shall specify in their Form of Tender the offered discounts and the manner in which price discounts will apply.

20. Currencies of Tender and Payment

- 20.1 The currency(ies) of the Tender and the currency(ies) of payments shall be the same. The Tenderer shall quote in the currency of Kenya the portion of the Tender price that corresponds to expenditures incurred in the currency of Kenya, unless otherwise specified in the TDS.
- 20.2 The Tenderer may express the Tender price in any currency. If the Tenderer wishes to be paid in a combination of amounts in different currencies, it may quote its price accordingly but shall use no more than three foreign currencies in addition to the currency of Kenya.

21. Period of Validity of Tenders

- 21.1 Tenders shall remain valid for the Tender Validity period specified **in the TDS**. The Tender Validity period starts from the Tender submission deadline (as prescribed by the Procuring Entity in accordance with ITT 23.1). A Tender valid for a shorter period shall be rejected by the Procuring Entity as non-responsive.
- 21.2 In exceptional circumstances, prior to the expiration of the Tender validity period, the Procuring Entity may request Tenderers to extend the period of validity of their Tenders. The request and the responses shall be made in writing. If a Tender Security is requested in accordance with ITT 20, the Tenderer granting the request shall also extend the Tender Security for twenty-eight (28) days beyond the deadline of the extended validity period. A Tenderer may refuse the request without forfeiting its Tender Security. A Tenderer granting the request shall not be required or permitted to modify its Tender, except as provided in ITT 19.3.

- 21.3 If the award is delayed by a period exceeding fifty-six (56) days beyond the expiry of the initial Tender validity period, the Contract price shall be determined as follows:
- a) In the case of **fixed price** contracts, the Contract price shall be the Tender price adjusted by the factor or factors specified **in the TDS**;
 - b) In the case of **adjustable price** contracts, no adjustment shall be made; or
 - c) In any case, Tender evaluation shall be based on the Tender price without taking into consideration the applicable correction from those indicated above.

22. Tender Security

22.1 The Tenderer shall furnish as part of its Tender, either a Tender-Securing Declaration or a Tender Security as specified **in the TDS**, in original form and, in the case of a Tender Security, in the amount and currency specified **in the TDS**.

22.2 A Tender-Securing Declaration shall use the form included in Section IV Tendering Forms.

22.3 If a Tender Security is specified pursuant to ITT 20.1, the Tender security shall be a demand guarantee in any of the following forms at the Tenderer's option:

- a) cash;
- b) a bank guarantee;
- c) a guarantee by an insurance company registered and licensed by the Insurance Regulatory Authority listed by the Authority; or
- d) a guarantee issued by a financial institution approved and licensed by the Central Bank of Kenya,

22.4 If a Tender Security or a Tender-Securing Declaration is specified pursuant to ITT 20.1, any Tender not accompanied by a substantially responsive Tender Security or Tender-Securing Declaration shall be rejected by the Procuring Entity as non-responsive.

22.5 If a Tender Security is specified pursuant to ITT 20.1, the Tender Security of unsuccessful Tenderers shall be returned as promptly as possible upon the successful Tenderer's furnishing of the Performance Security pursuant to ITT 47.

22.6 The Tender Security of the successful Tenderer shall be returned as promptly as possible once the successful Tenderer has signed the Contract and furnished the required Performance Security.

22.7 The Tender Security may be forfeited or the Tender-Securing Declaration executed:

- a) If a Tenderer withdraws its Tender during the period of Tender validity specified by the Tenderer on the Form of Tender; or
- b) If the successful Tenderer fails to:
 - i) Sign the Contract in accordance with ITT 47; or
 - ii) Furnish a performance security in accordance with ITT 48.

22.8 Where the Tender-Securing Declaration is executed the Procuring Entity will

recommend to the PPRA to debar the Tenderer from participating in public procurement as provided in the law.

22.9 The Tender Security or the Tender-Securing Declaration of a JV shall be in the name of the JV that submits the Tender. If the JV has not been legally constituted into a legally enforceable JV at the time of Tendering, the Tender Security or the Tender Securing Declaration shall be in the names of all future members as named in the Form of intent referred to in ITT 4.1 and ITT 11.2.

23. Format and Signing of Tender

23.1 The Tenderer shall prepare one original of the documents comprising the Tender as described in ITT 11 and clearly mark it "Original." Alternative Tenders, if permitted in accordance with ITT 13, shall be clearly marked "Alternative". In addition, the Tenderer shall submit copies of the Tender, in the number specified in the TDS and clearly mark them "Copy." In the event of any discrepancy between the original and the copies, the original shall prevail.

23.2 Tenderers shall mark as "CONFIDENTIAL" information in their Tenders which is confidential to their business. This may include proprietary information, trade secrets or commercial or financially sensitive information.

23.3 The original and all copies of the Tender shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Tenderer. This authorization shall consist of a written confirmation as specified in the TDS and shall be attached to the Tender. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the Tender where entries or amendments have been made shall be signed or initialed by the person signing the Tender.

23.4 In the case that the Tenderer is a JV, the Tender shall be signed by an authorized representative of the JV on behalf of the JV, and so as to be legally binding on all the members as evidenced by a power of attorney signed by their legally authorized representatives.

23.5 Any interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Tender.

C. Submission and Opening of Tenders

24. Submission, Sealing and Marking of Tenders

24.1 The Tenderer shall deliver the Tender in a single, sealed envelope (one (1) envelope process). The Tenderer shall place the following separate, sealed envelopes:

Inner Envelops:

- a) In an envelope marked "**ORIGINAL**", all documents comprising the Tender, as described in ITT11; and
- b) In an envelope marked "**COPIES**", all required copies of the Tender; and
- c) If alternative Tenders are permitted in accordance with ITT 13, and if relevant:

- i) In an envelope marked “**ORIGINAL–ALTERNATIVE TENDER**” the alternative Tender; and
- ii) In the envelope marked “**COPIES – ALTERNATIVE TENDER**” all required copies of the alternative Tender.

The inner envelopes shall:

- a) Bear the name and address of the Tenderer;
- b) Be addressed to the Procuring Entity in accordance with ITT 23.1;
- c) Bear the specific identification of this Tendering process indicated in accordance with ITT 1.1; and
- d) Bear a warning not to open before the time and date for Tender opening.

The outer envelope (s) in which the inner envelopes are enclosed shall:

- a) Be addressed to the Procuring Entity in accordance with ITT 23.1;
- b) Bear the specific identification of this Tendering process indicated in accordance with ITT 1.1; and
- c) Bear a warning not to open before the time and date for Tender opening.

24.2 If all envelopes are not sealed and marked as required, the Procuring Entity will assume no responsibility for the misplacement or premature opening of the Tender. Tenders that are misplaced or opened prematurely will not be accepted.

25. Deadline for Submission of Tenders

25.1 Tenders must be received by the Procuring Entity at the address and no later than the date and time indicated in the TDS. When so specified in the TDS, Tenderers shall have the option of submitting their Tenders electronically. Tenderers submitting Tenders electronically shall follow the electronic Tender submission procedures specified in the TDS.

25.2 The Procuring Entity may, at its discretion, extend the deadline for the submission of Tenders by amending the Tendering document in accordance with ITT8, in which case all rights and obligations of the Procuring Entity and Tenderers previously subject to the deadline shall thereafter be subject to the deadline as extended.

26. Late Tenders

26.1 The Procuring Entity shall not consider any Tender that arrives after the deadline for submission of Tenders, in accordance with ITT 23. Any Tender received by the Procuring Entity after the deadline for submission of Tenders shall be declared late, rejected, and returned unopened to the Tenderer.

27. Withdrawal, Substitution, and Modification of Tenders

27.1 A Tenderer may withdraw, substitute, or modify its Tender after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITT 21.3, (except

that withdrawal notices do not require copies). The corresponding substitution or modification of the Tender must accompany the respective written notice. All notices must be:

- a) prepared and submitted in accordance with ITT 21 and ITT 22 (except that withdrawals notices do not require copies), and in addition, the respective envelopes shall be clearly marked “Withdrawal,” “Substitution,” “Modification”; and
- b) Received by the Procuring Entity prior to the deadline prescribed for submission of Tenders, in accordance with ITT 23.

27.2 Tenders requested to be withdrawn in accordance with ITT25.1 shall be returned unopened to the Tenderers.

27.3 No Tender may be withdrawn, substituted, or modified in the interval between the deadline for submission of Tenders and the expiration of the period of Tender validity specified by the Tenderer on the Form of Tender or any extension thereof.

28. Tender Opening

28.1 Except as in the cases specified in ITT24 and ITT25.2, the Procuring Entity shall publicly open and read out in accordance with ITT26.5 all Tenders received by the deadline at the date, time and place specified **in the TDS** in the presence of Tenderers' designated representatives and anyone who choose to attend. Any specific electronic Tender opening procedures required if electronic Tendering is permitted in accordance with ITT 23.1, shall be as specified **in the TDS**.

28.2 First, the written notice of withdrawal in the envelopes marked “Withdrawal” shall be opened and read out and the envelope with the corresponding Tender shall not be opened, but returned to the Tenderer. No Tender withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at Tender opening.

28.3 Next, envelopes marked “Substitution” shall be opened and read out and exchanged with the corresponding Tender being substituted, and the substituted Tender shall not be opened, but returned to the Tenderer. No Tender substitution shall be permitted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out at Tender opening.

28.4 Next, envelopes marked “Modification” shall be opened and read out with the corresponding Tender. No Tender modification shall be permitted unless the corresponding modification notice contains a valid authorization to request the modification and is read out at Tender opening.

28.5 Next, all remaining envelopes shall be opened one at a time, reading out: the name of the Tenderer and the Tender Price(s), including any discounts and alternative Tenders, and indicating whether there is a modification; the presence or absence of a Tender Security or Tender-Securing Declaration, if required; and any other details as the Procuring Entity may consider appropriate.

28.6 Only Tenders, alternative Tenders and discounts that are opened and read out at

Tender opening shall be considered further. The Form of Tender and the Price Schedules are to be initialed by representatives of the Procuring Entity attending Tender opening in the manner specified in the TDS.

- 28.7 KEFRI shall neither discuss the merits of any Tender nor reject any Tender (except for late Tenders, in accordance with ITT 24.1).
- 28.8 The Procuring Entity shall prepare a record of the Tender opening that shall include, as a minimum:
- a) The name of the Tenderer and whether there is a withdrawal, substitution, or modification;
 - b) The Tender Price, per lot if applicable, including any discounts;
 - c) Any alternative Tenders; and
 - d) The presence or absence of a Tender Security or a Tender-Securing Declaration.
 - e) Number of pages for each tender
- 28.9 The Tenderers' representatives who are present shall be requested to sign the record. The omission of a Tenderer's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Tenderers.

D. Evaluation and Comparison of Tenders

29. Confidentiality

- 29.1 Information relating to the evaluation of Tenders and recommendation of contract award, shall not be disclosed to Tenderers or any other persons not officially concerned with the Tendering process until information on Intention to Award the Contract is transmitted to all Tenderers in accordance with ITT 42.
- 29.2 Any effort by a Tenderer to influence the Procuring Entity in the evaluation of the Tenders or Contract award decisions may result in the rejection of its Tender.
- 29.3 Notwithstanding ITT 27.2, from the time of Tender opening to the time of Contract Award, if any Tenderer wishes to contact the Procuring Entity on any matter related to the Tendering process, it should do so in writing.

30. Clarification of Tenders

- 30.1 To assist in the examination, evaluation, and comparison of the Tenders, and qualification of the Tenderers, the Procuring Entity may, at its discretion, ask any Tenderer for a clarification of its Tender. Any clarification submitted by a Tenderer that is not in response to a request by the Procuring Entity shall not be considered. The Procuring Entity's request for clarification and the response shall be in writing. No change in the prices or substance of the Tender shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Procuring Entity in the evaluation of the Tenders, in accordance with ITT32.
- 30.2 If a Tenderer does not provide clarifications of its Tender by the date and time set in the Procuring Entity's request for clarification, its Tender may be rejected.

31. Deviations, Reservations, and Omissions

31.1 During the evaluation of Tenders, the following definitions apply:

- a) “Deviation” is a departure from the requirements specified in the Tendering document;
- b) “Reservation” is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Tendering document; and
- c) “Omission” is the failure to submit part or all of the information or documentation required in the Tendering document.

32. Determination of Responsiveness

32.1 The Procuring Entity's determination of a Tender's responsiveness is to be based on the contents of the Tender itself, as defined in ITT 11.

32.2 A substantially responsive Tender is one that meets the requirements of the Tendering document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that:

- a) If accepted, would:
 - i) Affect in any substantial way the scope, quality, or performance of the Plant and Installation Services specified in the Contract; or
 - ii) Limit in any substantial way, in consistent with the Tendering document, the Procuring Entity's rights or the Tenderer's obligations under the proposed Contract; or
- b) If rectified, would unfairly affect the competitive position of other Tenderers presenting substantially responsive Tenders.

32.3 The Procuring Entity shall examine the technical aspects of the Tender in particular, to confirm that all requirements of Section VII, Procuring Entity's Requirements have been met without any material deviation, reservation, or omission.

32.4 If a Tender is not substantially responsive to the requirements of the Tendering document, it shall be rejected by the Procuring Entity and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.

33. Nonmaterial Non-conformities

33.1 Provided that a Tender is substantially responsive, the Procuring Entity may waive any nonconformity in the Tender.

33.2 Provided that a Tender is substantially responsive, the Procuring Entity may request that the Tenderer submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial non-conformities in the Tender related to documentation requirements. Requesting information or documentation on such non-conformities shall not be related to any aspect of the price of the Tender. Failure of the Tenderer to comply with the request may result in the rejection of its Tender.

33.3 Provided that a Tender is substantially responsive, the Procuring Entity shall rectify quantifiable non material non-conformities related to the Tender Price. To this effect, the Tender Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component in the manner specified **in the TDS**.

34. Correction of Arithmetical Errors

34.1 Provided that the tender is substantially responsive, the Procuring Entity shall correct arithmetical errors on the following basis:

- i) If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Procuring Entity there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected;
- ii) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
- iii) If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.

34.2 Any error detected if considered a major deviation that affects the substance of the tender, shall lead to disqualification of the tender as non-responsive. The method of determining the error as a major deviation shall be specified in the TDS.

34.3 Corrected tender prices shall not be used in the evaluation of tenders, comparison of tender prices.

34.4 KEFRI shall calculate the difference between the corrected price and tender price and work out the percentage difference, which will be plus or minus tender price as the case may be; [i.e. (corrected tender price– tender price)/ tender price X100]. This percentage difference between corrected tender price and tender price may be used to determine if the error so detected is considered a major deviation that affects the substance of the tender.

34.5 On award of contract, all payment valuation certificates, variation orders on omissions and additions valued based on rates in the Bill of Quantities will be adjusted by such a percentage specified in ITT 31.4 to ensure contractor is not paid less or more relative to the contract price which would be the tender price.

35. Conversion to Single Currency

35.1 For evaluation and comparison purposes, the currency (ies) of the Tender shall be converted into a single currency as specified **in the TDS**.

36. Margin of Preference

36.1 A margin of preference may be allowed on locally manufactured goods (plant and

equipment) only when the contract is open to international tendering, where the tender is likely to attract foreign goods and where the contract exceeds the threshold specified in the Regulations.

36.2 A margin of preference shall not be allowed unless it is specified so in the TDS.

36.3 Contracts procured on basis of international tendering and competition shall not be subject to reservations exclusive/ specific groups under women, youth and persons living with disability.

36.4 Where it is intended to reserve a contract to a specific group of businesses (these groups are Small and Medium Enterprises, Women Enterprises, Youth Enterprises and Enterprises of persons living with disability, as the case may be), and who are appropriately registered as such by a competent authority, a procuring entity shall ensure that the invitation to tender specifically indicates that only businesses or firms belonging to the specified group are eligible to tender. Tender shall be reserved to only one group. If not so stated in the Tender documents, the invitation to tender will be open to all interested tenderers.

37. Evaluation of Tenders

37.1 KEFRI shall use the criteria and methodologies listed in this ITT and Section III, Evaluation and Qualification criteria. No other evaluation criteria or methodologies shall be permitted. By applying the criteria and methodologies the Procuring Entity shall determine the Best Evaluated Tender. This is the Tender of the Tenderer that meets the qualification criteria and that has been determined to be:

- a) Most responsive to the Tendering document; and
- b) The lowest evaluated cost.

37.2 **Technical Evaluation.** The Procuring Entity will carry out a detailed technical evaluation of the Tenders not previously rejected to determine whether the technical aspects are in compliance with the Tendering document. The Tender that does not meet minimum acceptable standards of completeness, consistency and detail, and the specified minimum (or maximum, as the case may be) requirements for specified functional guarantees, will be rejected for non-responsiveness. In order to reach its determination, the Procuring Entity will examine and compare the technical aspects of the Tenders on the basis of the information supplied by the Tenderers, taking into account the following:

- a) Overall completeness and compliance with the Procuring Entity's Requirements; conformity of the Plant and Installation Services offered with specified performance criteria, including conformity with the specified minimum (or maximum, as the case may be) requirement corresponding to each functional guarantee, as indicated in the Specification and in Section III, Evaluation and Qualification Criteria; suitability of the Plant and Installation Services offered in relation to the environmental and climatic conditions prevailing at the site; and quality, function and operation of any process control concept included in the Tender;
- b) type, quantity and long-term availability of mandatory and recommended spare parts and maintenance services; and

- c) Other relevant factors, if any, listed in Section III, Evaluation and Qualification Criteria.

37.3 Where alternative technical solutions have been allowed in accordance with ITT 13, and offered by the Tenderer, the Procuring Entity will make a similar evaluation of the alternatives. Where alternatives have not been allowed but have been offered, they shall be ignored.

37.4 **Economic Evaluation.** To evaluate a Tender, the Procuring Entity shall consider the following:

- a) the Tender price, excluding provisional sums and the provision, if any, for contingencies in the Price Schedules;
- b) price adjustment due to discounts offered in accordance with ITT 17.11;
- c) price adjustment due to quantifiable non material non-conformities in accordance with ITT 31.3;
- d) converting the amount resulting from applying (a) to (c) above, if relevant, to a single currency in accordance with ITT 33; and
- e) The evaluation factors specified **in the TDS** and in Section III, Evaluation and Qualification Criteria.

37.5 If price adjustment is allowed in accordance with ITT 17.7, the estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in Tender evaluation.

37.6 In the case of multiple contracts or lots, Tenderers are allowed to tender for one or more lots and the methodology to determine the lowest evaluated cost of the lot (contract) and for combinations, including any discounts offered in the Form of Tender, is specified in Section III, Evaluation and Qualification Criteria.

38. Comparison of Tenders

38.1 The Procuring Entity shall compare the evaluated costs of all substantially responsive Tenders established in accordance with ITT 35.4 to determine the Tender that has the lowest evaluated cost.

39. Abnormally Low Tenders and Abnormally High Tenders

39.1 An Abnormally Low Tender is one where the Tender price, in combination with other elements of the Tender, appears so low that it raises material concerns as to the capability of the Tenderer to perform the Contract for the offered Tender Price or that genuine competition between Tenderers is compromised.

39.2 In the event of identification of a potentially Abnormally Low Tender, the Procuring Entity shall seek written clarifications from the Tenderer, including detailed price analyses of its Tender price in correlation to the subject matter of the contract, scope, proposed methodology, schedule, allocation of risks and responsibilities and any other requirements of the Tendering document.

- 39.3 After evaluation of the price analyses, in the event that the Procuring Entity determines that the Tenderer has failed to demonstrate its capability to deliver the contract for the offered tender price, the Procuring Entity shall reject the Tender.
- 39.4 An abnormally high price is one where the tender price, in combination with other constituent elements of the Tender, appears unreasonably too high to the extent that the Procuring Entity is concerned that it (the Procuring Entity) may not be getting value for money or it may be paying too high a price for the contract compared with market prices or that genuine competition between Tenderers is compromised.
- 39.5 In case of an abnormally high tender price, the Procuring Entity shall make a survey of the market prices, check if the estimated cost of the contract is correct and review the Tender Documents to check if the specifications, scope of work and conditions of contract are contributory to the abnormally high tenders. The Procuring Entity may also seek written clarification from the tenderer on the reason for the high tender price. The Procuring Entity shall proceed as follows:
- iv) If the tender price is abnormally high based on wrong estimated cost of the contract, the Procuring Entity may accept or not accept the tender depending on the Procuring Entity's budget considerations.
 - v) If specifications, scope of work and/or conditions of contract are contributory to the abnormally high tender prices, the Procuring Entity shall reject all tenders and may retender for the contract based on revised estimates, specifications, scope of work and conditions of contract, as the case may be.
- 39.6 If the Procuring Entity determines that the Tender Price is abnormally too high because genuine competition between tenderers is compromised (*often due to collusion, corruption or other manipulations*), the Procuring Entity shall reject all Tenders and shall institute or cause competent Government Agencies to institute an investigation on the cause of the compromise, before retendering.

40. Unbalanced or Front Loaded Tenders

- 40.1 If the Tender that is evaluated as the lowest evaluated cost is, in the Procuring Entity's opinion, seriously unbalanced or front loaded the Procuring Entity may require the Tenderer to provide written clarifications. Clarifications may include detailed price analyses to demonstrate the consistency of the Tender prices with the scope of works, proposed methodology, schedule and any other requirements of the Tendering document.
- 40.2 After the evaluation of the information and detailed price analyses presented by the Tenderer, the Procuring Entity may:
- a) Accept the Tender; or
 - b) If appropriate, require that the total amount of the Performance Security be increased, at the expense of the Tenderer, to a level not exceeding twenty percent (10%) of the Contract Price; or
 - c) Reject the Tender.

41. Eligibility and Qualification of the Tenderer

- 41.1 The Procuring Entity shall determine to its satisfaction whether the Tenderer that is selected as having submitted the lowest evaluated cost and substantially responsive Tender is eligible and meets the qualifying criteria specified in Section III, Evaluation and Qualification Criteria.
- 41.2 The determination shall be based upon an examination of the documentary evidence of the Tenderer's qualifications submitted by the Tenderer, pursuant to ITT 15.1. The determination shall not take into consideration the qualifications of other firms such as the Tenderer's subsidiaries, parent entities, affiliates, subcontractors (other than Specialized Subcontractors if permitted in the Tendering document) or any other firm (s) different from the Tenderer.
- 41.3 An affirmative determination shall be a prerequisite for award of the Contract to the Tenderer. A negative determination shall result in disqualification of the Tender, in which event the Procuring Entity shall proceed to the Tenderer who offers a substantially responsive Tender with the next lowest evaluated cost to make a similar determination of that Tenderer's qualifications to perform satisfactorily.
- 41.4 The capabilities of the manufacturers and subcontractors proposed in its Tender to be used by the Tenderer with the Lowest Evaluated Tender for identified major items of supply or services will also be evaluated for acceptability in accordance with Section III, Evaluation and Qualification Criteria. Their participation should be confirmed with a Form of intent between the parties, as needed. Should a manufacturer or subcontractor be determined to be unacceptable, the Tender will not be rejected, but the Tenderer will be required to substitute an acceptable manufacturer or subcontractor without any change to the Tender price. Prior to signing the Contract,

The corresponding Appendix to the Contract Agreement shall be completed, listing the approved manufacturers or subcontractors for each item concerned.

42. Procuring Entity's right to Accept Any Tender and to Reject Any or All Tenders

- 42.1 The Procuring Entity reserves the right to accept or reject any Tender, and to annul the Tendering process and reject all Tenders at any time prior to Contract Award, without there by incurring any liability to Tenderers. In case of annulment, all Tenders submitted and specifically, Tender securities shall be promptly returned to the Tenderers.

E. Award of Contract

43. Award Criteria

- 43.3 Subject to ITT 40, the Procuring Entity shall award the Contract to the successful Tenderer. This is the Tenderer whose Tender has been determined to be the Lowest Evaluated Tender. This is the Tender of the Tenderer that meets the qualification criteria and whose Tender has been determined to be:
- a) Substantially responsive to the Tendering Document; and

- b) The lowest evaluated cost

44. Notice of Intention to Enter into a Contract/ Notification of Award

44.1 When a Standstill Period applies, it shall commence when the Procuring Entity has transmitted to each Tenderer the Notification of Intention to Award the Contract to the successful Tenderer. The Notification of Intention to Award shall contain, at a minimum, the following information:

- a) The name and address of the Tenderer submitting the successful Tender;
- b) The Contract price of the successful Tender;
- c) A statement of the reason (s) the Tender (of the unsuccessful Tenderer to whom the Form is addressed) was unsuccessful, unless the price information in c) above already reveals the reason;
- d) The expiry date of the Standstill Period; and
- e) Instructions on how to request a debriefing and/ or submit a complaint during the standstill period.

45. Standstill Period

45.1 The Contract shall not be signed earlier than the expiry of a Standstill Period of 14 days to allow any dissatisfied tender to launch a complaint. Where only one Tender is submitted, the Standstill Period shall not apply.

45.2 Where a Standstill Period applies, it shall commence when the Procuring Entity has transmitted to each Tenderer the Notification of Intention to enter in to a Contract with the successful Tenderer.

46. Debriefing by the Procuring Entity

46.1 On receipt of the Procuring Entity's Notification of Intention to Enter into a Contract referred to in ITT 43, an unsuccessful tenderer may make a written request to the Procuring Entity for a debriefing on specific issues or concerns regarding their tender. The Procuring Entity shall provide the debriefing within five days of receipt of the request.

46.2 Debriefings of unsuccessful Tenderers may be done in writing or verbally. The Tenderer shall bear its own costs of attending such a debriefing meeting.

47. Letter of Award

47.1 Prior to the expiry of the Tender Validity Period and upon expiry of the Standstill Period specified in ITT 43.1, upon addressing a complaint that has been filed within the Standstill Period, the Procuring Entity shall transmit the Letter of Award to the successful Tenderer. The letter of award shall request the successful tenderer to furnish the Performance Security within 21 days of the date of the letter.

48. Signing of Contract

48.1 Upon the expiry of the fourteen days of the Notification of Intention to enter into

contract and upon the parties meeting their respective statutory requirements, the Procuring Entity shall send the successful Tenderer the Contract Agreement.

48.2 Within fourteen (14) days of receipt of the Contract Agreement, the successful Tenderer shall sign, date, and return it to the Procuring Entity.

48.3 The written contract shall be entered into within the period specified in the notification of award and before expiry of the tender validity period

48.4 Notwithstanding ITT 46.2 above, in case signing of the Contract Agreement is prevented by any export restrictions attributable to the Procuring Entity, to the country of the Procuring Entity, or to the use of the Plant and Installation Services to be supplied, where such export restrictions arise from trade regulations from a country supplying those Plant and Installation Services, the Tenderer shall not be bound by its Tender, always provided, however, that the Tenderer can demonstrate to the satisfaction of the Procuring Entity that signing of the Contact Agreement has not been prevented by any lack of diligence on the part of the Tenderer in completing any formalities, including applying for permits, authorizations and licenses necessary for the export of the Plant and Installation Services under the terms of the Contract.

49. Performance Security

49.1 Within twenty-one (21) days of the receipt of the Form of Acceptance from the Procuring Entity, the successful Tenderer shall furnish the Performance Security in accordance with the General Conditions GCC 13.3, subject to ITT 38, using for that purpose the Performance Security Form included in Section X, Contract Forms, or another form acceptable to the Procuring Entity. If the Performance Security furnished by the successful Tenderer is in the form of a bond, it shall be issued by a bonding or insurance company that has been determined by the successful Tenderer to be acceptable to the Procuring Entity. A foreign institution providing a bond shall have a correspondent financial institution located in Kenya, unless the Procuring Entity has agreed in writing that a correspondent financial institution is not required.

49.2 Failure of the successful Tenderer to submit the above-mentioned Performance Security or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the Tender Security. In that event the Procuring Entity may award the Contract to the Tenderer offering the next Best Evaluated Tender.

50. Publication of Procurement Contract

50.1 Within fourteen days after signing the contract, the Procuring Entity shall publish the awarded contract at its notice boards and websites; and on the Website of the Authority. At the minimum, the notice shall contain the following information:

- a) Name and address of the Procuring Entity;
- b) name and reference number of the contract being awarded, a summary of its scope and the selection method used;
- c) The name of the successful Tenderer, the final total contract price, the contract duration.
- d) Dates of signature, commencement and completion of contract;
- e) Names of all Tenderers that submitted Tenders, and their Tender prices as read out at Tender opening.

51. Appointment of Adjudicator

51.1 The Procuring Entity proposes the person named **in the TDS** to be appointed as Adjudicator under the Contract, at the hourly fee specified **in the TDS**, plus reimbursable expenses. If the Tenderer disagrees with this proposal, the Tenderer should so state in his Tender. If, in the Letter of Acceptance, the Procuring Entity does not agree on the appointment of the Adjudicator, the Procuring Entity will request the Appointing Authority designated in the Special Conditions of Contract (SCC) pursuant to Clause 23.1 of the General Conditions of Contract (GCC), to appoint the Adjudicator.

52. Procurement Related Complaint

51.2 The procedures for making a Procurement-related Complaint are as specified in the **TDS**.

SECTION II - TENDER DATA SHEET

The following specific data for the Facilities to be procured shall complement, supplement, or amend the provisions in the Instructions to Tenderers (ITT). Whenever there is a conflict, the provisions here in shall prevail over those in ITT.

Table 1: Tender Data Sheet

ITT Reference	A. General
ITT 1.1	Tender No: KEFRI/ONT/OO8/2020-2021 Procuring Entity: KENYA FORESTRY RESEARCH INSTITUTE Tender Name: Supply, Installation, Configuration, Testing and Commissioning of KEFRI Data Centre The tender to be quoted as one Lot
ITT1.2(a)	<i>No Electronic</i>
ITT 2.1	Project Name: Supply, Installation, Configuration, Testing and Commissioning of KEFRI Data Centre
ITT4.1	Maximum number of members in the JV shall be 4
B Tendering Document	
ITT8.1	Pre tender Conference will be held on: 19 th May 2021 at 9:00am Kenya Forestry Research Institute, P.O Box 20412-00200 Tel: 0722157414/0724259781/0734251888 City Square, Nairobi
ITT8.2	Request for clarification should be received by the Procuring Entity no later than Five (5) days to closure.
ITT8.4	Minutes of the pre tender meeting will published at https://www.kefri.org/components/tenders/tenders.html
ITT 17.5	The project site will be Kenya Forestry Research Institute
ITT 17.6	The incoterm edition is not applicable
ITT 17.7	The prices quoted by the tenderer shall not be subject to adjustment
ITT 18.3	The tenderer is required to quote in Kenya Currency the portion of tender price that corresponds to the expenditure incurred in that currency
ITT19.1	The tender validity period shall be 150 days
ITT 19.3	There shall be no adjustments to the tender price
ITT 20.1	The tender security shall be of Ksh200.000 In addition to the topics described in ITT Clause 18.2 (a),the preliminary Project Plan must address the following topics: <i>[modify as appropriate]</i> : <i>i. Project Organization and Management Sub-Plan including management authorities, responsibilities, and contacts ,as well as task, time and resource bound schedule (in GANTT format);</i> <i>ii. Implementation Sub-Plan</i> <i>iii. Training Sub-Plan</i>

ITT Reference	A. General
	<p><i>iv. Testing and Quality Assurance Sub-Plan</i></p> <p><i>v. Warranty Defect Repair and Technical Support Service Sub-Plan</i></p>
ITT21.1	Tenderers to submit one original tender.
D. SUBMISSION AND OPENING	
ITT 23.1	<p>For Submission purposes only: The Director, Kenya Forestry Research Institute, P.O Box 20412-00200 Tel: 0722157414/0724259781/0734251888 City Square, Nairobi The Tender Closing Date shall be on Tuesday ,25th May, 2021 at 11:30am Tenderers shall not have an option of submitting tenders electronically</p>
ITT 26.1	<p>The tenders shall be opened at the Auditorium Hall Kenya Forestry Research Institute, P.O Box 20412-00200 Tel: 0722157414/0724259781/0734251888 City Square, Nairobi Date and Time: Tuesday ,25th May, 2021 at 11:30am</p> <p>There will be No. Electronic opening of tenders</p>
ITT 26.6	The form of tender and the price schedule shall be initialed by KEFRI opening committee
E EVALUATION AND COMPARISON OF TENDERS	
ITT 32.2	N/A
ITT 31.3	N/A
ITT 35.4 (f)	N/A
ITT 35.6	ONE LOT
ITT 45.1 standstill period	The standstill period is 14 days
ITT 49	N/A
ITT 50.1	<p>If a tenderer wishes to make a procurement related complaint, the tenderer should submit its complaint following the below procedure, in writing to:</p> <p>The Director, Kenya Forestry Research Institute, P.O Box 20412-00200 Tel: 0722157414/0724259781/0734251888 City Square, Nairobi director@kefri.org</p>

SECTION III - EVALUATION AND QUALIFICATION CRITERIA

1. General Provision

1.2 Wherever a Tenderer is required to state a monetary amount, Tenderers should indicate the Kenya Shilling equivalent using the rate of exchange determined as follows:

- a. For construction turn over or financial data required for each year -Exchange rate prevailing on the last day of the respective calendar year (in which the amounts for that year is to be converted) was originally established.
- b. Value of single contract -Exchange rate prevailing on the date of the contract signature.
- c. Exchange rates shall be taken from the publicly available source identified in the ITT 33.1. Any error in determining the exchange rates in the Tender may be corrected by the Procuring Entity.

1.3 This section contains the criteria that the Procuring Entity shall use to evaluate tender and qualify tenderers. No other factors, methods or criteria shall be used other than specified in this tender document. The Tenderer shall provide all the information requested in the forms included in Section IV, Tendering Forms. The Procuring Entity should use **the Standard Tender Evaluation Report for Goods and Works** for evaluating Tenders.

1.4 Evaluation and contract award Criteria

1.4 The Procuring Entity shall use the criteria and methodologies listed in this Section to evaluate tenders and arrive at the Lowest Evaluated Tender. The tender that (i) meets the qualification criteria, (ii) has been determined to be substantially responsive to the Tender Documents, and (iii) is determined to have the Lowest Evaluated Tender price shall be selected for award of contract.

2 Preliminary examination for Determination of Responsiveness

KEFRI will start by examining all tenders to ensure they meet in all respects the eligibility criteria (including requirements in the qualification forms, tenderer's eligibility- confidential business questionnaire) and other requirements in the ITT and that the tender is complete in all aspects in meeting the requirements of *"Part 2 - Procuring Entity's Requirements"*, including checking for tenders with unacceptable errors, abnormally low tenders, and abnormally high tenders. The Standard Tender Evaluation Report for Goods and Works provides clear guidelines on how to deal with review of these requirements. Tenders that do not pass the Preliminary Examination will not be considered further.

EVALUATION CRITERIA OF THE BIDS

Tenderers are advised also to refer to;

Table 7 –Qualifications,

Table 8 –Personnel,

Table 9 –Equipment,

Table 10-Sub-contractors - herein in this section for clarity when preparing their tender document- Evaluation CRITERIA.

Stage 1: Mandatory-Preliminary Criteria for Contractors

MR	Mandatory Requirement
MR 1	Submit one original tender document- Original only
MR 2	<ul style="list-style-type: none"> ➤ The entire/complete tender document (all pages including attachments) must be paginated using a numbering machine and all pages initialed by an authorized officer. Hand written pagination will be deemed non – responsive ➤ Tender documents to be downloaded as issued and submitted filled in Ink/ Typed without altering the format. Alteration of the format and failure to submit any part of the tender document as issued will lead to automatic disqualification. ➤ The tender document – Original MUST be TAPE BOUND (Spiral Binding and use of Spring or box files will be deemed as non-responsive)
MR 3	Provide power of attorney/ Authorization Letter, Giving the name of person who has been authorized to submit/execute this agreement as a binding document and this person should sign all the documents related to this tender
MR 4	Attach a duly filled, signed and stamped Form of Tender AS Provided
MR 5	<p>The main contractor to provide a Tender Security/Bid Bond of Kshs. 200, 000.00 valid for 150 days issued in the right format</p> <p style="text-align: center;">or</p> <p>Dully filled, signed and stamped Tender Securing Declaration Form in the format provided herein (FOR AGPO REGISTERED FIRMS ONLY) <i>Tender security/Bid bond must be addressed and bound to KEFRI in the required format and amount, from a reputable bank or insurance company approved by PPRA and valid for 150 days from tender opening date</i></p>
MR6	<p>Attached dully filled, signed and stamped Tenderer Information Form ELL-1.1 by the Authorized person –For MAIN and SUB-CONTRACTORS – Where applicable</p> <p>Attach – below requirements;</p> <p>Current AGPO registration –where applicable</p> <p>The Main Contractor Must Submit;</p> <ul style="list-style-type: none"> ✓ a Valid ICTA Data Centre Contactor ICTA Grade 5 and above as well as compliance certificate

MR	Mandatory Requirement
	<p>✓ Provide a copy of telecommunication installer license issued by Communication Authority of Kenya (CAK) for main contractor</p> <p>Bidders must be registered or have Domestic sub-contractors forming a consortium in the following categories;</p> <p><i>i. Builder’s works; Sub - contractors must be registered in NCA (7) and above.</i></p> <p><i>ii. Mechanical fire detection and suppression; Sub - contractors must be registered in NCA (5) and above.</i></p> <p><i>iii. Electrical installations; Sub –contractors:</i></p> <p>✓ <i>Must be registered in NCA (5) and below.</i></p> <p>✓ current Licenses from Energy and Petroleum Regulatory Authority (EPRA) for Electrical Installation Works sub-contractor– Class B and above</p> <p>Submit a copy of Certificate of incorporation/registration (all to be Certified by a commissioner of oaths)</p> <p><i>i. Main contractor</i></p> <p><i>ii. Builder’s works; Sub – contractor</i></p> <p><i>iii. Mechanical fire detection and suppression Sub –contractor</i></p> <p><i>iv. Electrical installations; Sub –contractor</i></p> <p>Submit valid Tax compliance certificate <i>Main contractor</i></p> <p><i>i. Builder’s works; Sub – contractor</i></p> <p><i>ii. Mechanical fire detection and suppression Sub –contractor</i></p> <p><i>iii. Electrical installations; Sub –contractor</i></p>
MR7	<p>Attached dully filled, signed and stamped Tenderer’s Eligibility- Confidential Business Questionnaire Form by the authorized person</p> <p>CR12/13 Form (Not older than 3 Months)</p> <p>Business Permit</p>
MR8	<p>Fully filled signed and stamped Self- Declaration Forms by the Authorized person;</p> <p>✓ FORM SD1</p> <p>✓ FORM SD2</p>
MR9	<p>Must submit a duly signed Declaration and Commitment to code of ethics form by the main contractor and all sub-contractors.</p>
MR 10	<p>duly signed Certificate of Independent Tender Determination</p>
MR11	<p>Self-declaration on any Litigation history Certified by a commissioner of oaths (main contractor and all sub-contractors).</p>
MR12	<p>The main contractor, mechanical and electrical sub-contractors to provide a Valid direct manufacturers/developer authorization letters/certificates as per the format provided if not the manufacturer/developer or Proof of ownership if the bidder is the manufacturer e.g. patent registration/copyright/ intellectual property for Active;</p>

MR	Mandatory Requirement
	<ol style="list-style-type: none"> 1. Servers 2. Firewall 3. Biometric Access, 4. Fire detection and suppression system 5. Passive equipment's and 6. AC components
MR13	<p>The Bidder must submit valid letters from the proposed OEM's/manufacture confirming:</p> <ol style="list-style-type: none"> 1. Authorizing the bidder to submit a bid 2. Confirmation of the warranty and guarantee of the equipment 3. Confirm products / solutions quoted are not "end of life" products and are brand new <p>Support including spares/patches for quoted products are available for the next 5 years post system for all equipment & software</p>
MR14	The bidders should provide a Certified Joint Venture Agreement Form/ Document clearly outlining the JV members and responsibilities among other details. –FORM –ELI-1.2
MR15	<p>Financial capability</p> <ol style="list-style-type: none"> i) Availability of Liquid assets and access to lines of credit/other financial resources that prove your capacity to deliver without relying on purchaser payment [attach evidence] ii. Liquid Assets 15,000,000 – -refer to

The tenderers who do not satisfy any of the above mandatory requirements shall be considered Non-Responsive and their tenders will not be evaluated further

STAGE III – TECHNICAL EVALUATION

MANDATORY REQUIREMENTS–CONFORMITY TO THE EQUIPMENTS REQUIREMENTS FOR MAIN CONTRACTOR

Table 3: Conformity to The Equipment's Requirements

TMR	Description	Yes/No	Reference Page
TMR1	Installation Design/Project Plan (Gantt Chart or bidder specific)		
TMR 2	Certificates for Data Protection Partner/Managed Service Partner/Managed services providers (MSPs)/Value added resellers (VARs)/Large-Account Resellers (LARS) or Original Equipment Manufacturers (OEMs) for Data Center Solution		
TMR 3	Must submit a delivery schedule		
TMR 4	Submit a list spares part		
TMR 4	Adherence to technical specifications & scope of works		

TMR	Description	Yes/No	Reference Page
TMR 5	Brochures and technical notes that meet the requirements on all the equipment to be supplied as indicated in Section VI –Technical Specifications; <ol style="list-style-type: none"> 1. Servers 2. UPS 3. UTP & Fibre Optic 4. Equipment cabinet racks 5. Biometric 6. Automatic Fire Suppression 7. Cabinet 		

The tenderers who do not satisfy any of the above mandatory requirements shall be considered Non-Responsive and their tenders will not be evaluated further

KEFRI may seek further clarification/confirmation if necessary, to confirm authenticity/compliance of any condition of the tender.

PAST EXPERIENCE OF THE FIRM –MAIN CONTRACTOR – Refer to Form EXP 4.1, 4.2(a), 4.2(b) Form 1 –Personnel, Form 2 –Professional Exp.

Table 4: Experience for Main Contractor

TR	Parameters	Yes	No
TR 1	EXPERIENCE OF THE FIRM IN SIMILAR SERVICES: - <i>FOR MAIN CONTRACTOR ONLY</i> a) Provide at least three (3) assignments/Contracts of ICT Infrastructure design, development and implementation with a bias on server, active equipment and networks awarded in the Period – 2017 to 2021 NB//: attach LPO/LSO/Contracts/Completion certificates <ul style="list-style-type: none"> • Each with Ksh. 15 Million and above 		
TR 2	(b) Attach recommendation letters in official client’s letter head or completion/practical Certificate (s) from each of the 3 corporate clients submitted above in TR 1(a) above		
TR3	TECHNICAL STAFF COMPETENCES		
	Attach the CVs accompanied by copies of Academic and specialization certificates for key personnel proposed for administration and execution of the contract		
1	Project Manager 1. Degree Computer Science, Engineering, IT or related degree with a minimum of 10 years’ experience in IT systems a minimum of 6 years’ experience in Project Management. 2. Professional experience in developing and implementing and managing scalable systems with competencies in ICT Infrastructure design, development and implementation with a bias on data Centre, active equipment, networks and information security management and IT in general. Give a		

TR	Parameters	Yes	No
	<p>minimum of five projects- attached detailed CV in the format provided</p> <p>3. ICT related certification, PRINCE2/PMI or other equivalent project management certifications an Certified EDMS</p>		
2	<p>Data Centre Expert</p> <p>1. B.SC/ in Computer Science, Engineering or related ICT degree</p> <p>2. Have relevant certifications in the area of Data Centre.</p> <p>5+ years of experience in ICT Data Centre field and should have experience in ICT Data Centre and design, development, Implementation of security in data centers. Give reference a minimum of four projects</p>		
3	<p>System Engineer</p> <p>1. B.SC/ in Computer Science, Engineering or related degree</p> <p>2. Have relevant professional certifications in Infrastructure development e.g. CCNA, certified system engineering professional (CSEP), CCNP, HCA,HCP etc</p> <p>4+ years of experience in ICT Infrastructure design, development and implementation with a bias on configuring server, storage, active equipment and networks Give a minimum of four projects.</p>		
4	<p>Network Engineers/Administrator</p> <p>1. B.SC/ in Computer Science, IT or related degree</p> <p>2. Have relevant certifications in Infrastructure/Network development e.g. CCNA, CCNP</p> <p>Have 4 years' experience in ICT Infrastructure/network design, development and implementation with a bias on configuring servers, storage, active equipment to the network (LAN, WAN, etc.)</p>		
TR4	IMPLEMENTATION METHODOLOGY	Yes	No
	<p>Provide a detailed implementation methodology indicating the following, as a minimum: (failure to provide will lead to automatic disqualification)</p> <ol style="list-style-type: none"> 1. Tentative project plan 2. Test plan 3. Training plan 4. Configuration and backup strategy 5. Migration and cut-over strategy 6. Post GO-LIVE support strategy clearly indicating what is in scope and what shall be out of scope and how out of scope items shall be handled 7. Sample Service Level Agreement and Support plan for all the equipment 		

The tenderers who do not satisfy any of the above technical requirements shall be considered Non-Responsive and their tenders will not be evaluated further

2. TECHNICAL REQUIREMENTS–CONFORMITY TO THE EQUIPMENTS REQUIREMENTS FOR SUB-CONTRACTORS

Table 5: Civil, Mechanical and Electrical Sub-Contractors

MR	Parameters	Yes	No
MR1	Key Personnel (Attach evidence)		
	Director of the firm <ul style="list-style-type: none"> • Holder of any degree certificate 		
	At least 1No. degree/diploma of key personnel in relevant Engineering field with over 5 years relevant experience <ul style="list-style-type: none"> • <i>Civil Engineering or equivalent</i> • <i>Mechanical Engineering</i> • <i>Electrical Engineering</i> 		
	At least 1No certificate holder of key personnel in relevant Engineering field with over 5 years relevant experience <ul style="list-style-type: none"> • <i>Civil Engineering or equivalent</i> • <i>Mechanical Engineering</i> • <i>Electrical Engineering</i> 		
	At least 2No artisan (trade test certificate in relevant Engineering field) with over 5 years relevant experience <ul style="list-style-type: none"> • <i>Civil Engineering or equivalent</i> • <i>Mechanical Engineering</i> • <i>Electrical Engineering</i> 		
MR3	Contract completed in the last five (5) years (Max of 3 No. Projects)- <u>Provide Evidence</u> <ul style="list-style-type: none"> • <i>Civil works</i> • <i>Mechanical works</i> • <i>Electrical works</i> 		
MR5	Schedule of contractors' equipment and transport (proof or evidence of ownership/Lease) <ol style="list-style-type: none"> Relevant Transport - Means of transport (Vehicle) <ul style="list-style-type: none"> • <i>Civil works sub-contractor</i> • <i>Mechanical works sub-contractor</i> • <i>Electrical works sub-contractor</i> 		
	<ol style="list-style-type: none"> Relevant Equipment - Has relevant equipment for work being tendered <ul style="list-style-type: none"> • <i>Civil works sub-contractor</i> • <i>Mechanical works sub-contractor</i> • <i>Electrical works sub-contractor</i> 		
MR6	Financial report		
	Audited financial report (last three (3) years 2017/2018, 2018/2019 and 2019/2020) Average Annual Turn-over equal to or greater the cost of the project <ul style="list-style-type: none"> • <i>Civil works sub-contractor</i> • <i>Mechanical works sub-contractor</i> • <i>Electrical works sub-contractor</i> 		

The tenderers who do not satisfy any of the above technical requirements shall be considered Non-Responsive and their tenders will not be evaluated further

3 Evaluation

3.1 Technical Evaluation

In addition to the criteria listed in ITT 35.2(a) - c) the following factors shall apply:
.....
Tenders that fail technical evaluation will not be considered further.

3.2 Economic Evaluation

Price evaluation: in addition to the criteria listed in ITT 35.4 (a) – (e) the following criteria shall apply:

i) **Alternative Completion Times**, if permitted under ITT 13.2, will be evaluated as follows:
.....

ii) **Alternative technical solutions for specified parts**

The acceptability of alternative technical solutions for parts of the facilities, if permitted under ITT 13.4, will be determined as follows: N/A

iii) **Life Cycle Costs**

[Lifecycle costing should be used when the costs of operation and/ or maintenance over the specified life of the goods or works are estimated to be considerable in comparison with the initial cost and may vary among different Tenders/proposals. It shall be evaluated on a net present value basis. When using lifecycle costing, the Procuring Entity shall specify the following information:]

Since the operating and maintenance costs of the facilities being procured form a major part of the **life cycle cost** of the facilities, these costs will be evaluated according to the principles given here after, including the cost of spare parts for the initial period of operation stated below and based on prices furnished by each Tenderer in Price Schedule Nos. 1 and 2, as well as on past experience of the Procuring Entity or other Procuring Entity's similarly placed. Such costs shall be added to the Tender price for evaluation. The operating and maintenance costs factors for calculation of the life cycle cost are:

- i) Number of years for lifecycle:_____ *[Insert number of years]*
- ii) Operating costs *[state how they will be determined]*
- iii) Maintenance costs, including the cost of spare parts for the initial period of operation *[state how they will be determined]*, and
- iv) Discount rate:_____ *[insert discount rate in percent]* to be used to discount to present value all annual future costs calculated under (ii) and (iii)

above for the period specified in (i).

The price of recommended spare parts quoted in Price Schedule No.6 shall not be considered for evaluation.

(v) Functional Guarantees of the Facilities

The minimum (or maximum) requirements stated in the Specification for functional guarantees required in the Specification are:

Table 6: Functional Guarantees

Functional Guarantee	Minimum(or Maximum, as appropriate) Requirement
1.	
2.	
3.	
..	

For the purposes of evaluation, for each percentage point that the functional guarantee of the proposed Plant and Installation Services is below the norm specified in the Specification and in the above table, but above the minimum acceptable levels also specified there in, an adjustment of _____ will be added to the Tender price. If the drop below the norm or the excess above the minimum acceptable levels is less than one percent, the adjustment will be appropriated accordingly.

vi) Work, services, facilities, etc., to be provided by the Procuring Entity.

Where Tenders include the under taking of work or the provision of services or facilities by the Procuring Entity in excess of the provisions allowed for in the Tendering document, the Procuring Entity shall assess the costs of such additional work, services and/or facilities during the duration of the contract. Such costs shall be added to the Tender price for evaluation.

vii) Specific addition criteria The relevant evaluation method, if any, shall be as follows:

Any adjustments in price that result from the above procedures shall be added, for purposes of comparative evaluation only, to arrive at an “Evaluated Tender Price.” Tender prices quoted by Tenderers shall remain unaltered.

4 Multiple Contracts (ITT 35.6)

4.1 Multiple contracts will be permitted in accordance with ITT 35.4. Tenderers are evaluated on basis of Lots and the lowest evaluated tenderer identified for each Lot. The Procuring Entity will select one Option of the two Options listed below for award of Contracts.

OPTION1

- i) If a tenderer wins only one Lot, the tenderer will be awarded a contract for that Lot, provided the tenderer meets the Eligibility and Qualification Criteria for that Lot.

5 MARGIN OF PREFERENCE

- 5.1 If the **TDS** so specifies, the Procuring Entity will grant a margin of preference of 15% (fifteen percent) to Tenderers offering goods manufactured, mined, extracted, grown, assembled or semi-processed in Kenya. Goods assembled or semi-processed in Kenya shall have a local content of not less than 40%.
- 5.2 The margin of preference will be applied in accordance with, and subject to, the following provisions:
 - a Tenderers applying for such preference on goods offered shall be asked to provide, as part of the data for qualification, such information, including details of the goods produced in Kenya, so as to determine whether, according to the classification established by the Procuring Entity, a particular category of goods or group of goods qualifies for a margin of preference.
 - b After Tenders have been received and reviewed by the Procuring Entity, goods offered in the responsive Tenders shall be assessed to ascertain they are manufactured, mined, extracted, grown, assembled or semi-processed in Kenya. Responsive tenders shall be classified in to the following groups:
 - i) **Group A:** Tenders offering goods manufactured in Kenya, for which (a) labor, raw materials, and components from within Kenya account for more than forty (40) percent of the Ex-Works price; and the production facility in which they will be manufactured or assembled has been engaged in manufacturing or assembling such goods at least since the date of Tender submission date;
 - ii) **Group B:** All other Tenders offering Goods manufactured in Kenya;
 - iii) **Group C:** Tenders offering Goods manufactured outside Kenya that have been already imported or that will be imported.
- 5.3 To facilitate this classification by the Procuring Entity, the tenderer shall complete whichever version of the Price Schedule furnished in the Tendering document is appropriate, provided however, that the completion of an in correct version of the Price Schedule by the Tenderer shall not result in rejection of its Tender, but merely in the Procuring Entity's reclassification of the Tender into its appropriate Tender group.
- 5.4 The Tenders in each group will then be compared to determine the Tender with the lowest evaluated cost in that group. The lowest evaluated cost Tender from each group shall then be compared with each other and if as a result of this comparison a Tender from Group A or Group B is the lowest, it shall be selected for the award.
- 5.5 If as a result of the preceding comparison, a Tender from Group C is the lowest evaluated cost, an amount equal to or 15% of the respective tender price, including unconditional discounts and excluding provisional sums, if any, shall be added to the evaluated price offered in each tender from Group C. If the tender from Group C is

still the lowest tender, it shall be selected for award. If not, the lowest evaluated tender from Group A or B based on the first evaluation price shall be selected.

6 Alternative Tenders (ITT 13.1) –Not applicable.

An alternative if permitted under ITT 13.1, will be evaluated as follows:

The Procuring Entity shall consider Tenders offered for alternatives as specified in Part 2- Procuring Entity's requirements. Only the technical alternatives, if any, of the Tenderer with the Best Evaluated Tender conforming to the basic technical requirements shall be considered by the Procuring Entity.

7 Post qualification and Contract award (ITT 39), more specifically,

- a) In case the tender was subject to post-qualification, the contract shall be awarded to the lowest evaluated tenderer, subject to confirmation of prequalification data, if so required.
- b) In case the tender was not subject to post-qualification, the tender that has been determined to be the lowest evaluated tenderer shall be considered for contract award, subject to meeting each of the following conditions.
 - i) The Tenderer shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the construction cash flow of Kenya Shillings_____
 - ii) Minimum average annual construction turnover of Kenya Shillings ___*[insert amount]*, equivalent calculated as total certified payments received for contracts in progress and/ or completed within the last ___*[insert of year]* years.
 - iii) At least _____(*insert number*) of contract (s) of a similar nature executed within Kenya, or the East African Community or abroad, that have been satisfactorily and substantially completed as a prime contractor, or joint venture member or sub-contractor each of minimum value Kenya shillings ___equivalent.
 - iv) Contractor's Representative and Key Personnel, which are specified as
 - v) Contractors key equipment listed on the table “Contractor's Equipment” below and more specifically listed as *[specify requirements for each lot as applicable]*
 - vi) Other conditions depending on their seriousness.
 - a) **History of non-performing contracts:**

Tenderer and each member of JV in case the Tenderer is a JV, shall demonstrate that Non- performance of a contract did not occur because of the default of the Tenderer, or the member of a JV in the last _____(*specify years*). The required information shall be furnished in the appropriate form.
 - b) **Pending Litigation**

Financial position and prospective long-term profitability of the Single Tenderer, and in the case the Tenderer is a JV, of each member of the JV, shall remain sound according to criteria established with respect to Financial Capability under Paragraph (i) above i fall pending litigation

will be resolved against the Tenderer. Tenderer shall provide information on pending litigations in the appropriate form.

c) **Litigation History**

There shall be no consistent history of court/ arbitral award decisions against the Tenderer, in the last __(*specify years*). All parties to the contract shall furnish the information in the appropriate form about any litigation or arbitration resulting from contracts completed or ongoing under its execution over the years specified. A consistent history of awards against the Tenderer or any member of a JV may result in rejection of the tender.

Table 7: Qualification

Factor	1 Eligibility						
Sub-Factor	Criteria					Documentation Required	
	Requirement	Tenderer					
		Single Entity	Joint Venture (existing or intended)				
			All members combined	Each Partner	At least one Partner		
1.1 Nationality	Nationality in accordance with ITT 4.6.	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Form ELI-1.1 and 1.2, with attachments	
1.2 Conflict of Interest	No-conflicts of interests as described in ITT 4.3	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Form of Tender	
1.3 PPRA Ineligibility (if debarred/Sanctioned)	Not having been declared ineligible by the PPRA as described in 4.5.	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Form of Tender	
1.4 State Owned Enterprise or Institution	Compliance with conditions of ITT 4.8	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Form ELI –1.1 and 1.2, with attachments	
1.5 Ineligibility based on a United Nations resolution or Kenya laws	Not having been excluded as a result of the Kenya laws or official regulations, or by an act of compliance with UN Security Council resolution, in accordance with ITT 4.9 and Section V.	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Form of Tender	
1.6 Tax Obligations for Kenyan Tenderers	Has produced a current tax clearance certificate or tax exemption certificate issued by the Kenya Revenue Authority in accordance with ITT 4.13.	Must meet requirement	must meet requirement	Must meet requirement	N / A	Attach certificate	

Factor	1 Eligibility					
Sub-Factor	Criteria	Tenderer				Documentation Required
	Requirement	Single Entity	Joint Venture (existing or intended)			
			All members combined	Each Partner	At least one Partner	
2.1 History of non-performing contracts	Non-performance ¹ of a contract did not occur within the last _____ () years prior to the deadline for application submission, based on all information on fully settled disputes or litigation. A fully settled dispute or litigation is one that has been resolved in accordance with the Dispute Resolution Mechanism under the respective contract, and where all appeal instances available to the Tenderer have been exhausted.	Must meet requirement by itself or as member to pastor existing JV	N/A	Must meet requirement ²	N/A	Form CON-2
2.2 Suspension	Not under suspension based on execution of a Tender Securing Declaration or Proposal Securing Declaration pursuant to ITT 4.7 and ITT 20.9	Must meet requirement	Must meet requirement	Must meet requirement	Must meet requirement	Form of Tender
2.2 Pending Litigation	Tender's financial position and prospective long-term profitability still sound according to criteria established in 3.1 below and assuming that all pending litigation will be resolved against the Tenderer	Must meet requirement	N/A	Must meet requirement	N/A	Form CON-2

Factor	1 Eligibility					Documentation Required
Sub-Factor	Criteria					
	Requirement	Tenderer				
		Single Entity	Joint Venture (existing or intended)			
			All members combined	Each Partner	At least one Partner	
2.3 Litigation History	No consistent history of court/arbitral award decisions against the Tenderer ³ since 1 st January [insert year]	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Form CON-2
3.1 Financial Capabilities	Submission of audited balance sheets or if not required by the law of the Tenderer's Country, other financial statements acceptable to the Procuring Entity, for the last [] years to demonstrate the current soundness of the Tenderers financial position and its prospective long-term profitability.	Must meet requirement	N/A	Must meet requirement	N/A	Form FIN-3.1 with attachments
3.2 Average Annual Turn over	Minimum average annual turn over in ____ [insert the appropriate sector] of _____, calculated as total certified payments received for contracts in progress or completed, within the last ____ () years	Must meet requirement	Must meet requirement	Must meet _____ percent (____%) of the requirement	Must meet _____ per cent (____%) of the requirement	Form FIN-3.2

¹Non performance, as decided by the Procuring Entity, shall include all contracts where (a) nonperformance was not challenged by the contractor, including through referral to the dispute resolution mechanism under the respective contract, and (b) contracts that were so challenged but fully settled against the contractor. Non performance shall not include contracts where Procuring Entity's decision was overruled by the dispute resolution mechanism. Nonperformance must be based on all information on fully settled disputes or litigation, i.e. dispute or litigation that has been resolved in accordance with the dispute resolution mechanism under the respective contract and where all appeal instances available to the Tenderer have been exhausted.

²This requirement also applies to contracts executed by the Tenderer as JV member.

³The Tenderer shall provide accurate information on the related Tender Form about any litigation or arbitration resulting from contracts completed or ongoing under its execution over the last five years. A consistent history of awards against the Tenderer or any member of a joint venture may result in failure of the Tender.

Factor	1 Eligibility					
Sub-Factor	Criteria					Documentation Required
	Requirement	Tenderer				
		Single Entity	Joint Venture (existing or intended)			
3.3 Financial Resources	The Tenderer must demonstrate access to, or availability of, financial resources such as liquid assets, unencumbered real assets, lines of credit, and other financial means, other than any contractual advance payments to meet: (i) the following cash-flow requirement:..... and (i) the overall cash flow requirements for this contract and its current commitments.	Must meet requirement	Must meet requirement	Must meet _____ per cent (____%) of the requirement	Must meet _____ per cent (____%) of the requirement	Form FIN-3.3
4.1 General Experience	Experience in <i>[insert appropriate sector]</i> under contracts in the role of <i>contractor</i> , subcontractor, or management contractor for at least the last <i>[insert number of years]</i> years starting 1 st January <i>[insert year]</i> .	Must meet requirement	N / A	Must meet requirement	N / A	Form EXP-4.1

Factor	1 Eligibility					
Sub-Factor	Criteria					Documentation Required
	Requirement	Tenderer				
		Single Entity	Joint Venture (existing or intended)		At least one Partner	
			All members combined	Each Partner		
4.2 (a) Specific Experience	<p>(a)Participation as contractor, joint venture member⁴, management contractor, or subcontractor, in at least _____ () contracts within the last _____ () years, each with a value of at least _____ (), that have been successfully and substantially⁵completed and that are similar to the proposed Plant and Installation Services. The similarity of the contracts shall be based on the following: <i>[Based on Section VII, Scope of Works, specify the minimum key requirements in terms of physical size, complexity, construction method, technology and/or other characteristics</i></p> <p><i>Indicate, if any, of this key requirement may also be met through a specialized subcontractor.</i></p>	Must meet requirement	Must meet requirements ⁶	N / A	Must meet the following requirements for the key activities listed below [list key activities and the corresponding minimum requirements to be met by one member otherwise state: "N/A"]	Form EXP 4.2(a)

Factor	1 Eligibility					
Sub-Factor	Criteria					Documentation Required
	Requirement	Tenderer				
		Single Entity	Joint Venture (existing or intended)			
4.2 (a) Specific Experience	<p>(a)Participation as contractor, joint venture member⁴, management contractor, or subcontractor, in at least _____ () contracts within the last _____ () years, each with a value of at least _____ (), that have been successfully and substantially⁵completed and that are similar to the proposed Plant and Installation Services.</p> <p>The similarity of the contracts shall be based on the following: <i>[Based on Section VII, Scope of Works, specify the minimum key requirements in terms of physical size, complexity, construction method, technology and/or other characteristics</i></p> <p><i>Indicate, if any, of this key requirement may also be met through a specialized subcontractor.</i></p>	Must meet requirement	Must meet requirements ⁶	N / A		Must meet the following requirements for the key activities listed below [list key activities and the corresponding minimum requirements to be met by one member otherwise state: "N/A"]

Factor		1 Eligibility				
Sub-Factor	Criteria					Documentation Required
	Requirement	Tenderer	Joint Venture (existing or intended)			
		Single Entity	All members combined	Each Partner	At least one Partner	
4.2 (b) Specific Experience	<p>(b) For the above or other contracts executed during the period stipulated in 4.2(a) above, a minimum experience in the following key activities:</p> <p>....</p> <p><i>Indicate, if any, of this key requirement may also be met through a specialized subcontractor.</i></p>	Must meet requirements	Must meet requirements ⁷	N / A	Must meet the following requirements for key activities listed below <i>[if applicable, out of the key activities in the first column of this 4.2 b), list key activities (volume, number or rate of production as applicable) and the corresponding minimum requirements that have to be met by one member, otherwise this cell should state: "N/A".]</i>	Form EXP - 4.2(b)

Note: [For Multiple lots (contracts) specify financial and experience criteria for each lot under Sub-Factors 3.1, 3.2,4.2 (a) and 4.2(b)]

⁴For contracts under which the Tenderer participated as a joint venture member or sub-contractor, only the Tenderer's share, by value, shall be considered to meet this requirement

⁵Substantial completion shall be based on 80% or more plant and installation completed under the contract.

⁶In the case of JV, the value of contracts completed by its members shall not be aggregated to determine whether the requirement of the minimum value of a single contract has been met. Instead, each contract performed by each member shall satisfy the minimum value of a single contract as required for single entity. In determining whether the JV meets the requirement of total number of contracts, only the number of contracts completed by all members each of value equal or more than the minimum value required shall be aggregated.

⁷In the case of JV, the value of contracts completed by its members shall not be aggregated to determine whether the requirement of the minimum value of a single contract has been met. Instead, each contract performed by each member shall satisfy the minimum value of a single contract as required for single entity. In determining whether the JV meets the requirement of total number of contracts, only the number of contracts completed by all members each of value equal or more than the minimum value required shall be aggregated.

Table 8: Personnel

The Tenderer must demonstrate that it will have the personnel for the key positions that meet the following requirements:

NO.	Position	Total Work Similar Experience(years)	In Similar Works Experience(years)
1.			
2.			
3.			
...			

The Tenderer shall provide details of the proposed personnel and their experience records in the relevant Forms included in Section IV, Tendering Forms.

Table 9: Equipment

The Tenderer must demonstrate that it will have access to the key Contractor's equipment listed hereafter:

No.	Equipment Type and Characteristics	Minimum Number Required
1.		
2.		
3.		
...		

The Tenderer shall provide further details of proposed items of equipment using the relevant Form in Section IV.

Table 10: Subcontractors

Subcontractors/ manufacturers for the following major items of supply or services ('Specialized Subcontractors') must meet the following minimum criteria, here in listed for that item:

Item No.	Description of Item	Minimum Criteria to be sent
1.		
2.		
3.		
...		

Failure to comply with this requirement will result in rejection of the subcontractor.

In the case of a Tenderer who offers to supply and install major items of supply under the contract that the Tenderer did not manufacture or otherwise produce, the Tenderer shall provide the manufacturer's authorization, using the form provided in Section IV, showing that the Tenderer has been duly authorized by the manufacturer or producer of the related plant and equipment or component to supply and install that item Kenya. The Tenderer is responsible for ensuring that the manufacturer or producer complies with the requirements of ITT 4 and 5 and meets the minimum criteria listed above for that item.

SECTION IV - TENDERING FORMS

1. FORM OF TENDER

INSTRUCTIONS TO TENDERERS

- i) The Tenderer must prepare this Form of Tender on stationery with its letterhead clearly showing the Tenderer's complete name and business address.
- ii) All italicized text is to help Tenderer in preparing this form.
- iii) Tenderer must complete and sign and TENDERER'S ELIGIBILITY- CONFIDENTIAL BUSINESS QUESTIONNAIRE, CERTIFICATE OF INDEPENDENT TENDER DETERMINATION and the SELF DECLARATION OF THE TENDERER, all attached to this Form of Tender.
- iv) The Form of Tender shall include the following Forms duly completed and signed by the Tenderer.
 - Tenderer's Eligibility-Confidential Business Questionnaire
 - Certificate of Independent Tender Determination
 - Self-Declaration of the Tenderer

 - Date of this Tender submission: *[insert date (as day, month and year) of Tender submission]*

 - ITT No.: *[insert number of ITT process]* Alternative No.: *[insert identification No if this is a Tender for an alternative]*
 - To: *[insert complete name of Procuring Entity]*
- a) **No reservations:** We have examined and have no reservations to the Tendering document, including Addenda issued in accordance with ITT 8;
- b) **Eligibility:** We meet the eligibility requirements and have no conflict of interest in accordance with ITT 4;
- c) **Tender-Securing Declaration:** We have not been suspended nor declared ineligible by the Procuring Entity based on execution of a Tender Securing Declaration or Proposal-Securing Declaration in Kenya in accordance with ITT 4.7;
- d) **Conformity:** We offer to provide design, supply and installation services in conformity with the Tendering document of the following: *[insert a brief description of the Plant, Design, Supply and Installation Services];*
- e) **Tender Price:** The total price of our Tender, excluding any discounts offered in item (f) below is: *[Insert one of the options below as appropriate]*

Option1, in case of one lot: Total price is: *[insert the total price of the Tender in words and figures, indicating the various amounts and the respective currencies];*

Or Option 2, in case of multiple lots: (a) Total price of each lot [insert the total price of

each lot in words and figures, indicating the various amounts and the respective currencies]; and (b) Total price of all lots (sum of all lots) *[insert the total price of all lots in words and figures, indicating the various amounts and the respective currencies];*

- f) **Discounts:** The discounts offered and the methodology for their application are:
 - i) The discounts offered are: *[Specify in detail each discount offered.]*
 - ii) The exact method of calculations to determine the net price after application of discounts is shown below:
[Specify in detail the method that shall be used to apply the discounts];
- g) **Tender Validity Period:** Our Tender shall be valid for the period specified in TDS 19.1 (as amended if applicable) from the date fixed for the Tender submission deadline specified in TDS 23.1 (as amended if applicable), and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- h) **Performance Security:** If our Tender is accepted; we commit to obtain a Performance Security in accordance with the Tendering document;
- i) **One Tender Per Tenderer:** We are not submitting any other Tender (s) as an individual Tenderer, and we are not participating in any other Tender (s) as a Joint Venture member, and meet the requirements of ITT 4.3, other than alternative Tenders submitted in accordance with ITT 13;
- j) **Suspension and Debarment:** We, along with any of our subcontractors, suppliers, consultants, manufacturers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension. Further, we are not ineligible under the Kenya laws or official regulations or pursuant to a decision of the United Nations Security Council;
- k) **State-owned enterprise or institution:** *[select the appropriate option and delete the other]* *[We are not a state-owned enterprise or institution]/ [We are a state-owned enterprise or institution but meet the requirements of ITT 4.6];*
- l) **Commissions, gratuities and fees:** We have paid, or will pay the following commissions, gratuities, or fees with respect to the Tendering process or execution of the Contract: *[insert complete name of each Recipient, its full address, the reason for which each commission or gratuity was paid and the amount and currency of each such commission or gratuity]*

TENDERER'S ELIGIBILITY - CONFIDENTIAL BUSINESS QUESTIONNAIRE

Instruction to Tenderer

Tender is instructed to complete the particulars required in this Form, one form for each entity if Tender is a JV. Tenderer is further reminded that it is an offence to give false information on this Form.

a) Table 11: Tenderer's details

	ITEM	DESCRIPTION
1	Name of the Procuring Entity	
2	Reference Number of the Tender	
3	Date and Time of Tender Opening	
4	Name of the Tenderer	
5	Full Address and Contact Details of the Tenderer.	1. Country 2. City 3. Location 4. Building 5. Floor 6. Postal Address 7. Name and email of contact person.
6	Current Trade License Registration Number and Expiring Date	
7	Name, country and full address (postal and physical addresses, email, and telephone number) of Registering Body/Agency	
8	Description of Nature of Business	
9	Maximum value of business which the Tenderer handles	
10	State if Tenders Company is listed in stock exchange, give name & full address (postal & physical addresses, email, & telephone number) of state which stock exchange	

General and Specific Details

b) Sole Proprietor, provide the following details.

Name in full _____ Age _____

Nationality _____ Country of Origin _____

Citizenship _____

c) Partnership, provide the following details.

Table 12: Partnership

	Name of Partners	Nationality	Citizenship	%Shares owned
1				
2				
3				

Registered Company, provide the following details.

i) Private or public Company _____

ii) State the nominal and issued capital of the Company: -

Nominal Kenya Shillings (Equivalent) _____

Issued Kenya Shillings (Equivalent) _____

iii) Give details of Directors as follows.

Table 13: Registered Company

	Name of Director	Nationality	Citizenship	%Shares owned
1				
2				
3				

d) DISCLOSURE OF INTEREST-Interest of the Firm in the Procuring Entity.

i) Are there any person/ persons in.....? (Name of Procuring Entity) who has/ have an interest or relationship in this firm?

Yes/No..... If yes, provide details as follows.

Table 14: Disclosure of Interest

	Names Of Person	Designation in the procuring Entity	Interest or Relationship with Tenderer
1			
2			
3			

ii) Table 15: Conflict of Interest Disclosure

	Types of Conflict	Disclosure YES OR NO	If YES provide details of the relationship with Tenderer
1	Tenderer is directly or indirectly controls, is controlled by or is under common control with another tenderer.		
2	Tenderer receives or has received any indirect subsidy from another tenderer.		
3	Tenderer has the same legal representative as another tenderer		
4	Tenderer has a relationship with another tenderer, directly or through common third parties, that puts it in a position to influence the tender of another tenderer, or influence the decisions of the Procuring Entity regarding this tendering process.		
5	Any of the Tender's affiliates participated as a consultant in the preparation of the design or technical specifications of the works that are subject of the tender.		
6	Tenderer would be providing goods, works, non-consulting services or consulting services during implementation of the contract specified in this Tender Document		
7	Tenderer has a close business or family relationship with a professional staff of the Procuring Entity who directly or indirectly involved in the preparation of the Tender document or specifications of the Contract, and/or the Tender evaluation process of such contract		
8	Tenderer has a close business or family relationship with a professional staff of the Procuring Entity who would be involved in the implementation or supervision of the such contract		
9	Has the conflict stemming from such relationship stated in item 7 and 8 above been resolved in a manner acceptable to the Procuring Entity throughout the tendering process and execution of the Contract		

e) Certification

On behalf of the Tenderer, I certify that the information given above is complete, current and accurate as at the date of submission.

Full Name _____

Title or Designation _____

(Signature)

(Date)

CERTIFICATE OF INDEPENDENT TENDER DETERMINATION

I, the under signed, in submitting the accompanying Letter of Tender to the _____
_____ [Name of Procuring Entity]
for: _____ [Name and number of
tender] in response to the request for tenders made by: _____ [Name of Tenderer] do
here by make the following statements that I certify to be true and complete in every respect:

I certify, on behalf of _____ [Name of Tenderer]
that:

1. I have read and I understand the contents of this Certificate;
2. I understand that the Tender will be disqualified if this Certificate is found not to be true and complete in every respect;
3. I am the authorized representative of the Tenderer with authority to sign this Certificate, and to submit the Tender on behalf of the Tenderer;
4. For the purposes of this Certificate and the Tender, I understand that the word "competitor" shall include any individual or organization, other than the Tenderer, whether or not affiliated with the Tenderer, who:
 - a) Has been requested to submit a Tender in response to this request for tenders;
 - b) could potentially submit a tender in response to this request for tenders, based on their qualifications, abilities or experience;
5. The Tenderer discloses that [check one of the following, as applicable]:
 - a) The Tenderer has arrived at the Tender independently from, and without consultation, communication, agreement or arrangement with, any competitor;
 - b) The Tenderer has entered into consultations, communications, agreements or arrangements with one or more competitors regarding this request for tenders, and the Tenderer discloses, in the attached document(s), complete details thereof, including the names of the competitors and the nature of, and reasons for, such consultations, communications, agreements or arrangements;
6. In particular, without limiting the generality of paragraphs (5) (a) or (5) (b) above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
 - a) prices;
 - b) methods, factors or formulas used to calculate prices;
 - c) the intention or decision to submit, or not to submit, a tender; or
 - d) the submission of a tender which does not meet the specifications of the request for Tenders; except as specifically disclosed pursuant to paragraph (5) (b) above;
7. In addition, there has been no consultation, communication, agreement or arrangement with any competitor regarding the quality, quantity, specifications or delivery particulars of the works or services to which this request for tenders relates, except as specifically authorized by

the procuring authority or as specifically disclosed pursuant to paragraph (5) (b) above;

8. The terms of the Tender have not been, and will not be, knowingly disclosed by the Tenderer, directly or indirectly, to any competitor, prior to the date and time of the official tender opening, or of the awarding of the Contract, whichever comes first, unless otherwise required by law or as specifically disclosed pursuant to paragraph (5) (b) above.

Name_____

Title_____

Date

[Name, title and signature of authorized agent of Tenderer and Date]

SELF DECLARATION FORMS

FORM SD1

SELF DECLARATION THAT THE PERSON /TENDERER IS NOT DEBARRED IN THE MATTER OF THE PUBLIC PROCUREMENT AND ASSET DISPOSAL ACT 2015.

I,, of Post Office Box being a resident of In the Republic of do hereby make a statement as follows: -

1. THAT I am the Company Secretary/ Chief Executive/ Managing Director/ Principal Officer/ Director of *(Insert name of the Company)* who is a Bidder in respect of Tender No. For *(Insert tender title/description)* for *(Insert name of the Procuring entity)* and duly authorized and competent to make this statement.
2. THAT the afore said Bidder, its Directors and subcontractors have not been debarred from participating in procurement proceeding under Part IV of the Act.
3. THAT what is deponed to here in above is true to the best of my knowledge, information and belief.

.....
(Title) (Signature) (Date)

Bidder Official Stamp

FORM SD2

SELF DECLARATION THAT THE PERSON/TENDERER WILL NOT ENGAGE IN ANY CORRUPT OR FRAUDULENT PRACTICE.

I,of P. O. Box.....being a resident ofin the Republic of..... do hereby make a statement as follows: -

- 1. THAT I am the Chief Executive/ Managing Director/ Principal Officer/ Director of..... (Insert name of the Company) who is a Bidder in respect of Tender No. For (Insert tender title/description) for (Insert name of the Procuring entity) and duly authorized and competent to make this statement.
2. THAT the afore said Bidder, its servants and/ or agents/ subcontractors will not engage in any corrupt or fraudulent practice and has not been requested to pay any inducement to any member of the Board, Management, Staff and/or employees and/or agents of (Insert name of the Procuring entity) which is the procuring entity.
3. THAT the aforesaid Bidder, its servants and/ or agents/ subcontractor shave not offered any inducement to any member of the Board, Management, Staff and/ or employees and/ or agents of (Name of the procuring entity).
4. THAT the aforesaid Bidder will not engage/ has not engaged in any corrosive practice with other bidders participating in the subject tender.
5. THAT what is deponed to here in above is true to the best of my knowledge information and belief.

..... (Title) (Signature) (Date)

Bidder's Official Stamp

DECLARATION AND COMMITMENT TO THE CODE OF ETHICS

I,.....
(Person) on behalf of (Name of the Business/ Company/ Firm)
..... declare that I have read and fully understood the
contents of the Public Procurement & Asset Disposal Act, 2015, Regulations and the Code of Ethics
for persons participating in Public Procurement and Asset Disposal and my responsibilities under the
Code.

I do hereby commit to abide by the provisions of the Code of Ethics for persons participating in
Public Procurement and Asset Disposal.

Name of Authorized
Signatory.....

Sign.....

Position.....

Office
address.....Telephone.....

Email.....

Name of the
Firm/Company.....

Date.....

(Company Seal/ Rubber Stamp where applicable)

Witness

Name.....

Sign.....

Date.....

SCHEDULE OF RATES AND PRICES –

The tenderers are required also to refer to the below listed tables for their **BID PRICES**; - to be carried to the form of tender;

1. Table 48 – Sub-total for Integrated Data Centre
2. Table 49 - Sub-total for Civil works
3. Table 50 - Sub-total for Mechanical works
4. Table 69 - Sub-total for Electrical works
5. Table 71 – Tenderer GRAND/SUMMARY TOTAL BID PRICE

Table 16: Schedule No. 1. Plant and Mandatory Spare Parts Supplied from Abroad –

Item	Description	Code ¹	Qty,	Unit Price ²		Total Price ²
					CIP	
			(1)	(2)	(3)	(1)x(3)
		Total (to Schedule No. 5. Grand Summary)				

Table 17: Country of Origin Declaration Form

Item	Description	Code	Country

Table 18: Schedule No. 2. Plant and Mandatory Spare Parts Supplied from Within Kenya

Item	Description	Qty.	EXW Unit Price ¹	EXW Total Price ¹
		(1)	(2)	(1)x(2)
Total (to Schedule No.5. Grand Summary)				
Name of Tenderer				
Signature				
Specify currency in accordance with ITT 18				

Table 19: Schedule No.3. Design Services

Item	Description	Qty.	Unit Price ¹		Total Price ¹
			Local Currency Portion	Foreign Currency Portion	
		(1)	(2)	(optional)	(1)x(2)
Total (to Schedule No.5 Grand Summary)					

Name of Tenderer _____ Signature _____

Table 20: Schedule No. 4. Installation and Other Services -

Item	Description	Qty.	Unit Price ¹		Total Price ¹	
			Foreign Currency Portion	Local Currency Portion	Foreign	Local
		(1)	(2)	(3)	(1)x(2)	(1)x(3)
Total (to Schedule No.5 Grand Summary)						

Name of Tenderer _____ Signature _____

¹Specify currency in accordance with ITT 18

Table 21: Schedule No. 5. Grand Summary

Item	Description	Total Price ¹	
		Foreign	Local
	Total Schedule No. 1, Plant, and Mandatory Spare Parts Supplied from Abroad		
	Total Schedule No. 2, Plant, and Mandatory Spare Parts Supplied from Within Kenya		
	Total Schedule No. 3, Design Services		
	Total Schedule No. 4, Installation and Other Services		
TOTAL (to Form)			

Name of Tenderer _____ Signature _____

Table 22: Schedule No. 6. Recommended Spare Parts

Item	Description	Qty.	Unit Price		Total Price
			CIF or CIP(Foreign Parts)	EXW(Local Parts)	
		(1)	(2)	(3)	(1)x (2) or (3)

Name of Tenderer _____ Signature _____

Price Adjustment

Where the Contract Period (excluding the Defects Liability Period) exceeds eighteen (18) months, it is normal procedure that prices payable to the Contractor shall be subject to adjustment during the performance of the Contract to reflect changes occurring in the cost of labor and material components. In such cases the Tendering document shall include in this form a formula of the following general type, pursuant to SCC Sub-Clause 11.2.

Where Contracts are of a shorter duration than eighteen (18) months or in cases where there is to be no Price Adjustment, the following provision shall not be included. Instead, it shall be indicated under this form that the prices are to remain firm and fixed for the duration of the Contract.

¹Specify currency in accordance with ITT 18. Create and use as many columns for Foreign Currency requirement as there are foreign currencies

Sample Price Adjustment Formula

If in accordance with GCC 11.2, prices shall be adjustable, the following method shall be used to calculate the price adjustment:

Prices payable to the Contractor, in accordance with the Contract, shall be subject to adjustment during performance of the Contract to reflect changes in the cost of labor and material components, in accordance with the following formula:

$$P1 = P0 \left[a + b \frac{L1}{L0} + c \frac{M1}{M0} \right]$$

P1 = adjustment amount payable to the Contractor

P0 = Contract price (base price)

a = percentage of fixed element in Contract price (a=%)

b = percentage of labor component in Contract price (b=%)

c = percentage of material and equipment component in Contract price (c=%)

L0, L1 = labor indices applicable to the appropriate industry in the country of origin on the base date and the date

For adjustment, respectively

M0, M1 = material and equipment indices in the country of origin on the base date and the date for adjustment, respectively

N.B. a+b+c= 100%.

Conditions Applicable to Price Adjustment

The Tenderer shall indicate the source of labor, source of exchange rate and materials indices and the base date indices in its Tender.

Item Source of Indices Used Base Date Indices.

The base date shall be the date thirty (30) days prior to the Tender closing date.

The date of adjustment shall be the mid-point of the period of manufacture or installation of component or Plant. The following conditions shall apply:

- (a) No price increase will be allowed beyond the original delivery date unless covered by an extension of time awarded by the Procuring Entity under the terms of the Contract. No price increase will be allowed for periods of delay for which the Contractor is responsible. The Procuring Entity will, however, be entitled to any price decrease occurring during such periods of delay.
- (b) If the currency in which the Contract price, P_0 , is expressed is different from the currency of the country of origin of the labor and/or materials indices, a correction factor will be applied to avoid incorrect adjustments of the Contract price. The correction factor shall be: Z_0/Z_1 , where,
 Z_0 =the number of units of currency of the origin of the indices which equal to one unit of the currency of the Contract Price P_0 on the Base date, and
 Z_1 =the number of units of currency of the origin of the indices which equal to one unit of the currency of the Contract Price P_0 on the Date of Adjustment.
- (c) No price adjustment shall be payable on the portion of the Contract price paid to the Contractor as an advance payment.

TECHNICAL PROPOSAL

- Site Organization
- Method Statement
- Mobilization Schedule
- Construction Schedule
- Plant
- Contractor's Equipment
- Personnel
- Proposed Subcontractors for Major Items of Plant and Installation Services
- Others

SITE ORGANIZATION

METHOD STATEMENT

MOBILIZATION SCHEDULE

CONSTRUCTION SCHEDULE

Contractor's Equipment Form EQU

The Tenderer shall provide adequate information to demonstrate clearly that it has the capability to meet the requirements for the key Contractor's equipment listed in Section III, Evaluation and Qualification Criteria. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Tenderer.

Table 23: Contractor's Equipment

Item or Equipment		
Equipment information	Name of manufacturer	Model and power rating
	Capacity	Year of Manufacture
Current status	Current location	
	Details of current commitments	
Source	Indicate source of the equipment	
	Owned	Rented Leased Specially manufactured

Table 24: Omit the following information for equipment owned by

Owner	Name of owner	
	Address of owner	
	Telephone	Contact Name and Title
	Fax	Telex
Agreements	Details of rental/lease/manufacture agreements specific to the project	

Functional Guarantees

Form FUNC

The Tenderer shall copy in the left column of the table below, the identification of each functional guarantee required in the Specification and stated by the Procuring Entity in para.1.2 (c) of Section III, Evaluation and Qualification Criteria, and in the right column, provide the corresponding value for each functional guarantee of the proposed plant and equipment.

Table 25: Functional Guarantees

Required Functional Guarantee	Value of Functional Guarantee of the Proposed Plant and Equipment
1.	
2.	
3.	
...	

Personnel

Form PER -1- Proposed Personnel

Tenderers should provide the names of suitably qualified personnel to meet the specified requirements stated in Section III. The data on their experience should be supplied using the Form below for each candidate.

Table 26: Personnel

1.	Title of Position*
	Name
2.	Title of Position*
	Name
3.	Title of Position*
	Name
4.	Title of Position*
	Name

*As listed in Section III.

Form PER-2

Table 27: Resume of Proposed Personnel

Position		
Personnel Information	Name	Date of Birth
	Professional qualifications	
Present employment	Name of Procuring Entity	

	Address of Procuring Entity	
	Telephone	Contact (manager/personnel officer)
	Fax	E-mail
	Job title	Years with present Procuring Entity

Summarize professional experience over the last 20 years, in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

Table 28: Professional Experience Summary

From	To	Company/ Project/ Position/ Relevant Technical and Management Experience

Proposed Subcontractors for Major Items of Plant and Installation Services. A list of major items of Plant and Installation Services is provided below.

The following Subcontractors and/or manufacturers are proposed for carrying out the item of the facilities indicated. Tenderers are free to propose more than one for each item.

Table 29: Proposed Subcontractors

Major Items of Plant and Installation Services	Proposed Subcontractors/Manufactures	Nationality

Others - Time Schedule

(To be used by tenderer when alternative Time for Completion is invited in ITT 13.2)

Tenderers Qualification without Prequalification

To establish its qualifications to perform the contract in accordance with Section III, Evaluation and Qualification Criteria the Tenderer shall provide the information requested in the corresponding Information Sheets included here under.

Form ELI 1.1

Tenderer Information Sheet

Date: _____

ITT No.: _____

Table 30: Tenderer Information Sheet

1.Tenderer’s Legal Name:
2.In case of JV, legal name of each party:
3.Tenderer’s actual or intended Country of Registration:
4.Tenderer’s Year of Registration:
5. Tenderer’s legal Address in Country of Registration:
6.Tenderer’s Authorized Representative Information Name: Address: Telephone/Fax numbers: Email Address:
7.Attached are copies of original documents of: Articles of Incorporation or registration of firm named in 1, above, in accordance with ITT 4.1 and ITT 4.4 In case of JV, Form of intent to form JV including a draft agreement, in accordance with ITT 4.1 and ITT 11.2 In case of state-owned enterprise or institution from Kenya, documents establishing legal and financial autonomy and compliance with the principles of commercial law, and is not under the supervision of the Procuring Entity with ITT 4.6

Please note that a written authorization needs to be attached to this sheet as required by ITT 21.3

Form ELI 1.2

Party to JV Information Sheet

Date: _____

ITT No.: _____

Table 31: Party to JV Information Sheet

1.Tenderer's Legal Name:
2.JV's Party legal name:
3. JV's Party Country of Registration:
4. JV's Party Year of Registration:
5. JV's Party Legal Address in Country of Registration:
6. JV's Party Authorized Representative Information Name: Address: Telephone/Fax numbers: Email Address:
7.Attached are copies of original documents of: Articles of Incorporation or registration of firm named in 1, above, in accordance with ITT 4.1 and ITT 4.4 In case of state-owned enterprise or institution from Kenya, documents establishing legal and financial autonomy and compliance with the principles of commercial law, and is not under the supervision of the Procuring Entity with ITT 4.6

Form CON – 2

Historical Contract Non-Performance

Tenderer's Legal Name: _____ Date: _____

JV Member Legal Name: _____

ITT No.: _____

Table 32: Non-Performed Contracts

Non-Performed Contracts in accordance with Section III, Evaluation and Qualification Criteria			
Contract non-performance did not occur since 1 st January [Insert Year] specified in Section III, Evaluation and Qualification Criteria, Sub-Factor 2.1			
Contract(s) non-performed since 1 st January [Insert Year] specified in Section III, Evaluation and Qualification Criteria, Sub-Factor 2.1			
Year	Non-performed portion of contract	Contract Identification	Total Contract Amount(current value, currency, exchange rate and K Shilling equivalent)
		Reason(s) for non-performance: <i>[indicate main reason(s)]</i>	
Pending Litigation, in accordance with Section III, Evaluation and Qualification Criteria			
No pending litigation in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.3.			
Non-Performed Contracts in accordance with Section III, Evaluation and Qualification Criteria			
D Contract non-performance did not occur since 1 st January <i>[insert year]</i> specified in Section III, Evaluation and Qualification Criteria, Sub-Factor2.1.			
D Contract(s) not performed since 1 st January <i>[insert year}</i> specified in Section III, Evaluation and Qualification Criteria, requirement2.1			

Year	Non-Performed portion of contract	Contract Identification	Total Contract Amount (current value, currency, exchange rate and K Shilling equivalent)
[Insert Year]	[insert amount percentage]	Contract Identification: [indicate complete contract name/ number, and any other identification] Name of Procuring Entity: [insert full name] Address of Procuring Entity: [insert City/street/building/floor number/room number/country] Reasons for non-performance:[indicate main reason(s)]	[insert amount]
Pending Litigation No pending litigation in accordance with Section III, Evaluation and Qualification, Sub-Factor 2.3 Pending litigation in accordance with Section III, Evaluation and Qualification, Sub-Factor 2.3 as indicated below			
		Contract Identification: Name of Procuring Entity Address of Procuring Entity: Matter in dispute: Party who initiated the dispute: Status of dispute:	
		Contract Identification: Name of Procuring Entity Address of Procuring Entity: Matter in dispute: Party who initiated the dispute: Status of dispute:	
		Contract Identification: Name of Procuring Entity Address of Procuring Entity: Matter in dispute: Party who initiated the dispute: Status of dispute:	
[Insert Year]	[insert Percentage]	Contract Identification:[indicate complete contract name, number, and any other identification] Name of Procuring Entity:[insert full name] Address of Procuring Entity:[insert City/street/building/floor number/room number/country] Matter in dispute:[indicate main issues in dispute] Party who initiated the dispute:[indicate "Procuring Entity" or "Contractor"] Reason(s) for litigation and award decision[indicate main reason(s)]	

Table 33: Form CCC

Current Contract Commitments / Works in Progress

Tenderers and each member to a JV should provide information on their current commitments on all contracts that have been awarded, or for which a Form of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

Name of contract	Procuring Entity, contact address /Tel	Value of outstanding work (current K Shilling equivalent)	Estimated completion date	Average monthly invoicing over last six months (K Shilling /month)
1.				
2.				
3.				
4.				
5.				
etc.				

Table 34: Historical Financial Performance

Form FIN – 3.1

Financial Situation

Historical Financial Performance

Tenderer's Legal Name: _____ Date: _____

JV Member Legal Name: _____ ITT No.: _____

To be completed by the Tenderer and, if JV, by each member.

Financial information in K Shilling equivalent	Historic information for previous ____ () years (K Shilling equivalent in 000s)						
	Year 1	Year 2	Year 3	Year ...	Year n	Avg.	Avg. Ratio
Information from Balance Sheet							
Total Assets (TA)							
Total Liabilities (TL)							
Net Worth (NW)							
Current Assets (CA)							
Current Liabilities (CL)							
Information from Income Statement							
Total Revenue (TR)							
Profits Before Taxes (PBT)							

Attached are copies of financial statements (balance sheets, including all related notes, and income statements) for the years required above complying with the following conditions:

- a) Must reflect the financial situation of the Tenderer or member to a JV, and not sister or parent companies.
- b) Historic financial statements must be audited by a certified accountant.
- c) Historic financial statements must be complete, including all notes to the financial statements.
- d) Historic financial statements must correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).

Form FIN - 3.2

Average Annual Turnover

Tenderer's Legal Name: _____ Date: _____

JV Member Legal Name: _____ ITT No.: _____

Table 35: Average Annual Turnover

Annual Turnover		
Year	Amount and Currency	K SHILLING Equivalent
*Average Annual Turnover		

*Average annual turnover calculated as total certified payments received for work in progress or completed, divided by the number of years specified in Section III, Evaluation Criteria, Sub-Factor 2.3.2.

Form FIN3.3

Financial Resources

Specify proposed sources of financing, such as liquid assets, unencumbered real assets, lines of credit, and other financial means, net of current commitments, available to meet the total cash flow demands of the subject contractor contracts as indicated in Section III, Evaluation and Qualification Criteria.

Table 36: Financial Resources

Source of Financing	Amount(K Shilling Equivalent)
1.	
2.	
3.	
4.	

Form EXP 4.1

General Experience

Tenderer's Legal Name: _____

JV Member Legal Name: _____

ITT No.: _____

Date: _____

Table 37: General Experience

Starting Month/Year	Ending Month/Year	Years*	Contract Identification	Role of Tenderer
			Contract Name: Brief Description of the Works performed by the Tenderer: Name of Procuring Entity: Address:	
			Contract Name: Brief Description of the Works performed by the Tenderer: Name of Procuring Entity: Address:	
			Contract Name: Brief Description of the Works performed by the Tenderer: Name of Procuring Entity: Address:	
			Contract Name: Brief Description of the Works performed by the Tenderer: Name of Procuring Entity: Address:	
			Contract Name: Brief Description of the Works performed by the Tenderer: Name of Procuring Entity: Address:	
			Contract Name: Brief Description of the Works performed by the Tenderer: Name of Procuring Entity: Address:	

*List calendar year for years with contracts with at least nine (9) months activity per year starting with the earliest year

Form EXP –4.2(a)

Specific Experience

Tenderer's Legal Name: _____ Date: _____

JV Member Legal Name: _____ ITT No.: _____

Table 38: Specific Experience

Similar Contract Number: of	Information		
Contract Identification			
Award Date			
Completion Date			
Role in Contract	Contractor	Management Contractor	Subcontractor
Total contract amount			KSHILLING
If member in a JV or subcontractor, specify participation of total contract amount Procuring Entity's Name: Address:			
Telephone/fax number: Email:			
Description of the similarity in accordance with sub-factor 4.3a) of section III:			
Amount			
Physical size			
Complexity			
Methods/ Technology Physical Production rate			

Form EXP –4.2(b)

Specific Experience in Key Activities

Tenderer's Legal Name: _____ Date: _____

JV Member Legal Name: _____ ITT No.: _____

Sub-contractor's Legal Name: _____

Table 39: Specific Experience in Key Activities

Similar Contract Number: of	Information		
Contract Identification			
Award Date			
Completion Date			
Role in Contract	Contractor	Management Contractor	Subcontractor
Total contract amount			KSHILLING
If member in a JV or subcontractor, specify participation of total contract amount Procuring Entity's Name: Address:			
Telephone/fax number: Email:			
Description of the similarity in accordance with sub-factor 4.3a) of section III:			
Amount			
Physical size			
Complexity			
Methods/ Technology Physical Production rate			

Form of Tender Security Form of Tender

Security–Bank Guarantee

[The bank shall fill in this Bank Guarantee Form in accordance with the instructions indicated.]

[Guarantor Form head or SWIFT identifier code] Beneficiary: [Procuring Entity to insert its name and address] ITT No.: [Procuring Entity to insert reference number for the Request for Tenders] Alternative No.: [Insert identification No if this is a Tender for an alternative] Date: [Insert date of issue]

TENDER GUARANTEE No.: _____ *[Insert guarantee reference number]*

Guarantor: _____ *[Insert name and address of place of issue, unless indicated in the Form head]*

We have been informed that _____ *[insert name of the Tenderer, which in the case of a joint venture shall be the name of the joint venture (whether legally constituted or prospective) or the names of all members thereof]* (herein after called "the Applicant") has submitted or will submit to the Beneficiary its Tender (hereinafter called "the Tender") for the execution of _____ under ITT No. _____

Furthermore, we understand that, according to the Beneficiary's conditions, Tenders must be supported by a Tender guarantee.

At the request of the Applicant, we, as Guarantor, here by irrevocably under take to pay the Beneficiary any sum or sums not exceeding in total an amount of __ (____) upon receipt by us of the Beneficiary's complying demand, supported by the Beneficiary's statement, whether in the demand itself or a separate signed document accompanying or identifying the demand, stating that either the Tenderer:

- (a) Has withdrawn its Tender during the period of Tender validity set forth in the Tenderer's Form of Tender ("the Tender Validity Period"), or any extension there to provide by the Tenderer; or
- (b) Having been notified of the acceptance of its Tender by the Beneficiary during the Tender Validity Period or any extension there to provide by the Applicant, (i) has failed to execute the Contract Agreement, or (ii) has failed to furnish the Performance Security, in accordance with the Instructions to Tenderers ("ITT") of the Beneficiary's Tendering document.

This guarantee will expire: (a) if the Applicant is the successful Tenderer, upon our receipt of copies of the contract agreement signed by the Applicant and the Performance Security issued to the Beneficiary in relation to such contract agreement; or (b) if the Applicant is not the successful Tenderer, upon the earlier of (i) our receipt of a copy of the Beneficiary's notification to the Applicant of the results of the Tendering process; or (ii) twenty-eight days after the end of the Tender Validity Period.

Consequently, any demand for payment under this guarantee must be received by us at the office indicated above on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758.

[Signature(s)]

Note: All italicized text is for use in preparing this form and shall be deleted from the final product.

FORM OF TENDER SECURITY - TENDER BOND

BOND NO. _____

BY THIS BOND _____ as Principal (hereinafter called "the Principal"), and _____, authorized to transact business in _____, as Surety (here in after called "the Surety"), are held and firmly bound unto _____ as Obligated (herein after called "the Procuring Entity") in the sum of ⁸ (_____), for the payment of which sum, well and truly to be made, we, the said Principal and Surety, bind ourselves, our successors and assigns, jointly and severally, firmly by these presents.

WHEREAS the Principal has submitted a written Tender to the Procuring Entity dated the _____ day of _____, 20_____, for the construction of _____ (herein after called the "Tender").

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Principal:

- a) Withdraws its Tender during the period of Tender validity specified in the Form of Tender; or
- b) Having been notified of the acceptance of its Tender by the Procuring Entity during the period of Tender validity;
 - (i) fails or refuses to execute the Contract Form, if required; or (ii) fails or refuses to furnish the Performance Security in accordance with the Instructions to Tenderers;

then the Surety under takes to immediately pay to the Procuring Entity up to the above amount upon receipt of the Procuring Entity's first written demand, without the Procuring Entity having to substantiate its demand, provided that in its demand the Procuring Entity shall state that the demand arises from the occurrence of any of the above events, specifying which event (s) has occurred.

The Surety here by agrees that its obligation will remain in full force and effect up to and including the date 28 days after the date of expiration of the Tender Validity Period set for thin the Principal's Form of Tender or any extension there to provide by the Principal.

IN TESTIMONY WHERE OF, the Principal and the Surety have caused these presents to be executed in the irrespective names this _____ day of _____ 20_____.

Principal: _____
Corporate Seal (where appropriate)

Surety: _____

⁸The amount of the Bond shall be denominated in the Kenya currency or the equivalent amount in a freely convertible currency.

TENDER-SECURING DECLARATION FORM {r 46 and 155(2)}

[The Bidder shall complete this Form in accordance with the instructions indicated] Date: [insert date (as day, month and year) of Tender Submission] Tender No.: _____ [insert number of tendering process]

To: _____ *[insert complete name of*

Purchaser] I/We, the under signed, declare that:

1. I/We understand that, according to your conditions, bids must be supported by a Tender-Securing Declaration.
2. I/We accept that I/ we will automatically be suspended from being eligible for tendering in any contract with the Purchaser for the period of time of [insert number of months or years] starting on [insert date], if we are in breach of our obligation (s) under the bid conditions, because we—(a) have withdrawn our tender during the period of tender validity specified by us in the Tendering Data Sheet; or (b) having been notified of the acceptance of our Bid by the Purchaser during the period of bid validity, (i) fail or refuse to execute the Contract, if required, or (ii) fail or refuse to furnish the Performance Security, in accordance with the instructions to tenders.
3. I/ We understand that this Tender Securing Declaration shall expire if we are not the successful Tenderer (s), upon the earlier of:
 - a) Our receipt of a copy of your notification of the name of the successful Tenderer; or
 - b) Thirty days after the expiration of our Tender.
4. I/ We understand that if I am/ we are/ in a Joint Venture, the Tender Securing Declaration must be in the name of the Joint Venture that submits the bid, and the Joint Venture has not been legally constituted at the time of bidding, the Tender Securing Declaration shall be in the names of all future partners as named in the letter of intent.

Signed:

Capacity/title (director or partner or sole proprietor, etc.).....

Name:

Duly authorized to sign the bid for and on behalf of: *[Insert complete name of Tenderer]*

Dated on.....day of..... *[Insert date of signing]*

Seal or stamp

MANUFACTURER'S AUTHORIZATION FORM

Date: _____

ITT No.: _____

To: _____

WHEREAS

We _____, who are official manufacturers of _____, having factories at _____, do hereby authorize _____ to submit a Tender the purpose of which is to provide the following goods, manufactured by us _____, and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty in accordance with Clause 27 of the General Conditions, with respect to the goods offered by the above firm.

Signed: _____

Name: _____

Title: _____

Duly authorized to sign this Authorization on behalf of: _____

Dated on _____ day of _____, _____

SCOPE OF SUPPLY OF PLANT AND INSTALLATION SERVICES BY THE CONTRACTOR

2.1 SUPPLY DELIVERY AND INSTALLATION OF INTEGRATED DATA CENTER INFRASTRUCTURE/ SMART RACKS FOR PRIMARY DATA CENTRE, NOC, SERVERS, HA NGFW, HA CORE SWITCH

2.1.1 Summary

These specifications describe requirements for a fully integrated and intelligent Datacenter. The system will be designed to provide precision cooling, Uninterruptible Power System (UPS), Remote Monitoring solution for critical IT components inside the rack.

Design a data Centre physical Infrastructure based on the best industrial practices and standard of the data center construction and in conformity to established ICT authority standards
Supply and install a secure data center Passive and intelligent physical infrastructure with 4 Usable racks. Migration of services from the current DC to the new Data Centre.

2.1.2 Design Requirements

The proposed Modular DC system should be a pre-fabricated factory unit. It should be floor mounted, optimized for maximum cooling capacity in a minimum footprint.

It should be specifically designed for server rooms and the system should be designed to ensure rapidly deployable solutions that cost-effectively increase efficiency, add data center capacity, and improve IT control. The proposed Intelligent Integrated Infrastructure should include following components;

- Uninterrupted Power Supply.
- Rack Cooling Unit
- 42U racks of dimensions 800mm X 1000mm

The proposed solution should have Environmental Remote Monitoring with Email alerts, Smoke detection, Water leak detection, Temperature & Humidity sensor & Door Sensors. Electrical system with inbuilt essential MCB mounted inside the cabinet, Critical systems like UPS & Cooling Unit will have N+N topology.

The Intelligent integrated infrastructure shall have 160 U (total) space usable space distributed in 4 racks, to accommodate IT and network equipment & devices. It will have a net sensible cooling capacity rated no less than 7kW and 2X20 KVA rack mountable UPS with 60 minutes of external Battery Backup on each UPS.

Structured cabling works will include cabling of ICT offices, Data Center and NOC areas with Category 6A UTP cabling with Fiber Optic backbones from Supply Chain Management and Finance to the Data Centre to accommodate the change in switch rack as detailed below: -

2.1.3 Detailed Specification of Components

The proposed solution should have a minimum of HD series server cabinets that are ideal

solution for network & server applications. The cabinet's rugged construction will offer the highest stability as well as high-load bearing capacity.

2.2 Network Operations Center (NOC)

2.2.1 Identification

The formal identification for this document is the Technical Specification for the installation and commissioning of network and system monitoring tool for the Institute. This document provides the technical requirements that shall be satisfied for the procurement of the services.

2.2.2 Purpose

The primary purpose of the project is to provide monitoring solution for servers, applications and network elements used by IT department Systems Administrator, Network Administrators and IT help desk section to monitor systems availability, performance, and health status. The solution should be able among others functions to provide network and system troubleshooting and diagnosis and future planning.

2.2.3 Scope

The scope of the project shall include but not limited to the following:

1. Design, configuration, deployment and integration of the network and system monitoring tool on the KEFRI network.
2. Provide training and knowledge to KEFRI IT teams on the solution.

Table 40: TECHNICAL SPECIFICATIONS FOR INTEGRATED DATA CENTER INFRASTRUCTURE/ SMART RACKS FOR PRIMARY DATA CENTRE

S. No	Description of Requirements	Requirement	Bidder shall state as: Fully Compliant/ Not Compliant	Describe capabilities in line with the references
	MAKE (<i>Bidder State the make</i>)			
	MODEL: (<i>Bidder to state the model</i>)			
1	Scope of Work			
1.1	This specification covers intelligent integrated/inbuilt infrastructure, standalone system design, engineering, manufacture, assembly, testing at manufacturer's works, supply, delivery at site, unloading, handling, proper storage at site, erection, testing and commissioning at site of	Mandatory		

S. No	Description of Requirements	Requirement	Bidder shall state as: Fully Compliant/ Not Compliant	Describe capabilities in line with the references
	complete infrastructure for the proposed Data Centre as detailed in the specification, complete with all accessories required for efficient and trouble free operations			
1.2	Modular and scalable design for power and cooling: All the components used to design the system should be redundant and in the Events of failure the components can be maintained easily. All the components of the infrastructure should be such that it can be easily dismantled and Relocated to different location.	Mandatory		
2	Requirements			
2.1	Intelligent Integrated Infrastructure with inbuilt hot and cold aisle containment of 4 racks should cater IT load up to 20 KVA	Mandatory		
2.2	Intelligent Integrated Infrastructure essentially should include internal redundant or backup power supplies, environmental controls (Precision air conditioning, fire suppression, smoke detection, Water leak detection and humidity sensors), and security devices. Critical systems like UPS & Precision Air Conditioning should have N+N & N+1 redundant topology respectively.	Mandatory		

S. No	Description of Requirements	Requirement	Bidder shall state as: Fully Compliant/ Not Compliant	Describe capabilities in line with the references
	Environmental monitoring shall be done from IP based software.			
2.3	The detail specifications of the intelligent integrated/ inbuilt infrastructure, standalone system shall be in adherence to standard Data Centre guidelines thus shall be composed of multiple active power and cooling distribution paths, but only one path active. It shall have redundant components.	Mandatory		
3	The Intelligent integrated Infrastructure shall have following components: -			
3.1	In-Row closed loop Air-Conditioning			
3.1.1	Data center server and network racks should be equipped with In-row Variable / digital scroll cooling units to provide closed loop precision cooling system which should be able to cool the equipment's uniformly right from 1st U to 42nd U of Rack	Mandatory		
3.1.2	Precision Air Cooling units should be of minimum 12.5kW capacity in N+1 topology. Precision Air Conditioner should have following Features: <ul style="list-style-type: none"> • Cooling System should be DX (Variable) type in N+1 Topology • Inbuilt Heater and Humidifier to cater IT load up to 25kVA • Outdoor Unit 	Mandatory		

S. No	Description of Requirements	Requirement	Bidder shall state as: Fully Compliant/ Not Compliant	Describe capabilities in line with the references
3.2	UPS System			
3.2.1	<p>RACK UPS should be of 2 X 20 kVA in N+ N topology, with unity power factor and efficiency >96 %.</p> <p>Other features of UPS system are as follows:</p> <ul style="list-style-type: none"> • True On-line UPS with Widest input range (228V to 475V) • Double conversion and IGBT technology • Facility for remote monitoring • N+N redundancy should be provided. 	Mandatory		
	<p>DATA CENTRE MAIN UPS should be 1x50kVA in N+ 1 topology fitted with 25 Kva modules with unity power factor and efficiency >96 %.</p> <p>Other features of UPS system are as follows:</p> <ul style="list-style-type: none"> • True On-line UPS with Widest input range (228V to 475V) • Double conversion and IGBT technology • Facility for remote monitoring <p>N+N redundancy should be provided.</p>			
3.3	Power Distribution			
3.3.1	<p>Rack Power Distribution Unit, Basic Type-PDU-32A-1PH-20/4-B9-20*C13+4*C19-Full height vertical (each rack is having two PDU's)</p>	Mandatory		

S. No	Description of Requirements	Requirement	Bidder shall state as: Fully Compliant/ Not Compliant	Describe capabilities in line with the references
3.6	Blanking Panel: 70%	Mandatory		
3.7	Environmental Controls			
3.7.1	Each set of intelligent rack should include basic environmental controls: <ul style="list-style-type: none"> • Smoke Detector • Water Leak Detection system • Temperature/ Humidity Sensor • Door Sensor • Alarm beacon 	Mandatory		
3.7	U Space			
3.7.1	Intelligent racks should have Min 160 U(total) space available for IT equipment's and network equipment	Mandatory		
3.7.2	Racks			
	42 U racks of dimension 600 mm x 1000 mm, 4 numbers	Mandatory		
3.7.3	Monitoring			
3.8.1	<ul style="list-style-type: none"> • Temperature and humidity monitoring: Detects and collects statistics on the ambient temperature and humidity inside the smart module. Water leakage monitoring: Detects water leakage at the bottom of the smart module and provides real-time alarm signals. Smoke monitoring: Detects smoke in the smart module and provides real-time alarm signals. Smart cooling product monitoring: <ul style="list-style-type: none"> - Monitors the supply and return air temperature and humidity in real time. - Configures the supply air temperature set point in a 	Mandatory		

S. No	Description of Requirements	Requirement	Bidder shall state as: Fully Compliant/ Not Compliant	Describe capabilities in line with the references
	<p>unified manner, without the need to separately configure it for each smart cooling product.</p> <ul style="list-style-type: none"> - Monitors and displays the fan speed, and displays the running percentage. - Displays the cooling load rate. - Monitors and displays the compressor running status. - Displays the real-time running status of the heating and humidifying. - Video surveillance: Connects to four cameras and provides PoE power supply; accesses real-time video images on the WebUI and invokes historical monitoring data. 			
3.8.2	<p>Generates a 2.5D layout view that matches the actual layout of the smart module, including the power distribution module, smart cooling product, IT cabinet, and temperature and humidity sensor.</p> <p>Displays the real-time status and alarms of the aisle temperature and humidity sensor in the plan view.</p> <p>After logging in to the app installed on the tablet, can open the cabinet door on the corresponding screen.</p>	Mandatory		
3.8.3	<p>The system monitors the status of smart cooling products, power distribution, and environment. If a fault or parameter error occurs, the</p>	Mandatory		

S. No	Description of Requirements	Requirement	Bidder shall state as: Fully Compliant/ Not Compliant	Describe capabilities in line with the references
	<p>system generates an alarm in real time. Can view the alarm cause and solution in the alarm details.</p> <p>Alarms can be classified into four severities: critical, major, minor, and warning. The alarm severities can be user-defined.</p> <p>Active alarms can be filtered by device and alarm severity.</p> <p>Alarms can be linked with the eLight. The eLight light colors vary with alarm severities.</p> <p>Alarm notifications can be sent by email and SMS.</p> <p>A maximum of 500 concurrent active alarms are supported</p>			
3.8.4	<p>Historical alarm: Can view the alarms that have been generated in the system. The historical alarm information includes the device name, alarm name, alarm severity, alarm generation time, and alarm clearance time.</p> <p>Performance data statistics: Can view historical data of devices to help analyze data or problems.</p> <p>Operation log: Can view logs of key operations, such as user login, parameter modification, data export, device upgrade, and access control events.</p> <p>Data export: Can export historical data of the ECC800 and some southbound devices.</p>			

S. No	Description of Requirements	Requirement	Bidder shall state as: Fully Compliant/ Not Compliant	Describe capabilities in line with the references
3.8.5	Supports the linkage logic of aisle smoke alarms or high temperature alarms. the IT cabinet doors can opened automatically through linkage			
3.9	Other features:			
3.9.1	The Intelligent integrated infrastructure would provide much functionality and some of the key functionalities are Hot and cold aisles containment. The depth of the cold aisle is not greater than 250 mm. For energy saving and noise reduction, the hot and cold aisles containment.	Mandatory		
3.9.2	Critical Component's for Integrated Server Racks system (Rack, rack PDU, Cooling, UPS and monitoring system) should be from same & single OEM for Seamless Integration & better Service Supports	Mandatory		
3.9.3	Electrical Distribution board within Utility Cabinet to have fire detection & Novec Based Fire Suppression system	Mandatory		
3.9.4	Status based LED Lights within Smart Racks	Mandatory		
3.9.5	Electrical Distribution board within Utility Cabinet to have fire detection & Novec Based Fire Suppression system	Mandatory		

S. No	Description of Requirements	Requirement	Bidder shall state as: Fully Compliant/ Not Compliant	Describe capabilities in line with the references
UNINTERRUPTED POWER SUPPLY (UPS) SYSTEM				
S. No	Description of Requirements	Requirement	Bidder shall state as: Fully Compliant/ Not Compliant	Describe the Capabilities with References
3.10	Uninterrupted Power Supply (UPS) System			
3.10.1	General Description:	Mandatory		
	Supply, install, test and commissioning of true online, double conversion, high efficiency, and unity power factor The main Uninterruptible Power Systems (UPS) rated at 50 KVA & battery backup support for 240 minutes. The Rack Uninterruptible Power Systems (UPS) rated at 2 x 20 KVA. UPS & backup batteries should be supplied with the necessary arrangements to mount outside the cabinet.	Mandatory		
3.10.2	Rack UPS Configuration: 2 x 20kVA (N+N Redundancy) Main UPS Configuration: 2 x 25kVA (N+1 Redundancy)	Mandatory		
3.10.3	Scope			
3.10.3.1	<ul style="list-style-type: none"> The scope shall include design, supply, installation, testing and commissioning of the complete UPS system and related accessories including: <ul style="list-style-type: none"> All Server racks will get power feed from 2 x 20 KVA UPS systems to ensure redundancy. 	Mandatory		

S. No	Description of Requirements	Requirement	Bidder shall state as: Fully Compliant/ Not Compliant	Describe capabilities in line with the references
	<ul style="list-style-type: none"> • All systems should be tested in factory as per the manufactures recommended procedure for all operating parameters and the test results should be provided during the installation. • Delivery at site, unloading, handling, installation of complete system including interconnection from the UPS system to batteries and to input / output panels switches. All interconnections shall be done using multi-strand Flexible Copper conductor cables of appropriate sizes. • Scope includes battery bank connections and providing safety barriers for all bus bars and cable connection leads on battery racks. 			
	<ul style="list-style-type: none"> • Energizing of UPS and Battery bank commissioning. • UPS control parameters setting and complete testing of system on load. • Service backup by engineer till system is fully operational and subsequently training is to be provided to the concerned persons. • Any upgrade of the system hardware and associated other software during the warranty period should be supplied at free of charge. • Acceptance tests will be carried out after installation 			

S. No	Description of Requirements	Requirement	Bidder shall state as: Fully Compliant/ Not Compliant	Describe capabilities in line with the references
	<p>and the systems will be taken over only after successful completion of the acceptance tests.</p> <ul style="list-style-type: none"> • Operation and service manuals of the systems containing technical / Electronic drawings / circuit diagrams complete in all respects should be supplied. 			
3.10.3.2	<p>Specification / features of the Each UPS system are as follows:</p> <ul style="list-style-type: none"> • Widest input range • Output power factor up to 1 • Double conversion and IGBT technology Full IGBT Rectifier / Battery charger IGBT based Inverter • Double conversion efficiency up to 96.2% • ECO mode efficiency up to 99% • Integrated maintenance bypass • Integrated input and output breakers/switches • Parallel capability for capacity and redundancy 	Mandatory		
	<ul style="list-style-type: none"> • Compact footprint • Batteries to support combined 30 minutes full load backup • Facility for remote viewing • Communication features: <ul style="list-style-type: none"> o Voltage-free contacts o Intellislot for SNMP, Modbus or Relay communication o USB interface 			

S. No	Description of Requirements	Requirement	Bidder shall state as: Fully Compliant/ Not Compliant	Describe capabilities in line with the references
	<ul style="list-style-type: none"> Compatible with any building management system 			
3.10.4	UPS other technical specification			
	MAIN DATA CENTER UPS			
3.10.4.1	General			
	Ups Type	ON-LINE	Mandatory	
	Modular Base	Power Capacity chassis scalable to 50 kVA	Mandatory	
	UPS Maximum Load	18kw	Mandatory	
	UPS/Inverter Power Factor (P.F)	0.9	Mandatory	
	UPS Chassis Configuration Modes:	3/3, 3/1, 1/3, 1/1	Mandatory	
	MAINS INPUT			
	Input voltage	380V/220V±20%, 400V/230V±20%, 415V/240V±20%	Mandatory	
	Input frequency	50Hz±10%, 60Hz±10%	Mandatory	
	Power walk-in (Sec.)	60sec	Mandatory	
	THDI (%)	< 3%	Mandatory	
	Input PF	≥ 0.99	Mandatory	
	Maximum Input Current (A)	239	Mandatory	
	Bypass Input			
	Input voltage	380V/220V±20%, 400V/230V±20%, 415V/240V±20%	Mandatory	
	Input frequency	50 Hz, 60 Hz	Mandatory	
	Frequency Range	50 Hz±4%, 60 Hz±4%	Mandatory	

S. No	Description of Requirements	Requirement	Bidder shall state as: Fully Compliant/ Not Compliant	Describe capabilities in line with the references
	BATTERY			
	DC Input			
	Rated Input voltage	±384VDC	Mandatory	
	Input voltage tolerance	±345V~±440V DC	Mandatory	
	Maximum DC Current (A)	235	Mandatory	
	Stability of charging	±1%	Mandatory	
	Battery QTY per String	64 x 12V Battery Blocks	Mandatory	
	Cells per Battery Block (CellNo)	6	Mandatory	
	Battery management:	Battery discharge management, auto-transfer between floating and equal charging, temperature compensation	Mandatory	
	Battery Type	VRLA Sealed Lead Acid Maintenance Free Batteries	Mandatory	
	Battery design life years	10 Years Design Life	Mandatory	
	Battery Rated Capacity	70Ah 12V	Mandatory	
	Battery Strings Recharge	14 hours	Mandatory	
	Battery Manufacturer	Same as UPS Manufacturer	Mandatory	
	Battery Protection	Automatic Circuit Breaker / Fuses	Mandatory	
	DC Watts	11364	Mandatory	
	UPS Charge Current	6Amps	Mandatory	
	Runtime	240 Minutes	Mandatory	
	Total Battery AMPS Per Hour	70Ah	Mandatory	
	Watts per cell data for Battery Spec (TWPC)		Mandatory	

S. No	Description of Requirements	Requirement	Bidder shall state as: Fully Compliant/ Not Compliant	Describe capabilities in line with the references
		30.5 Watts/Cell		
	End of Discharge Voltage / CELL (EODV)	1.75 Volts/Cell	Mandatory	
	Batter Calculations to be shared	Chart or Excel	Mandatory	
	AC Output			
	Maximum AC Output Current (A)	239	Mandatory	
	Output voltage	380V/220V AC, 400V/230V AC, 415V/240V AC	Mandatory	
	Output frequency	±4%; ±0.2%(battery supply)	Mandatory	
	Output voltage stability	±1%	Mandatory	
	Output voltage	< 20ms (load 0~100% change)	Mandatory	
	Overload ability	Operate 10mins with 125% load	Mandatory	
	Transfer from mains to	0ms	Mandatory	
	Transfer from bypass to	<1ms	Mandatory	
	Peak Factor	03:01	Mandatory	
	Waveform distortion	≤ 1% (linear load), ≤ 3%(non-linear load)	Mandatory	
	Overall AC efficiency	≥ 96% (AC~AC), ≥ 99% (ECO Mode)	Mandatory	
	Overall DC efficiency	≥ 98% (DC~AC)	Mandatory	
	Load share precision	≤ 5%	Mandatory	
	ENVIRONMENT			
	Relative humidity	≤ 95% non-condensing	Mandatory	

S. No	Description of Requirements	Requirement	Bidder shall state as: Fully Compliant/ Not Compliant	Describe capabilities in line with the references
	Protection degree	IP30	Mandatory	
	Acoustic noise	≤ 55DB	Mandatory	
	Cabinet	Standard 19 inch cabinet	Mandatory	
	Monitor management	UPS supervisor	Mandatory	
	Interface	RS232, RS485 and 8 dry contact, TCP/IP adapter, SNMP	Mandatory	
	Display	Touch LCD/LED Screen	Mandatory	
EFFICIENCY				
	UPS / INVERTER DC TO AC EFFICIENCY (EFF)	96%	Mandatory	
	Battery Mode	98%	Mandatory	
	Eco Mode Efficiency	≥ 99%	Mandatory	
	Inverter efficiency	≥ 98%(DC-AC)	Mandatory	
MODULES				
	Module Capacity kVA/kW	25kW	Mandatory	
	Input / Output Mode	1/1, 3/1, 1/3, 3/3, (Ph + N + E)	Mandatory	
	Input Power Factor	±0.99	Mandatory	
	THDI	≥3%	Mandatory	
	Overload Ability	125% for 10 min, 150% for 1 min.	Mandatory	
	Max. Charging Power	2.5kW	Mandatory	
	Max. Heat Dissipation	475W	Mandatory	
	Standards	EN62040-1-1:2003 IEC60950-1:2001, EN 62040-1, EN 62040-2, EN62040-3	Mandatory	

S. No	Description of Requirements	Requirement	Bidder shall state as: Fully Compliant/ Not Compliant	Describe capabilities in line with the references
	Manufacturer Warranty	3 Years Repair or Replace	Mandatory	
IN RACK UPS SPECIFICATIONS				
	Capacity	20kVA	Mandatory	
	Input voltage range	Single-phase 80V AC~280V AC (80V AC~176V AC, the load is linearly derated between 40%~100%) Three-phase 138V AC~485V AC (138V AC~305V AC, the load is linearly derated between 40%~100%)	Mandatory	
	Rated input voltage	380V AC/ 400V AC /415V AC (three-phase)	Mandatory	
	Input frequency range	40Hz~70Hz	Mandatory	
	Rated capacity	20kVA	Mandatory	
	Output Rated voltage	380V AC/ 400V AC/ 415V AC (three-phase output. Can set the voltage level by setting the voltage level on the LCD.)	Mandatory	
	Power factor	0.9	Mandatory	
	Maximum efficiency	95%	Mandatory	

S. No	Description of Requirements	Requirement	Bidder shall state as: Fully Compliant/ Not Compliant	Describe capabilities in line with the references
	Overload capability	<p>When the mains mode is used and the 105%~125% load is used: 5min, the bypass is transferred to the bypass normally. If the bypass is abnormal, the output is cut off.</p> <p>When the mains mode is used and the 125%~150% load is used: 1min, the bypass is transferred to the bypass normally. If the bypass is abnormal, the output is cut off.</p> <p>When the mains mode is $\geq 150\%$ load: 0.1s, the bypass is transferred to the bypass normally. If the bypass is abnormal, the output is cut off.</p>	Mandatory	
	Dimensions (Height x Width x Depth)	430mmx130mmx757mm	Mandatory	
	Installation Mode	Rack-mounted	Mandatory	

S. No	Description of Requirements	Requirement	Bidder shall state as: Fully Compliant/ Not Compliant	Describe capabilities in line with the references
	Surge protection	Complies with IEC/EN60240-2. IEC/EN61000-4-5 YD/T1095-2000 YD/T944-2007 The AC input end meets the D surge protection requirements (poor, common-mode 5kA, 8/20μs).	Mandatory	
	Environment parameters		Mandatory	
	Newsletter	USB/ dry contact /Modbus/SNMP (Simple Network Management Protocol)	Mandatory	
	Operating temperature	0°C~40°C	Mandatory	
	Relative humidity	0% RH~95% RH, non-condensing	Mandatory	
	Maximum altitude	<1000m (1000m~4000m Reference IEC62040-3 Derating)	Mandatory	
	Storage and transportation temperature	-40°C~+70°C (battery pack: -20°C~+40°C)	Mandatory	

S. No	Description of Requirements	Requirement	Bidder shall state as: Fully Compliant/ Not Compliant	Describe capabilities in line with the references
3.10.4.8	MONITORING SOFTWARE	SNMP, Dry contact card, site monitoring / shutdown for multiple servers		
3.10.5	Installation and Configuration 1 The entire system shall be installed as per manufacturer's recommendations & instructions including all interconnections for supply & control circuits. 2 All components shall be clearly identified using labels including battery cells individually. 3 Services of authorized representative or manufacturer for supervision of installation, connections, testing, & adjustments shall be provided.	Mandatory		
3.10.6	Testing and Commissioning 1. Under supervision of manufacturer's representative all system functions, operations, protective features shall be Checked & pre-set to ensure compliance or specifications. 2. Test the system as per recommendations & test listed below 3. Simulation of malfunctions to verify protective device operations. 4. Duration of supply on emergency. Low battery voltage alarm & shutdown,	Mandatory		

S. No	Description of Requirements	Requirement	Bidder shall state as: Fully Compliant/ Not Compliant	Describe capabilities in line with the references
	<p>transfer & restoration of normal supply.</p> <p>5. Remote status & alarm tests.</p> <p>6. In case of test any shortfalls / faults, the same shall be rectified & test procedure shall be again repeated to establish satisfactory performance.</p>			
3.11	Rack Precision Air Conditioning Units of 12.5kW Capacity			
3.11.1	Configuration			
	<p>Supply, installation, testing and commissioning of air conditioner characterized by high efficiency, energy saving, high reliability, wide working conditions, wide power supply mode, high compatibility, intelligent monitoring, and convenient maintenance. Air-conditioning units designed specifically for high sensible heat ratio with variable cooling technique to match the low latent loads of systems to be installed in the integrated cabinet for effective and uniform distribution of cooling. It shall be specifically designed for service from the front and rear of the unit. The units shall be capable to be mounted between the racks or at the end of row. The unit shall modulate cooling capacity and airflow based on requirements.</p>	Mandatory		
3.11.2.1	<p>High efficiency and energy saving</p> <p>Name-brand efficient DC variable-frequency</p>	Mandatory		

S. No	Description of Requirements	Requirement	Bidder shall state as: Fully Compliant/ Not Compliant	Describe capabilities in line with the references
	<p>compressors air conditioners with high energy efficiency to achieve 20%–100% stepless speed adjustment to provide cooling capacity on demand, thereby greatly reducing energy consumption.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Six EC fans that use the horizontal air supply mode achieve in-cabinet cooling and support 30%–100% stepless speed adjustment. Precise control should be implemented over the supply air temperature and direction, thereby reducing energy consumption. <input type="checkbox"/> The air conditioners are connected over the FE port and networked through the MAC protocol bus to achieve teamwork control, which effectively saves energy. 			
	<p>High reliability</p> <ul style="list-style-type: none"> <input type="checkbox"/>The DC variable-frequency air conditioner greatly reduces the number of startup and shutdown times, reducing component failures and extending the lifespan of key components. <input type="checkbox"/>The air conditioner is designed for non-condensation at low loads to maintain the humidity below 80% at low loads (10% load at least) in a high-humidity environment 			

S. No	Description of Requirements	Requirement	Bidder shall state as: Fully Compliant/ Not Compliant	Describe capabilities in line with the references
	High compatibility <input type="checkbox"/> The air conditioner can be rack-mounted, which considerably decreases the cooling system footprint as it occupies only 10 U high space. Total cooling capacity ≥ 12.5 kW,			
	Intelligent monitoring <input type="checkbox"/> The monitoring unit should monitor the system and set parameters.			
3.12	Racks & Accessories			
	Rack Containment Frame is 42 U, 19" mounting type with standard Rack + Cold & Hot Aisle Containment	Mandatory		
	Rack frame is, scalable and modular with safe load carrying capacity of 1000 Kg	Mandatory		
	Color shade of Rack is RAL 7021	Mandatory		
	Base plinth with 100 mm height	Mandatory		
	Cable entry provision from top & bottom both side of rack	Mandatory		
	Cut outs with rubber grommet on top and bottom cover of rack for cable entry	Mandatory		
	Vertical Cable manager on both LHS & RHS on rear side	Mandatory		
	Each rack shall have front glass door for complete 42U height visibility & rear steel split door with integrated Biometric access control	Mandatory		
	Thermally insulated cold aisle chamber	Mandatory		
	Blanking panels to prevent air mixing	Mandatory		
	Fixed Shelf to be provided	Mandatory		

S. No	Description of Requirements	Requirement	Bidder shall state as: Fully Compliant/ Not Compliant	Describe capabilities in line with the references
	Plastic Cable duct on vertical LH & RH section of racks for cable routing	Mandatory		
	Gas spring to be provided on front doors of racks	Mandatory		
	Status based LED light to be provided on each rack	Mandatory		
	Each rack enclosure should be physically separated through caged partition at cold & hot aisle to avoid unauthorized access from one rack to another.	Mandatory		
3.13	Safety and Security Systems			
3.13.1	<p>Biometric Based Access Control</p> <p>The IP based Access Control System shall be used to serve the objective of allowing access to authorized personnel only. The system deployed will be based on Biometric Technology. The front & rear rack doors will be provided with magnetic locks and will operate on fail-safe principle through one common Biometric access control system. The system would be designed and implemented to provide following functionality:</p> <ul style="list-style-type: none"> • Configurable system for user defined access • Built-in Real Time Clock (RTC), calendar; complete Database stored locally and shall be capable of operating offline on standalone mode • Record, report and archive each and every activity (permission granted 	Mandatory		

S. No	Description of Requirements	Requirement	Bidder shall state as: Fully Compliant/ Not Compliant	Describe capabilities in line with the references
	and / or rejected) with log formats <ul style="list-style-type: none"> • Fail safe operation in case of no-power condition and abnormal condition such as fire, theft, intrusion, loss of access control, etc. • At the biometric reader, user presents the finger to the biometric reader which is unique to each employee. The pattern is read and compared with stored data to grant / deny access. 			
3.14	Monitoring			
	Supply and installation monitoring system with Sensors & notification system. The system shall continuously collect critical information from network connected devices such as UPS system, Cooling Units, temperature & humidity sensors, Door sensors, Water Leak sensor and other dry contact monitoring. Beacon & Buzzer-Sound and Flash Led Alarm. Based on pre-set parameters, automated email alerts are sent to the intended recipients	Mandatory		
3.14.1	Intelligent Rack environment remote monitoring	Mandatory		
3.14.2	Modbus 485 Communications	Mandatory		
3.14.3	SNMP Communication	Mandatory		
3.14.4	Single window for monitoring all sensors	Mandatory		
3.14.5	Data and logs of historical information of alarms and notification	Mandatory		

S. No	Description of Requirements	Requirement	Bidder shall state as: Fully Compliant/ Not Compliant	Describe capabilities in line with the references
3.14.6	Temperature & Humidity Sensor, with LCD display and RJ45 connector	Mandatory		
3.14.7	Door opening sensor with RJ45 connector	Mandatory		
3.14.8	Water leak detection sensor with RJ45 connector	Mandatory		
3.14.9	Smoke detection sensor with RJ45 connector	Mandatory		
3.14.10	Alarm device with LED flash and sound option	Mandatory		
5	Data Centre Physical Security – Fire-rated Door, Access Control & CCTV	Mandatory		
5.1	Fire rated main entrance door – 2Hrs – 2100mm x 1200mm	Mandatory		
5.2	The data centre should have an independent access control Systems with capability to support both PIN and biometrics.	Mandatory		
5.3	The data centre should have an integrated CCTV system from the existing main facility & NOC	Mandatory		
8	Networking and Rack level connectivity	Mandatory		
8.1	Blanking panels for server racks where there are no equipment installed.	Mandatory		
8.2	Fiber Cable (minimum laser-optimized 50microns; multimode fiber with minimum of 24 cores)	Mandatory		
8.3	Data Cable Management beneath the ceiling separate for UTP and Fibre	Mandatory		
8.4	Install CAT 6A structured cabling 50 dual network points for the entire wing. This should include, Metallic trunkings, Face plates,	Mandatory		

S. No	Description of Requirements	Requirement	Bidder shall state as: Fully Compliant/ Not Compliant	Describe capabilities in line with the references
	modules, patch panels and e.t.c All the networking accessories should be supplied based on the best installation standards.			
8.5	Relocation of the Main network cabinet including fiber relocation and switches.	Mandatory		
9	EMS	Mandatory		
9.1	EMS tools for monitoring the facility, racks and devices in them	Mandatory		
9.2	Various key parameters should be displayed in 2 x 60" monitor strategically placed within the NOC area. (Internet capacity to be provision by KEFRI + Local Email SMTP Server and details of Server Port. When using SSL, you need to ensure that the Email server supports SSL function.)	Mandatory		
11	Training			
11.1	User Training for each installed equipment and devices should be undertaken	Mandatory		
11.2	Training Plan should be supplied	Mandatory		
11.3	Facility Operators Training for the KEFRI Team (4 Staffs) -	Mandatory		
12.	Cleaning			
	<ul style="list-style-type: none"> On completion of installation, testing of the system all components, cabinets etc. shall be cleaned & unwanted material, debris shall be removed from site 	Mandatory		

S. No	Description of Requirements	Requirement	Bidder shall state as: Fully Compliant/ Not Compliant	Describe capabilities in line with the references
	<ul style="list-style-type: none"> Scratches dents if any shall be cleaned & touched up to match the original finish Cable and electric wire should be arranged in a way that minimize the physical tempering with the existing infrastructure and should be properly managed maintaining the aesthetics 			
13	Maintenance and Support			
	<p>After Sale Service</p> <ul style="list-style-type: none"> Service shall be guaranteed by supplier during defect liability period / guarantee period. Product OEM shall offer the Data Centre with 24 x 7 services through their authorized service engineer during defect liability period / guarantee period. Product OEM shall provide ON SITE warranty from the date of taking over of the equipment after the acceptance tests. 	Mandatory		
	<ul style="list-style-type: none"> Basic training and operational training to be provided after the successful installation of the system. Quarterly PM to be carried out during the warranty period. SLA for 3 Years should be included. 			

Table 41: Distribution Switch (Layer 3) and Firewall

HA NGFW & HA Core Switch		
TECHNICAL REQUIREMENT	Complied (YES/NO)	Response Description of specifications (indicate reference document page number/section/Link/table/figure, where the specific item is addressed)
3RD PARTY REPORTS		
The Vendor of the proposed solution MUST be in the Leaders Quadrant of Gartner magic quadrant for Enterprise Network Firewalls (Up to 2020)		
The Vendor MUST have attained Champion status in the Canals Cybersecurity Leadership Matrix 2020		
The Vendor MUST be a leader in the Forrester Wave Enterprise Firewalls, 2020		
The Vendor MUST have attained the Highest Security Effectiveness and 100% evasions block rate in the 2019 NSS Labs Next Generation Firewall Test Report		
FUNCTIONAL REQUIREMENTS		
The solution must be managed from a centralized management center offering complete visibility and correlation		
NGFW should have on-box reporting and logging facility. The solution should not consider external reporting/log analyzer engine		
The proposed solution should be able to handle at least 500 concurrent Users to allow visibility into the reliability and vitality of the KEFRI network security solution.		
The NGFW platform shall handle traffic in a single pass stream-based manner with all security features turned on		
The NGFW platform should be optimized for layer 7 application level content processing and have special FPGA chips to handle signature matching and processing in a single pass parallel processing architecture		
Unlimited Concurrent User License		
SSH Decryption for all application traffic, and ability to block any		

unknown encrypted standard		
Identify users, not just IP addresses. Leverage information stored in Active Directory for visibility, policy creation, reporting, and forensic investigation.		
Inspect content in real-time. Protect the network against attacks and malware embedded in application traffic at low-latency, high throughput speeds., all signatures over 6 Million plus applied at the same time		
The proposed NGFW must be licensed for IPS, Anti-virus, Anti-spyware, Cloud based malware analysis, DNS Security & URL Categorization and Filtering.		
OPERATION MODE		
The proposed firewalls shall support policy-based Network Address Translation (NAT) and Port Address Translation (PAT) and able to operate in routing/NAT mode.		
The proposed firewalls shall support Denial of Service (DoS) and fragmented packet Transmission Control Protocol (TCP) reassembly, brute force attack, "SYN cookie", "IP spoofing" and malformed packet protection.		
The proposed firewalls shall support transparent and tap mode within the appliance.		
The proposed firewalls shall support standards-based link aggregation (IEEE 802.3ad) to achieve higher bandwidth.		
The proposed firewalls shall support IPv6 routing for virtual routers.		
QoS Policy-based traffic shaping (priority, guaranteed, maximum)		
QoS Policy-based diffserv marking		
QoS Policy-based on application category, users/groups or any combination		
The proposed firewalls shall support <i>in-box logging and reporting mechanism</i> to generate comprehensive reports like "but not limited to" (User Activity Reports, Top Applications, Top Attackers, Top victims, Applications running in port 80...)		

Firewall should support Voice based protocols (H.323, SIP, SCCP, MGCP etc.)		
Should identify at least 2000+ commercial applications		
The firewall should be capable of identifying and optionally preventing the transfer of various files (i.e. MS Office, PDF, etc.) via identified applications (i.e. P2P, IM, SMB, etc.)		
Support Geographical Location policy in a security rule, where connections going to a country or countries can be blocked		
Policy support of IPv6 rules/objects, multicast rules/objects, scheduled time of day enablement		
Should support XML API that would allow the firewall to be integrated with any known NAC, and WLAN controllers for user identification		
Should Integrate user-identification allowing RADIUS groups, or users to access a particular application, while denying others		
THREAT PREVENTION		
Block viruses, spyware, malware and network worms and vulnerability exploits within content of application content		
Block buffer overflow attacks		
Block DoS/DDoS attacks; it shall support Denial of Service (DoS) and fragmented packet Transmission Control Protocol (TCP) reassembly, reconnaissance attacks, brute force attack, "SYN cookie", "IP spoofing" and malformed packet protection.		
Supports attack recognition for IPv6 & IPv4		
Stream-based protection and scanning for Anti-Virus & Antispyware		
Built-in Signature and Anomaly based IPS engine		
Ability to create custom user-defined signatures		
Supports CVE-cross referencing where applicable		

Supports automatic security updates directly over a secure connection (i.e. no dependency of any intermediate device)		
SYSTEM PERFORMANCE AND SCALING REQUIREMENTS		
The Tenderer shall propose a Next Generation Firewalls for security (QTY 2) and shall support active/active High Availability (HA) configuration		
The NGFW must have separate management plane (for configuration, logging and reporting) and data plane to avoid any disruption to traffic processing while managing the appliance or generating logs reports (for Security, Signature, and Network Processing APP-ID, User-ID, URL match, policy match, app decoding SSL/IPsec, decompression, flow control, route lookup MAC lookup, QoS and NAT. This physical separation must be with a dedicated (and not shared with the forwarding plane)		
The Next Generation Firewalls must deliver at least HTTP/appmix of 2/2 Gbps of firewall throughput measured with App-ID and logging enabled, using 64 KB HTTP/appmix transactions		
The Next Generation Firewalls must deliver Threat Prevention throughput (HTTP/appmix) of 1/1 Gbps measured with App-ID, IPS, antivirus, anti-spyware, sandboxing, file blocking, and logging enabled, utilizing 64 KB HTTP/appmix transactions.		
IPsec VPN throughput 1.5 Gbps		
Connections per second: 13,000		
Max sessions (IPv4 or IPv6): 130,000		
The Firewalls must support at least 19,000 concurrent decryption sessions		
The Next Generation Firewalls MUST support App-ID firewall throughput of at least 2.0 Gbps		
The proposed firewall must have 240GB SSD for logs Storage		
The Solution must have at least the following Minimum Policies requirement: Security rules 1,500		

Security rule schedules 256 NAT rules 3,000 3,000 Decryption rules 150 App override rules 100 Tunnel content inspection rules 250 SD-WAN rules 100 Policy based forwarding rules 250 Captive portal rules 500 DoS protection rules 250 Security Zones: Max security zones 40		
SSL Decryption: Max SSL inbound certificates 100 SSL certificate cache (forward proxy) 2,000 Max concurrent decryption sessions 19,200 SSL Port Mirror Yes		
Interfaces Management - out-of-band (10/100/1000, RJ45/Micro USB console) Management - 10/100/1000 high availability 2 Traffic - 10/100/1000 4 Traffic - 1Gbps SFP 4/8 Maximum aggregate interfaces 6 Maximum SD-WAN virtual interfaces 500		
QoS Number of QoS policies 500 Physical interfaces supporting QoS 12 Clear text nodes per physical interface 31 DSCP marking by policy Yes Sub interfaces supported 1,024		
Client VPN: Max tunnels (SSL, IPsec, and IKE with XAUTH)- 1,000		
Clientless VPN: Max SSL tunnels 200		
USER IDENTIFICATION:		
Should support the following authentication services for user- identification: -		

<ul style="list-style-type: none"> i. Active Directory ii. Exchange iii. LDAP iv. eDirectory v. Radius vi. Karberos vii. Client Certificate viii. Captive Portal ix. Terminal Server x. Supports the creation of security policies based on Active Directory Users and Groups in addition to source/destination IP xii. Populate all logs with user identity (traffic, IPS, URL, data, etc.) xiii. Logged user-identification correlated in real-time 		
<ul style="list-style-type: none"> b. Should support REST XML API that would allow the firewall to be integrated with any known NAC, and WLAN controllers for user identification 		
<ul style="list-style-type: none"> c. Should support built in syslog server for collecting user identification logs from unix, and any network controller (WLAN, NAC) for user identification 		
POLICY BASED CONTROLS		
<p>1.13.1 The proposed firewalls shall support the following attributes before tacking an Allow/Deny action:</p>		
<ul style="list-style-type: none"> a. Policy control by port and/or protocol; 		
<ul style="list-style-type: none"> b. Policy control based on application or application category; 		
<ul style="list-style-type: none"> c. Policy control based on user or user group; 		
<ul style="list-style-type: none"> d. Policy control based on IP address; 		
<ul style="list-style-type: none"> e. Policy control by country code; 		
<ul style="list-style-type: none"> f. Per policy Secure Shell (SSH) decryption and inspection; 		
<ul style="list-style-type: none"> g. IPv6 rules/objects; and 		
<ul style="list-style-type: none"> h. Multicast rules/objects 		
DNS SECURITY		
<ul style="list-style-type: none"> Domain Generation Algorithms (DGA), DNS tunneling and Command & Control (C2) detection made capable 		

by machine learning, enabling identification of threats hidden within DNS traffic		
DGA analysis to determine whether a domain is likely to have been generated by a machine		
Identification and blocking of previously unknown DGA-based threats in real-time		
DNS tunnel detection using machine learning to analyze the behavioral qualities of DNS queries		
Must be able to detect C2 and data theft hidden in DNS tunnels and to automatically block it		
DNS signatures and protection must be cloud-based		
Domain signatures and protection must utilize multiple threat intelligence sources, including traffic sandbox analysis, passive DNS, active web crawling & malicious web content analysis, URL sandbox analysis, HoneyNet, DGA reverse engineering, telemetry data, whois, threat research organizations and third-party data sources		
Updates to the analysis, detection, and prevention capabilities of the DNS security service must be available through regular content releases		

Table 42: Access Switches

Description	Complied (C) /Not Complied (NC)/Partially Complied (PC)	If complied Bidder's MUST provide explanation of compliance with reference to datasheet or bill of materials with the specific page number and section of the reference
Access Switch Management		
All the switches shall use the same Network Operating System, with matching CLI commands and an embedded Web-based GUI that shall allow configuration of every configuration item.		
Switches shall propose a linux-like CLI (cd, pwd, cp, mv, rm, vi, ls...).		
Every switch shall support the following remote access methods: FTP, SCP, SSH(v2)/SFTP, Telnet, TFTP.		
Every switch shall support Multiple software images and configurations with fallback recovery. A reboot of any switch may be initiated with a time-out programmable rollback, allowing automatic fallback to a safe configuration and/or software image.		
Every switch shall support disaster recovery and upload/download image files through USB device.		
Every switch shall support RMon Base, sFlow Base, Switch Logging and Syslog.		
Every switch shall support Port Mirroring: Policy Based Mirroring - Remote Port Mirroring.		
Every switch shall support Unidirectional Link Detection (UDLD) and Digital Diagnostic Monitoring (DDM), allowing real-time diagnostics of fiber connections for early detection of optical signal deterioration.		
Every switch shall support 802.1AB Link Layer Discovery Protocol (LLDP) with MED extensions for automated device discovery.		
Every switch shall support Multiple VLAN Registration Protocol (MVRP) for IEEE		

Description	Complied (C) /Not Complied (NC)/Partially Complied (PC)	If complied Bidder's MUST provide explanation of compliance with reference to datasheet or bill of materials with the specific page number and section of the reference
802.1Q-compliant virtual LAN (VLAN) pruning and dynamic VLAN creation.		
Every switch shall support Network Time Protocol (NTP) for network-wide time synchronization.		
Every access switch shall support an autoQoS feature for switch management traffic and traffic from IP phones.		
Every access switch shall support remote auto-configuration download easing and automating provisioning of edge switches.		
Routing and Multicast		
Every switch shall be wire-rate non-blocking for switching (latency < 4 microseconds) and routing.		
Every switch shall support 4000 VLANs and IEEE 802.1q standard.		
Every switch shall support 1500 system policies		
Every switch shall support 16k MAC Addresses.		
Every switch shall support a switch capacity of 160 Gb/s on the 24 Port and 200 Gb/s on the 48 port and 240 Gb/s on the 10 port		
Every switch shall support a switch frame rate of 120 Mpps on the 24 Port and 160 Mpps on the 48 port and 200 Mpps on the 10 port		
Every switch shall support at least static routing and RIP (v1 & v2 for IPv4, next generation for IPv6).		
Every switch shall support at least 256 IPv4 and 128 IPv6 routes		
Every switch shall support at least 128 IPv4 and 16 IPv6 router interfaces		
Access switches should support OSPF		

Description	Complied (C) /Not Complied (NC)/Partially Complied (PC)	If complied Bidder's MUST provide explanation of compliance with reference to datasheet or bill of materials with the specific page number and section of the reference
Every switch shall support IGMPv1/v2/v3 snooping for optimized multicast traffic.		
Every switch shall support Multicast Listener Discovery (MLD) v1/v2 snooping.		
Every switch shall support at least 1000 multicast groups		
Every switch shall support Multicast VLAN (IPMVLAN)		
Resiliency and high availability		
Every switch shall support 802.1d STP Spanning Tree Protocol.		
Every switch shall support 802.1w Rapid Spanning Tree Protocol.		
Every switch shall support 802.1s Multiple Spanning Tree Protocol.		
Every switch shall support Per-VLAN spanning tree (PVST+)		
Every access switch shall support Dual Home Link (DHL) for link protection without Spanning Tree protocol.		
Every switch shall support Link Aggregation – Static and LACP (802.3ad).		
Every switch shall support broadcast and multicast storm control to avoid degradation in overall system performance.		
Every switch shall support TU-T G.8032/Y.1344 2010: Ethernet Ring Protection (ERPV2)		
Every switch shall support LLDP (802.1ab)		
Every switch shall support Virtual Chassis InService Software Upgrade (ISSU)		
Every switch shall support Virtual Chassis 1+N redundant supervisor manager		

Description	Complied (C) /Not Complied (NC)/Partially Complied (PC)	If complied Bidder's MUST provide explanation of compliance with reference to datasheet or bill of materials with the specific page number and section of the reference
Access Switch Security		
Every switch shall support Auto-sensing IEEE 802.1X multi-client, multi-VLAN MAC-based authentication for non-802.1X hosts.		
Every access switch shall support an embedded NAC framework for comprehensive user-policy-based network access control.		
Every access switch shall support centralized RADIUS for device authentication and network access control authorization.		
Every access switch shall support Web-based authentication (Captive Portal): A customizable web portal residing on the switch that can be used for authenticating supplicants as well as non-supplicants.		
Every switch shall support Centralized RADIUS and LDAP administrator authentication.		
Every access switch shall support dynamic change of authentication (CoA) and enforcing traffic remediation or restriction for noncompliant devices.		
Every access switch shall support automated assignment of QoS and Security based on MAC address (range) or IP address (range), preferably using the concept of configurable Network Profiles holding QoS and Security parameters, and which are dynamically assigned.		
Every switch shall support ARP Defense Optimization.		
Every switch shall support ARP Poisoning Detect.		
Every switch shall support IP DoS Filtering.		

Description	Complied (C) /Not Complied (NC)/Partially Complied (PC)	If complied Bidder's MUST provide explanation of compliance with reference to datasheet or bill of materials with the specific page number and section of the reference
Every switch shall support MACSec encryption to secure the network edge: 1G/2.5G user and 10G up-link ports		
Every switch shall support user authentication with Access Guardian (IEEE 802.1x/MAC/captive portal) with Host Integrity Check (HIC) enforcement		
Every switch shall support the deployment of comprehensive and secure BYoD services in enterprise networks such as guest management, device on-boarding, device posturing, application management and dynamic change of authentication (CoA).		
Access Switch Convergence		
1. Every PoE capable switch shall support IP phones and WLAN access points, as well as any IEEE 802.3af and IEEE 802.3at-802.3bt compliant end devices.		
2. Every PoE capable switch shall allow configuring per-port PoE priority and max power for power allocation.		
3. Every PoE capable switch shall support dynamic PoE allocation: Delivering only the power needed by the powered devices (PD) up to the total power budget for most efficient power consumption.		
4. Every PoE capable switch shall support PoE power negotiation via LLDP MED TLV extensions.		
5. Every switch shall support eight hardwarebased queues per port for flexible QoS management.		
6. Every switch shall support Flow-based QoS with internal and external (remarking) prioritization.		
7. Every switch shall support Flow-based bandwidth management, ingress rate limiting; egress rate shaping per port.		

Description	Complied (C) /Not Complied (NC)/Partially Complied (PC)	If complied Bidder's MUST provide explanation of compliance with reference to datasheet or bill of materials with the specific page number and section of the reference
8. Every switch shall support Configurable scheduling algorithms, including Strict Priority Queuing (SPQ), Weighted Round Robin (WRR) and Deficit Round Robin (DRR).		
9. Every switch shall support Airgroup Network Services for Bonjour speaking devices provides consistent experience over wireless and wired networks		
10. Every switch shall support deployment with automated switch setup and		
11. configuration and end-to-end virtual LAN (VLAN) provisioning		
Management		
1. Intuitive CLI in a scriptable BASH environment via console, Telnet or Secure Shell (SSH) v2 over IPv4/IPv6		
2. Every switch shall support Network Automation and Programmability Abstraction Layer with Multivendor (NAPALM) support		
3. Every switch shall support Fully programmable RESTful web services interface with XML and JSON support. API enables access to CLI and individual MIB objects		
4. Every switch shall support File upload using USB, Trivial File Transfer Protocol (TFTP), FTP, SFTP or secure copy (SCP) over IPv4/IPv6		
5. Every switch shall support Non-volatile memory for start-up configuration		
6. Every switch shall support Multiple microcode image support with fallback recovery		
7. Every switch shall support Dynamic Host Configuration Protocol (DHCP) relay for IPv4/IPv6		
8. Every switch shall support IEEE 802.1AB Link Layer Discover Protocol (LLDP) with Media Endpoint Discover (MED) extensions		
9. Every switch shall support NTP		

Description	Complied (C) /Not Complied (NC)/Partially Complied (PC)	If complied Bidder's MUST provide explanation of compliance with reference to datasheet or bill of materials with the specific page number and section of the reference
10. Every TOR switch shall support Access to the console via USB Adapter with Bluetooth technology to provide wireless management, eliminating the use of console cables		
11. Every switch shall support ARP poisoning detection.		
Quality of Service (QoS)		
1. Every switch shall support Priority queues: Eight hardware-based queues per port		
2. Every switch shall support Traffic prioritization: Flow-based QoS		
3. Every switch shall support Flow-based traffic policing and bandwidth management		
4. Every switch shall support 32-bit IPv4/128bit IPv6 non-contiguous mask classification		
5. Every switch shall support Egress traffic shaping		
6. Every switch shall support Lossless Virtual Output Queuing (VOQ) with configurable scheduling algorithms		
7. Every switch shall support DiffServ architecture		
8. Every switch shall support Congestion avoidance: Support for end- to-end head-of-line (E2EHOL) blocking prevention, IEEE 802.1Qbb Priority-based Flow Control (PFC) and IEEE 802.3x Flow Control (FC)		
Monitoring and Troubleshooting		
1. Every switch shall support Local (on the flash) and remote server logging (Syslog): event and command logging		
2. Every switch shall support IP tools: ping and trace route		
3. Every switch shall support Dying Gasp support via SNMP and syslog messages		
4. Every switch shall support Loopback IP address support for management per service		
5. Every switch shall support Management virtual routing and forwarding (VRF) support		

Description	Complied (C) /Not Complied (NC)/Partially Complied (PC)	If complied Bidder's MUST provide explanation of compliance with reference to datasheet or bill of materials with the specific page number and section of the reference
6. Every switch shall support Policy- and portbased mirroring		
7. Every switch shall support Remote port mirroring		
8. Every switch shall support sFlow v5 and Remote Monitoring (RMON)		
9. Unidirectional Link Detection (UDLD), Digital Diagnostic Monitoring (DDM), and Time Domain Reflectometry (TDR		

Table 43: NOC Technical Description

Functionality	Requirement	Bidder shall state as: Fully (Compliant/ Not Compliant)	Describe the Capabilities with References
Discovery	Mandatory		
The Solution shall support Automated Discovery & Mapping with Layer 2/3 discovery identification of all of the devices on the network including routers, switches, servers, access points and more.			
Availability & Status	Mandatory		
The monitoring solution must support continuous monitoring and Management of Infrastructure availability/performance of infrastructure from routers, switches; monitor anything with an IP address that can be accessed with standard monitoring protocols including ICMP, SNMP, WMI and SSH.			
Performance Monitoring	Mandatory		
The Solution Must support			

Functionality	Requirement	Bidder shall state as: Fully (Compliant/ Not Compliant)	Describe the Capabilities with References
Performance Monitoring to capture actual performance metrics like CPU and Memory utilization. For instance, the CPU utilization on a Switch is at 55%.			
Alerting	Mandatory		
The solution must provide real-time alerts via email, text, Slack and logging. It should support an alert when a device or monitor changes state (e.g., from an up state to a down state) or when a performance threshold is exceeded – for example, when memory utilization exceeds 50 percent.			
Reporting	Mandatory		
The solution must deliver an easy-to-customize reporting environment where users can select from hundreds of out-of-the-box views or easily create drag-and-drop dashboards that provide a quick assessment of overall IT health – even detailed drill-down dashboards to isolate the root causes of performance problems.			
Inventory	Mandatory		
The Solution must support integrated inventory reporting including hardware inventory, reports on installed software and updates, warranty reports, and more.			
Advanced Monitoring (WMI, SSH, HTTPS)	Mandatory		

Functionality	Requirement	Bidder shall state as: Fully (Compliant/ Not Compliant)	Describe the Capabilities with References
The Solutions must monitor anything with an IP address that can be accessed with standard monitoring protocols including ICMP, SNMP, WMI and SSH.			
Wireless Monitoring	Mandatory		
The Solution must Discover and monitor the dependencies between wired and wireless networks.			
Storage Monitoring	Mandatory		
The Solution must monitor storage devices and more.			
Network Traffic Analysis	Mandatory		
The Solution must Monitor and set threshold-based alerts on network traffic, transmit netflow and bandwidth usage			
Hardware Requirements	Mandatory		
<p>The hardware to support the above software requires servers, databases storage and TV Screen for active monitoring of system and network performance.</p> <ul style="list-style-type: none"> • 1*Server (<i>Operating System: Microsoft Windows Server Server 2012 R2 (64-bit), 2016 and 2019;, Processor: Quad-Core 2.6 GHz, Memory: 16 GB; Storage (installation): 64 GB; NIC: 100 Mbps; Database: SQL Server 2017 Express included by default</i>) • 1*75'' LED monitoring screens for active monitoring of network and systems elements to be mounted at the technical support center/office. 			

Functionality	Requirement	Bidder shall state as: Fully (Compliant/ Not Compliant)	Describe the Capabilities with References
<ul style="list-style-type: none"> 1*PC with i7 processor, 8GB RAM, 500GB HDD, with mouse, keyboard and monitor 			
The solution MUST be able to support MORE THAN the number of nodes indicated in the table above. The nodes indicate the minimum baseline.			

Table 44: NOC Monitoring Screens Specification

ITEM		NOC MONITORING SCREEN
	PARAMETERS	REQUIRED
1	Display Device	(OLED / LCD)LCD
2	Screen Size	(Inch)-65
3	Resolution	3840 x 2160
4	Nano Cell Display	Yes
5	IPS Panel (only for LCD series, including IPS 4K and IPS 4K Display)	Yes
6	Viewing Angle	Wide Viewing Angle
7	Panel Type	M+
8	BLU Type	Edge
9	Video (Picture Quality)	
10	True Motion / Refresh Rate	100/50 Hz
11	HDRHDR	Active with Dolby vision
12	HDR	Dolby Vision
13	HDR	HDR10Yes
14	HDR	HLG
15	Wide Color	Gamut Nano Cell Display
16	Dimming	Local Dimming
17	Dimming	(Module Spec.)6
18	Black Nano	Dot Black
19	Ultra-Luminance Ultra Luminance	Ultra-Luminance
20	Color Master Engine	Yes
21	Color Master Engine	Upscaler4K
22	Color Master Engine	True Color Accuracy
23	Color Master Engine	Active Depth Enhancer

SUPPLY, DELIVERY, INSTALLATION, CONFIGURATION AND COMMISSIONING OF THREE 3 NO. SERVERS

The awarded bidder must ensure that the servers supplied, installed configured and commissioned is per specification herein mentioned in the tender document;

- The Bidder to ensure that the proposed equipment / components must not be declared “End of Life” within the next 7 years from the date of purchase.
- The Bidder should have back to back arrangement with the OEM so that KEFRI will be able to log a call with the OEM directly for the contract period of 24 months.
- The Bidder should have contact center (central or location wise) in order to log the calls on 24x7x365. They should also provide onsite support on 24x7x365 basis. The contact center numbers should be provided to the KEFRI along with the escalation matrix mentioning the contact person’s name, number and designation in the company.

Bidder would be responsible of operations and maintenance of the entire solution **for the contract period.**

The following services should be provided by Bidder:

- Bidder will be responsible for the generation and submission of necessary documentation required in all phases. Review and approval of the KEFRI is required on all such documentation before commencement of activity.
- Bidder shall document the baseline configurations for all equipment & facilities and get it approved from department prior to commencement of installation. Bidder shall develop and implement a system to maintain these configurations and ensure adequate controls for change management process on an ongoing basis.
- The bidder will be responsible for maintaining the required performance levels for the entire infrastructure implemented during all three phases of the project.
- Bidder should ensure that all the software, hardware, peripherals, accessories, sub-components required for the functionality and completeness of the solution, including but not limited to devices, equipment, accessories, patch cords (copper/fibre), cables, software, licenses, tools, etc. should also be provisioned.
- The system software licenses shall be genuine, perpetual, full use and should provide patches, fixes, security updates directly from the OEM at no additional cost to KEFRI for the entire period of contract
- All the software licenses that the Bidder proposes should be perpetual software licenses. The software licenses should not be restricted based on location and KEFRI should have the flexibility to use the software licenses for other requirements if required.
- The Bidder shall be responsible for providing the perpetual licenses so as to maintain the solution and source code (customized / extension) to the KEFRI.
- All the licenses and support should be in the name of KEFRI
- Bidder should ensure that the Annual Maintenance Support for the software and hardware components is provided for the period from date of deployment of the software and hardware component till the end of contract period. Annual Maintenance support should include patches, updates and upgrades of the software and hardware components. Bidder should ensure that there is a comprehensive onsite warranty / support arrangement for the aforementioned period with all the OEMs.

- Bidder should ensure that none of the components and sub-components is declared end-of-sale or end-of-support by the respective OEM for a period of at least two years from the time of submission of bid. If, the OEM declares any of the products / solutions end-of-sale subsequently, Bidder should ensure that the same is supported by the respective OEM from its date of deployment till the end of the contract period.
- Considering the criticality of the infrastructure, bidder is expected to undertake a detailed assessment of the site, identify the solution requirements to ensure no single point of failure with high availability. The bidder should provide compatible ICT infrastructure to ensure high redundancy and resilience solution.
- If a product is not supported by the OEM for any reason whatsoever, from the effective date of Contract till the end of the contract period, Bidder should replace the products/solutions with an alternate that is acceptable to the KEFRI at no additional cost to the KEFRI and without causing any performance degradation and/or project delays
- Bidder should meet all the defined acceptance and operations criteria for each phase of the project covering the proposed solutions.
- It is expected that Bidder will provide an integrated solution after due consideration to the compatibility issues between various components and existing internal systems. If there is a problem with compatibility between components, Bidder should replace the components with an equivalent or better component that is acceptable to the KEFRI at no additional costs to the KEFRI and without any project delays.
- Bidder should provide minimum One hard and One soft copies of all the reports, manuals, documentation, including but not limited to, detailed operations manual, maintenance manual, administration manual, etc. for each and every equipment / component proposed as part of this tender. The documentation should be supplied for Installation, Maintenance, Servicing and operations of equipment / components.
- Bidder should arrange for desktops / workstations / laptops, printers and other peripherals and consumables for its team members deployed.
- Bidder should have to arrange for necessary tools for defect tracking, defect logging, etc. to deliver the complete software development and maintenance services.
- OEM's of all equipment / components under servers and storage, networking equipment, etc. mentioned by the bidder as per BOM, should have been in the leader's quadrant as per last two Gartner's report for that equipment / component. Evidence for the same also needs to be provided by the bidder in the bid.

Table 45: Server Technical Specifications

Item	Description of Item Requirement	Complied (C) /Not Complied (NC)/ Partially Complied (PC)	Bidder Response/Reference
Rack Servers - Qty 3			
Form factor	Proposed Servers must be Rack mountable in a standard rack/ 1U rack server		
Processors	10 th Generation Intel® Xeon® Gold Scalable processors , up to 205 W 4* CPU - 16C, 32 T 2.3 GHz per CPU		
Memory	128GB (DDR4 DIMM slots, 2933 MT/s; up to 12 Intel® Optane™ PMem modules (100 series), 2666 MT/s)		
Storage Capacity	10TB (2.5-inch NVMe SSDs)		
Chipset platform	Intel C622		
RAID Support	RAID 0, 1, 10, 5, 50, 6, or 60 Configured with a supercapacitor for power-off protection for the cache (optional) RAID level migration, drive roaming, self-diagnosis, and web-based remote configuration		
Network Ports	LOM: 2 x 10GE + 2 x GE ports Flexible NIC: 2 x GE, 4 x GE, 2 x 10GE, 2 x 25GE, or 1/2 x 56G FDR IB ports		
PCIe Expansion	Up to 5 PCIe 3.0 slots, including 1 for a RAID controller card and 1 for a flexible NIC		
Fan Modules	7 hot-swappable fan modules with optional N+1 redundancy		
Power Supply Units	Proposed Server must have redundant Fans and Power Supply Units, Hot Swappable. 2 hot-swappable PSUs with support for 1+1 redundancy with related accessories		

Item	Description of Item Requirement	Complied (C) /Not Complied (NC)/ Partially Complied (PC)	Bidder Response/Reference
Management	<ul style="list-style-type: none"> • Must have a dedicated management GE network port to provide comprehensive management features such as fault diagnosis, automated O&M, and hardware security hardening. • Must standard interfaces such as Redfish, SNMP, and IPMI 2.0; provides a remote management interface based on HTML5/VNC KVM; supports CD-free deployment and the Agentless feature, simplifying management. 		
Operating Temperature	5°C to 45°C (41°F to 113°F), and ASHRAE A3 and A4 compliant		
Certifications	CE, UL, FCC, CCC, and RoHS		
Operating Systems	Must support Microsoft Windows Server, Red Hat Enterprise Linux, SUSE Linux Enterprise Server, CentOS, Citrix XenServer and VMware ESXi		
Security	Must have Power-on password, administrator password, Trusted Platform Module (TPM) 2.0, and security front panel		
Virtualization software	Support virtualization		

Structured Cabling (UTP & Fiber Optic) Requirements

Structured cabling works will include cabling of ICT offices, Data Center and NOC areas with Category 6A UTP cabling with Fiber Optic backbones from Supply Chain Management and Finance to the Data Centre to accommodate the change in switch rack as detailed below: -

Table 46: Detailed Technical Specifications For Structured Cabling

Item	Specifications (MANDATORY)	Response YES/NO
1.	Horizontal cabling will consist of data cables specified up-to 500 MHz in compliance with ANSI/TIA/EIA 568-B.2.1 specification for CAT 6A Cabling Systems	
2.	Horizontal data cables would terminate on the racks located at the Data Center as per site survey	
3.	Each work area outlet location shall be provided with Category 6A cables. The outlets faceplates shall be flush mounted on the metal trunking	
4.	The modular jacks shall be terminated using non-impact termination tool. The colour coding shall be consistent with T568B wiring standards	
5.	Cables shall only be coiled in the trunking or surface mount boxes if adequate space is present to house the cable coils without exceeding the manufacturers bend radius restrictions. Bend radius of the cable in the termination area shall not be less than 4 times the outside diameter of the cable	
6.	Excess slack may be neatly coiled and stored in the ceiling above each drop location when there is not enough space present in the outlet box to store cable slack	
7.	The cable shall be from an approved manufacturer for the purpose of extended warranty	
8.	Cables shall be installed in continuous lengths from the origin to the destination unless specifically addressed in this document	
9.	Cables shall be installed above any fire-sprinkler system or other sensors system. The cables shall not be attached to the system or any ancillary equipment or hardware	
10.	Cables shall not be attached to the ceiling grid or electrical supporting systems	
11.	Cable identification shall also be applied to the cables behind the faceplates on a section of the cable that can be accessed easily by removing the faceplate	
12.	The horizontal data cross-connect shall be installed within a 42U cabinet in the (MDC) server room. All equipment racks shall be augmented with horizontal and vertical cable management trays both front and rear, to properly arrange the horizontal cables and patch cords	
13.	Each panel shall be fed by an individual bundle separated and routed back to the point of cable entrance into the rack or frame	
14.	Whenever these are installed, multimode fiber links shall be tested	

Item	Specifications (MANDATORY)	Response YES/NO
	for attenuation and length verification	
15.	The links shall be tested at 850 nm and 1300 nm according to ANSI/EIA/TIA-526-14A Method B. Each fiber strand shall be tested for attenuation with an optical power meter and a light source	
16.	Cable length shall be verified using sheath markings. If splices are used, splice attenuation shall be verified with an OTDR	
17.	The guidelines and procedures established for tier 1 /2 testing in TIA/TSB-140 shall apply. Printed test results for each fiber strand shall be submitted	
18.	Wherever Fiber-optic Patch Cords are installed, backbone data patch cords shall be factory-terminated using duplex connectivity, 1 meter long, 50/125 micro meter multimode cable	
19.	The duplex cable shall have SC connectors on either side, unless specifically changed	

Table 47: Structured Cabling and Associated Accessories

Item	Parameter	No.	Unit	Response YES/NO
1.	Cat 6A 24 Port Patch Panel as Siemon	2	No.	
2.	Cat 6A cable	8	boxes	
3.	Data points	48	No.	
4.	Factory made Patch cords (1M)	48	No.	
5.	Factory made Patch cords (3M)	48	No.	
6.	8 Way Fiber Connect Panels as Siemon	1	Lot	
7.	Multimode SC 10m Fiber Jumpers as Siemon	5	No.	
8.	Multimode 5m Fiber Jumpers as Siemon	5	No.	
9.	SC Simplex Fiber Pigtails as Siemon	15	No.	

Table 48: Price Schedule Form- Cabinet, UPS ETC

Item	Description	Quantity	Unit Price	Total	Cost
				Inclusive of All Taxes	
1	Complete Smart Racks Solution as defined	Lot			
2	50KVA UPS	1			
3	Core Switch plus accessories	2			
4	Access Switches plus accessories	2			
5	Firewall plus accessories and subscription	2			

Item	Description	Quantity	Unit Price	Total	Cost
				Inclusive of All Taxes	
6	NOC Solution with its controller PC (i7, 16GB, 24" Display) and 2x 65" LED 4k screen	Lot			
7	Servers plus accessories and subscription	3			
8	PDU's for each Rack	LOT			
9	Installation, Configuration & Testing with Accessories	LOT			
10	Structured & Interact Cabling	LOT			
11	Migration of Equipment from Current Site to the new site and back	1			
12	Training and Technology transfer	1			
13	Years 1 Support, Warranties and Maintenance with SLA	1			
14	Years 2 Support, Warranties and Maintenance with SLA	1			
15	Years 3 Support, Warranties and Maintenance with SLA	1			
Sub Total For Integrated Data Center Infrastructure/ Smart Racks For Primary Data Centre					

SUB-CONTRACTOR 1: CIVIL WORKS

Table 49: Civil Works Requirements

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>Element 01; Demolition</u>				
A	Carefully demolish the existing timber partition, make good disturbed surfaces and dispose as directed by the P.m.	Sm	9		
B	Ditto ceiling and timber bandering	Sm	42		
C	Ditto double masonry/rc wall to create a space for the window	Cm	2		
	Sub Total for demolition works				
	<u>Element 02; Floor</u>				
A	150mm high fiber-reinforced calciumsulphate panel, steel sheet bottom Raised Floor size 600 x 600 x 30.5mm, 1.0mm HPL Cover, 0.5mm Galvanized steel foil singers and screws (24 sq. Meters)	Sm	24		
B	Ditto ramp	Sm	3		
	Subtotal for floor works				

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<p><u>Element 03; ALUMINIUM PARTITIONING</u></p> <p>- <u>Supply assemble and fix the following purpose made powder coated anodized aluminum fixed composite partitions in approved heavy duty sections complete with all frames, glazing beads and other accessories where applicable, fixed at predetermined positions, including 'snap on' glazing beads; sealing glass joints with silicone sealant building in lugs to jambs, plugging and screwing head and cill, easing and adjusting and leaving in perfect working order</u></p>				
A	<p>Fixed partition panel glazed with 6mm thick laminated glass and fixed with approved stainless steel patch fittings and joints sealed with clear silicone</p>	Sm	9		
	<p>Subtotal for aluminum partitioning</p>				
	<p><u>Element 04; Door</u> <u>Aluminum door</u></p> <p><u>Supply and fix the following; 75 x 50mm powder coated aluminum frames; 6 mm thick laminated tinted glass and glazing to aluminum doors with and including rubber glazing gaskets; decorative film to lower panel; all ironmongery (refer to architect's details)</u></p>				
A	<p>Double leaf door; overall size 1500 x 2100mm high; in filled with 6 mm thick laminated glass; complete with aluminum frames and beadings; hinges; pair aluminum handle plates; Sliding door complete with sliding gear</p>	No	1		

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<p>and track as Henderson or equal approved</p> <p>Subtotal for aluminum doors</p> <p><u>Element 05; Window</u> <u>Aluminum Window</u></p> <p><u>Supply and fix aluminum framed windows in approved powder coated aluminum framing in sections of size 75 x 50mm fixed to masonry or concrete; including glazing with 6 mm thick structured glazing solar receptive glass; secured to the framing using approved glazing strips and glazing beading including waterproofing all joints using approved silicon sealing compounds; complete with all fixing, flush lock and locking accessories; all to Architect's detail and approval. The rate includes cost of all materials, labor, scaffolding, ladders charges</u></p>				
A	<p>Window overall size 1700mm wide x 1700 mm high overall</p> <p>Subtotal for aluminum windows</p> <p><u>Element 06; Ceiling</u></p> <p>- <u>Gypsum ceiling</u> <u>Supply and fix gypsum ceiling boards to shapes and patterns in stepped form complete with and including metal studs channels and railing to be supplied and fixed in accordance with manufacturers printed instructions</u></p>	No	1		
-					

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
A	12mm thick gypsum ceiling boards	Sm	40		
B	100x30mm polyurethane cornice as supplied by classic mouldings ltd	Lm	40		
	<u>Steel Brandering</u> The rate for Structural Steelwork should include shop priming, all plates, bolts, welded joints and all connections as per Engineer's detailed drawing; hoisted to a height of 3000 mm above the existing floor level; 3 coats of approved gloss oil paint; to				
	-				
C	75 x 75 x 3mm RHS for framing	Lm	40		
D	50 x 50 x 3mm SHS Struts/Ties	Lm	140		
	Subtotal for ceiling works				
	<u>Element 07; Finishes</u>				
	- <u>Wall finishes</u> <u>Painting and decoration</u>				
	<u>Prepare and apply 3 coats intumescent flame retardant emulsion paint as "crown "or any other equal and approved paint to</u>				
	-				
A	Plastered walls internally/externally	Sm	250		
B	Soffites of chipboard ceiling	Sm	40		
	<u>Floor finishes</u>				
A	Hack the existing floor screed and dispose off the debris as directed by the PM	Sm	24		

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
B	30mm thick cement sand 1:2 backing to receive ceramic floors or terrazzo (s.m)	Sm	24		
C	Ditto in skirting	Lm	20		
D	Supply and fix 8mm thick ceramic floor tiles as "SAJ"	Sm	24		
E	Ditto 8mmx100mm in skirting	Lm	20		
	Subtotal for finishes				
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>GRAND SUMMARY</u>				
1	Sub Total for demolition works				
2	Subtotal for floor works				
3	Subtotal for aluminum partitioning				
4	Subtotal for aluminum doors				
5	Subtotal for aluminum windows				
6	Subtotal for ceiling works				
7	Subtotal for finishes				
8	Allow a provisional sum of two hundred thousand Kenya shillings for contingencies Sub Total for civil works carried to summary page				200,000.00

MECHANICAL SUB CONTRACTOR 2: - FIRE DETECTION AND SUPPRESSION

INERT GAS FIRE SUPPRESSION SYSTEM

2.4.1 General

This specification are for fire suppression using an Inert Gas to extinguish fires in the **Server Room** section housing data processing equipment where valuable documents exist, all as specified herein and as shown on contract drawings. It shall be the responsibility of the bidder to confirm all the necessary dimensions that will ensure the system performs satisfactorily. The gas shall be stored under pressure in liquefied form inside cylinders and piped to fire protected areas. Each Inert gas system in a given zone shall be supplied complete with its control unit that shall receive the signal from smoke detector or break glass and automatically release the gas after switching off the Ventilation system and sounding an alarm bell. The fire detection system in all areas where Inert gas pipe is not installed shall be supplied and installed by the Electrical Contractor but the Contractor shall liase with him and extend detection signal outputs into the Master Alarm Control Panel in the desired office as will be instructed by the Engineer.

2.4.1.1 The Design and installation shall be made in accordance with these specifications, drawings, all applicable National Fire Protection Association Standards and the requirements of the local authority having jurisdiction.

2.4.1.2 The fire suppression systems shall be designed by competent personnel who are trained and authorized by the equipment manufacturer for design of total flooding Inert gas systems and the integrated detection systems.

Working Drawings shall be in sufficient detail to indicate the type, size, and arrangement of component materials and devices; and the dimensions needed for installations and correlation with other materials and equipment.

All Working Drawings shall be submitted for review and approval prior to installation.

2.4.1.3 The Contractor shall furnish detailed literature outlining the operation, recharge and service of the system. Maintenance procedures for the owner shall be outlined. In addition, the contractor shall furnish the equipment manufacturer's recommended spare parts lists with information regarding availability and ordering instructions.

2.4.1.4. The contractor shall utilize an equipment manufacturer that will provide a 12-month warranty against false discharges when all conditions of the equipment manufacturer are fulfilled for this type of warranty. Details of this warranty be furnished upon request.

2.4.2 SYSTEM ARRANGEMENT

2.4.2.1. The Inert gas fire suppression system shall be of the engineered, permanently piped, fixed nozzle type with all pertinent components of the same manufacturer. **The system shall have one common bank of cylinders to discharge into the room at a time through the use of selector valves.** All agent storage containers shall be centrally located as vertical, freestanding cylinders with wall mounted retaining brackets. Where multiple

cylinders are required for the same hazard, a common manifold should be employed.

Mani folded cylinders shall employ a flexible discharge hose to facilitate installation and system maintenance. Each cylinder on a manifold shall also include an agent check valve installed to the manifold inlet.

2.4.2.2 Detection system shall be of the engineered type, suitable for direct interface with the Inert gas fire suppression system. All pertinent components shall be of the same manufacturer or approved for use with the control/release panel.

Detection network shall be cross-zoned or counting zone for positive and accurate response to fire condition.

For each hazard, both Ionization and Photoelectric type smoke detectors shall be used to provide automatic input to the control panel.

In addition, manual pull station(s) shall be provided for the direct electric release of the used Inert gas Fire Suppression System.

The sequence of operation for the control panel shall be as follows: -

1. Activation and annunciations of general alarms.
2. Activation of shutdown and / or startup of auxiliary function.
3. Activation and annunciation of the time delay
4. Release of agent.

Alarm bells shall be used for general alarm for visual/ audible signal of system discharge.

An adjustable time delay shall be used prior to Argon release (with) manual abort capability.

2.5 DESIGN PARAMETERS

2.5.1 Design application method is total flooding of the Inert gas and it shall be based upon the enclosure being sufficiently tight against agent leakage with all ventilation shut down and / or fire dampered or provide for static air condition upon discharge.

Inert gas quantity calculations shall be determined from dimension furnished on the construction drawings and in this specification for a **design concentration** defined by AS ISO 14520 -2009 of **39.9%** and **0.721 kg/m³** flooding factor at the minimum anticipated **hazard temperature of 18 0 C.**

Calculation for the maximum design concentration shall be based upon maximum anticipated hazard temperature of _____ 0 F (____ 22.2 ____ 0 C).

When applicable, agent quantity shall be adjusted for:

1. Altitudes of more than (915m) above sea level.
2. Non-flooded false ceiling volume.
3. Multiple hazards from a common agent supply.
4. Manufacturer standard tanks and fill increments
5. Duct volume for HVAC system.

2.5.2 The system shall be designed to discharge the calculated agent quantity in a nominal 60-second period.

2.5.3 Nozzle spacing shall be in accordance with the listed approved coverage for

each nozzle type. In all cases, the need for additional nozzle shall be considered based upon site conditions and manufacturer's recommendations.

2.5.4 Hydraulic calculations for each system shall be used upon two-phase flow equations for unbalanced systems as defined by NFPA –2001 regardless if a single nozzle or balanced piping network is used.

Computerized verification of hydraulic calculations shall be submitted for Inert gas system and include the following data as a minimum.

- a. Quantity of Agent per Nozzle.
- b. Type of Nozzle.
- c. Pressure at Nozzle (bar)
- d. Nozzle Body Nominal Size (mm).
- e. Nozzle Drill Size (64'/inch).
- f. Number and size of Tanks.
- g. Tank Fill Weight.
- h. Tank Filling Density.
- i. Total Agent Weight.
- j. Pipe Size per Pipe Section.
- k. Pipe schedule Per Pipe Section.
- l. Number, Size and Type of Fitting Per Pipe Section
- m. Actual Length per Pipe Section (m).

- n. Equivalent Length per Section (m).
- o. Elevation Change per Pipe Section (m).
- p. Piping Volume (m³).
- q. Discharge Time (sec).
- r. Percent of Agent in Pipe.
- s. Pressure at Start of Network (bar)
- t. Pressure Available at the Start and End of Each Pipe Section (bar).
- u. Density at the Start and End of Pipe Section (kg/m³).
- v. Flow rate Per Pipe Section (litres/sec.).
- w. Pressure Drop Per Pipe Section (N/m²)
- x. Y and Z Factors at the Start and End of Each Pipe Section.

2.5.5 The contractor shall provide data to indicate the free venting area required per NFPA-2001 for each hazard volume.

2.6 DESIGN PARAMETERS – DETECTION

2.6.1 The design of the detection/control system shall be based on a clean, vibration free, electrical non-hazardous environment

2.6.2 As a minimum detector spacing, shall be based upon NFPA recommended practices for ceiling construction, air flow and manufacturer recommendations.

At least one smoke detector of each type (ionization and photoelectric) shall be used in each protected area.

Where multiple detectors are used, detection shall alternate such that ionization are adjacent to photoelectric.

2.6.3 Unless otherwise stated on the drawings manual pull station(s) shall be located at all points of access from the protected area.

Unless otherwise stated on the drawings at least one alarm device shall be located within the protected area for the general alarm function.

Battery capacity shall be sufficient to permit normal non-alarm condition for 24 hours with subsequent general alarm for 5 minutes after loss of primary line power.

2.7 EQUIPMENT AND MATERIAL

2.7.1 General

All materials and equipment furnished by the contractor shall be of new, unused, and undamaged condition in strict accordance with the requirement of this section. Equipment shall be required to meet the following standards; **ISO 14520, UNE 23575, NFPA 2001 AND CEA 4008.**

Where items are specified to a nationally recognized standard of manufacture, any component meeting this standard will be considered equal.

Manufacturer's equipment other than as specified shall be bid as an alternate with the base as an alternate with the base bid furnished as specified.

All equipment's and materials shall only be used for their intended application, in locations for which they were designed, and installed in accordance with the manufacturer's instructions and /or recognized standard trade practice.

2.7.2. Pipe Material

The inert gas fire system piping shall be of non –combustible materials having physical and chemical characteristics such that its integrity under stress can be predicted with reliability.

Materials other than listed below, such as stainless steel or nonferrous piping or tubing may be used if the materials satisfy the applicable requirements of NFPA-2001.

As a minimum, piping materials shall be black galvanized seamless steel pipe conforming To BS specifications and **capable of 65 bar operating pressure (ASTM Grade A-106B).** Under no conditions shall ordinary cast iron pipe, steel pipe or non- metallic pipe be used.

Inert gas fire system piping joints shall be suitable for the design conditions and shall be selected with consideration of joint tightness and mechanical strength.

As a minimum, fittings shall be black galvanized ANSI 300lb. Class malleable iron, ASTM A-197, m ANSI 300lb. Class ductile iron, ASTM A-395; or steel ASTM A-234.

Ordinary cast iron fittings shall not be permitted. Piping shall be installed accordance with good commercial practice to the appropriate codes, **securely supported** with Listed hangers, and arranged with close attention to the design layout since deviations may alter the design flow performance as hydraulically calculated.

All Piping must be reamed, blown clear, and swabbed with appropriate solvent to remove mill varnish and cutting oils before assembly. The piping shall also be finished off with two coats of red paint after testing.

Multi- outlet fittings other than tees shall not be permitted.

Assembly of all joints shall conform to the appropriate standards. Threaded pipe joints shall utilize Teflon tape applied to male threads only.

2.7.3 Agent Storage Tank

Inert gas fire storage containers shall be of high strength alloy steel construction in accordance with NFPA 2001 finished in (baked red enamel) (red epoxy) paint.

Tank assemblies shall be filled with an Inert gas pressurized to 300 bars at (21 OC).

Filling of the tank assembly shall be by a factory authorized U.L listed filling station. Initial filling and recharge shall be done in accordance with the manufacturer's established procedures and shall not require replacements components for normal service.

The size and fill weights of all cylinders shall be based-on computer verified system design requirements and shall be of the following nominal sizes:

80 litres with a nominal 33.2kg tank assembly shall be equipped with an internal liquid level-measuring rod, marked in ¼-inch increments to allow direct reading of the liquid level and conversation to the weight of Inert gas within the tank.

Tank assemblies shall be vertical, freestanding modules employing suitable wall mounted retaining brackets. Tank assemblies shall be listed or approved to perform in the temperature range of – 650F to 1300F (-540°C to 540°C).

Aluminum **nameplates** indicating manufacturer's name and part number, agent fill weight, total charged weight date of fill, and U.L. Listed fill station case shall be permanently bonded to each tank.

Each tank assembly shall have the means to accommodate lifting devices to facilitate weighing removal and replacing.

Tank assembly shall include a low-pressure switch that operates at approximately 225 (1551kpa) to facilitate continuous supervisions of tank pressure.

2.7.4 Tank Valve

Agent storage tank assemblies shall include an integral, high flow valve assembly connected to the tank by a machined thread and sealed by an O-ring.

Valve outlet sizes shall be based on the nominal tank capacity with a one-inch size for 18, 33, 54 and 72-pound assemblies, and three inch for 600-pound assemblies.

The valve design shall be of the differential pressure type, which utilizes tank pressure to seal the valve assembly. The valve shall be compatible with separate, removable, stackable type actuators for electric, pneumatic, and/or manual actuation.

Operation of the valve by the stackable type actuator shall be such actuation. Operation of the valve by the stackable type actuator shall be such that pressure is relieved from the upper chamber of the valve causing the valve to open. Valves shall be forged brass construction with an O-ring sealed brass spool incorporating the main elastomeric seal surface.

The valve assembly shall include recessed pressure gauge 0 to 250 bar, overpressure safety relief disc assembly, normally pressurized connection port for an optional low-pressure switch, normally unpressurized connection port used as pneumatic source for a valve cylinder valve actuation, and brass shipping caps on exposed thread connection.

When pneumatically operated main/reserve systems are used, pilot valves shall be equipped with actuation isolators.

All 3-inch valve assemblies shall be equipped with a removable pressure gauge feature. This gauge shall be capable of being removed from the valve assembly when the tank is pressurized.

2.7.5 Tanks Brackets

Each Inert gas tank shall be furnished with a stainless steel, two-part, strap type retaining bracket designed for installation with standard 1 5/8 in continuous slotted channel.

2.7.6 Valve Actuators

The gas valve actuators shall be of brass construction stackable design, with swivel connections to allow removal of actuators for maintenance or testing.

Operation of actuators neither shall nor require replacement of components.

No electro-explosive devices may be used to actuate the valve assembly.

Electric actuators shall be of the **continuous duty solenoid type** with a maximum power requirement of 7 watts for 24VDC operation.

Pneumatic actuators shall be designed to operate from either Inert gas tank pressure with appropriate interconnections or by nitrogen pressure from a separate listed or approved source.

Manual override actuators shall be designed to attach to electric actuator or directly to the valve assembly and permit manual operation of the pilot Inert gas tank assembly. This actuator shall incorporate a detent action with a red phenolic palm bottom and safety ring pin.

Where actuation hose (s) are required stainless steel, braid covered types shall be used.

2.7.7 Discharge Hose/Check Valve

When manifolding, all tank assemblies shall include a flexible discharge hose and check valve for connection to manifold inlet.

Nominal 1 and 2 inch hoses shall be elastomeric with standard NPT male threads and be compatible with the manufacturer's check valve.

Nominal three inch hoses shall be braided stainless construction and incorporate an integral check valve providing a 1 ½-inch height adjustment to compensate for the height variance between cylinder and manifold connection.

A swivel connection at valve outlet shall be provided on all tank installation to facilitate removal for service and testing.

2.7.8 Discharge Nozzles

Gas discharge nozzles shall be of one-piece (brass) construction sized to provide flow rates in accordance with system design hydraulics.

Orifice (s) shall be machined in the nozzle body to provide a horizontal discharge in 90°, 180°, or 360° patterns based upon the approved coverage arrangements. Separate, interchangeable orifice plates are not acceptable.

Nozzles shall be permanently marked with the manufacturer's part number, number of orifice and orifice code. The nozzle shall be threaded directly to the discharge piping without the use of special adaptors.

2.7.9 Warning Signs

Etched aluminum Warning Signs shall be provided at all Entrance and Exits of the protected area.

Entrance sign shall read: "WARNING \DO NOT ENTER ROOM WHEN ALARM SOUNDS, **INERT GAS** BEING RELEASED."

Exit sign shall read: "WHEN ALARM SOUNDS, VACATE AT ONCE, **INERT GAS** BEING RELEASED..."

2.8 EQUIPEMENT AND MATERIAL –ELECTRICAL

2.8.1 General Materials

All electrical trunkings and conduits shall be employed in accordance with applicable codes and intended use and contain only those electrical circuits associated with the fire detection and control system and shall not contain any circuit that is unrelated to the system.

Unless specifically provided otherwise in each case, all conductors shall be enclosed in steel conduit, rigid or thin walled as conditions dictate, except in computer room where they shall be PVC conduit concealed in building fabrics electrically hazardous classification shall be observed and any equipment for materials installed shall be must meet or exceed the requirements of service.

All wiring shall be of the proper size to conduct the circuit current shall not smaller than No.18 AWG unless otherwise specified for a given purpose. Wire that has scrapes nicks, gouges, or crushed insulation shall not be used.

The use of aluminum wire is strictly prohibited.

Splicing of circuits shall be kept to a minimum and are only to be found in an electrical device suited for the purpose.

Wire spliced together shall have the same color insulation. Wire splices shall be made with appropriate devices suited for the purposes.

All wire terminations shall be made with crimp terminals unless the device at the termination is designed for bare wire termination.

All wire terminations shall be made with crimp terminals unless the device at the termination is designed for bare wire termination.

All electrical circuits shall be numerically tagged with suitable devices at its terminating point and/ or splice. All circuits' numbers shall correspond with the installation drawings.

The use of colored wires is encouraged. White colored wire shall be used exclusively for the identification of the neutral conductor of an alternating current circuit.

Green colored wire shall be used exclusively for the identification of the earth ground conductor of an AC and DC circuit.

2.8.2 Control Panels – General

All control panels shall be F.M approved and be utilized with listed or approved operating devices shall be capable of the following features:

1. Ground Fault Indication
2. Supervised Detection Circuits (s).
3. Supervised Alarm Circuit
4. Supervised Release Circuit
5. Supervised Manual Pull Circuit
6. Supervised Line Power Circuit
7. Alarm Overrides Trouble Logic.
8. Battery Standby
9. Front Panel Indicating Lamps
10. Key Lock Steel Enclosure
11. Programmable Time Delay
12. Programmable Detection Logic
13. Prioritized Trouble Logic
14. Solid State Integrated circuitry

2.8.3 Control Panel – Dual Zone Unit

In addition to the general requirements for control panels, dual zone control units shall meet the requirements of this section.

The control unit shall consist of power supply, programmable zone actuation, five supervised circuits and six auxiliary relays.

The internal power supply shall operate from 240V 50Hz A.C power supply.

The control unit shall provide provisions for housing its own set of “on-line” float charged emergency batteries within the enclosure.;

The control unit shall provide two supervised detection (input circuits) programmable for:

1. Independent Zoning
2. Priority Zoning
3. Cross-Zoning

A supervised dedicated manual pull circuit designated for immediate operation of the release circuit shall be provided.

Abort function (if used) shall be programmed for (immediate Release) (timed release) after abort.

A programmable time delay of 0.60 seconds in 5 seconds increments shall be provided between verification of a fire situation and suppression system release.

A fused polarity reversing, 1 amp, 24VDC supervised dedicated release circuit for use with approved fire suppression system releasing devices shall be provided.

Battery supervision shall be provided for condition and placement of the batteries.

An auxiliary trouble circuit devices shall be provided for supervision of other normally closed accessory

Six plug in relays shall be provided for auxiliary function. Each of the following actions shall cause one of the six relays to transfer.

1. System Discharge
2. Zone 1 Alarm
3. Zone 2 Alarm
4. Pre-Discharge Alarms
5. General Alarm
6. System Trouble

LED indicators shall be provided on the front door to annunciate the following conditions

- i) Power – (Green)
- ii) System Trouble - (Red)
- iii) Zone 1 Alarm – (Red)
- iv) Zone 2 Alarm – (Red)
- v) Pre-discharged Alarm- (Red)
- vi) System Fired – (Red)

A prioritized LED troubleshooting code shall be provided in order to restore the control unit to normal condition as quickly as possible.

The control unit shall be housed in steel cabinet of approved type with conduit knockouts in a (red) (beige) enamel finish.

The door shall have a continuous hinge a 180° swing. Wiring connections shall be screw terminal blocks.

A trim ring shall be supplied for semi-flush installations. When two dual zone control units are required, they shall be available in a single enclosure, if this feature simplifies the installation and system arrangement.

The control unit shall be F.M Approved as an alarm/releasing control unit

2.8.4 Smoke Detector - Ionization

Ionization type smoke detector shall be dual chamber type and compatible with the control unit. The detector shall have an LED in its base, which is illuminated in a steady “on” mode when in alarm. Reset of the detector shall be performed by the control unit reset switch.

The design of the ionization detector compensating circuits shall provide stable operation with regard to minor changes in temperature, humidity, and atmosphere conditions.

The design of the ionization detector compensating circuits shall provide stable operation with regard to minor changes in temperature, humidity, and atmosphere conditions.

The design of the ionization detector compensating circuits shall provide stable operation with regard to minor changes in temperature, humidity, and atmosphere conditions.

The sensitivity voltage shall be factory set as per U.L 268. A special locking screw shall be provided to lock the head to the base; the head to base connection shall be by use of bifurcated contacts. Terminal connections to the base shall be of the screw type.

Where specifically identified on the contract drawings, detector vases shall incorporate a relay with Form C contacts rated at 1 amp 120 VAC or 28VDC for remote LED alarm annunciation of the detector. The detector shall be F.M Approved.

2.8.5 Smoke Detector - Photoelectric

Photoelectric detector shall be a solid-state sensing chamber unit providing stable operations (sensitivity) and compatible with the control unit. The detector shall utilize a light sensing photodiode and a pulse signal processor to measure the density of the combustion products within the sensing chamber. The detector head shall have a stainless-steel mesh to prevent foreign objects from entering the sensing chamber.

The sensitivity voltage shall be factory set.

A special locking screw shall be provided to lock the head to the base. The head to base connection shall be by use of bifurcated contacts. Terminal connections to the base shall be of the screw type.

Where specifically identified on the contract drawings, detector bases shall incorporate a relay with Form C contacts rated at 1-amp 120VAC or 28VDC for remote LED alarm annunciation of the detector.

The detector shall be U.L. Listed or F.M Approved.

2.8.6 Alarm Bells

The vibrating Alarm Bell shall be approved for use with the listed control unit. The polarized alarm bell shall be rated at 24VDC and draw no more than .063 amps and shall contain a series diode for use in supervised systems.

It shall have a dB level of 86 – 90 at 3 metres.

The bell shall be constructed of high-quality materials to ensure reliability and long life and have a baked red enamel finish.

The device shall be F.M Approved.

2.8.7 Manual Pull Stations (Fire man's switch)

The Manual Pull Station shall be provided for the release (electrical) of the Inert gas in case of an emergency. The unit shall be contained within a metal body having a (single) (double) pole switch.

[The device shall be that approved by Fire Authority.]

2.8.8 Abort Switch

The abort switch shall be used where an investigation delay is desired between detection and actuation of the Inert Gas System.

This switch shall be a momentary contact "dead-man" type switch requiring constant

pressure to transfer one set of normally open and one set of normally closed contacts on each contacts on each contact block. Clear operating instruction shall be provided at the abort switch.

The terminal connections shall be of the screw type.

The device shall be U.L listed of F.M Approved for a delay switch.

2.8.9 Pressure Switch

This pneumatically actuated switch shall be used to give positive identification of release of Inert gas in the piping system.

The switch shall have one set of normally open and one set of normally closed contacts.

2.8.10 Selector Switch – Key Operated

The key operated selector switch shall be approved for use with the listed control unit and provide an electrical means of transferring the release circuit signal to the inert gas system from the main supply to the reserve supply.

The switch contracts shall provide a set of normally open and normally closed contacts.

2.9 SYSTEM INSPECTION AND TESTING

The completed installation shall be inspected by authorized personnel and shall include a full operational test of all components per the equipment's manufacturer recommendation including agent discharge.

This shall be done in the presence of the owner's representative and other insuring authority having jurisdiction.

All mechanical and electrical components shall be tested according to the manufacturer's recommended procedure to verify system integrity.

An inspection shall be provided by the contractor. Inspection shall include a complete checkout of the electronic system, and certification of weight and cylinder pressure. A written report shall be filed with the owner.

Two copies of drawings shall be provided by the Contractor indicating the installed details. All routing or piping and electrical conduit and accessories shall be noted.

Equipment, Installation and Maintenance Manuals shall be provided in additions to the as-built drawings.

Prior to final acceptance, the contractor shall provide operational training in all concepts of this system to the owner's key personnel.

Training shall consist of -

1. System Control Unit Operation
2. Trouble Procedures
3. Abort Procedures

4. Emergency Procedures

5. Safety Requirements

A functional test shall be completed prior to the concentration test consisting of detection, release alarm, accessories related to system, control unit, and a review of the tanks, piping, fittings, hangers and cylinder pressure.

Concentration test shall be provided under the supervision of the contractor's authorized personnel in the presence of the owner's representative, local authorities and any other insuring authority.

Equipment manufacturer and the Inert gas supplier shall recommend inert gas test procedures.

The contractor shall provide a 3-chart thermal conductivity gas analyzer capable of automatically recording three sampling points. Concentration recording shall continue until authorities are satisfied with hazard integrity or 10 minutes have elapsed.

The sampling points shall be located at strategic areas but no higher than the highest combustible contents. If the tests results indicate that the design concentration was not achieved and/or held, the contractor shall determine the cause of failure.

After determination of cause, the system should be recharged and again placed in operation. The contractor shall only be responsible to retest based on equipment failure.

Table 50: Bill No. 1: INERT GAS FIRE SUPPRESSION SYSTEM

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT in Kshs
A	<u>FIRE DETECTION AND CONTROL</u>				
1	3 Zone - single area fire extibnuguishant control panel c/w charger and standby battery	No.	1		
2	GSM communication module	No.	1		
3	Optical; smoke sensors	No.	8		
4	24V dc first stage alarm bell	No.	1		
5	24V dc second stage release sounder/strobe	No.	1		
6	Power shutdown relay	No.	1		
7	A/C shut down relay	No.	1		
8	Magentic door minitor switch	No.	1		
9	Gas isolate abort switch	No.	1		
10	Fire resistant cables installation and accessories	Lot	1		
TOTAL FOR DETECTION AND CONTROL					
B	<u>SUPPRESSION SYSTEM -</u>				
11	Cylinder size 80 litre assembly filled 300 bar of 33.2 kg of size diameter 267mm, height 2130mm and wieght 109kg when filled.	No.	2		
12	Label for C60 cylinder identificataion	Kg.	2		
13	Discharge hose 3/4" BSP 90 Deg one end	No.	2		
14	Manual/Electric release unit for C60 N.C	No.	1		
15	Contact pressure gauge unit	No.	2		
16	Hi-flex hose 1/4" for actuation line	No.	2		
17	Pneumatic Y actuator	No.	2		
18	Leak valve for actuation line	No.	1		
SUB-TOTAL 1 FOR INERT GAS SUPPRESSION SYSTEM					

ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT in Kshs
1	Manifold for single row	No.	2		
2	Bracket for manifold 1 row 200mm	No.	2		
3	Copper bundy tube for pressure switch	No.	1		
4	Union 1/4" BSPT x 8mm OD copper tube	No.	1		
5	Pressure operated switch	No.	1		
6	End cover white PVC 34 x 40mm	No.	2		
7	15mm discharge nozzle assembly	No.	1		
8	20mm discharge nozzle assembly	No.	1		
9	Warning notice door entry	No.	1		
10	Warning notice gas release point	No.	1		
11	Pressure vent	No.	1		
SUB-TOTAL 2 FOR INERT GAS SUPPRESSION SYSTEM					
	Discharge pipework of schedule 40 hot dip galvanised of the following sizes				
12	15mm	Lm.	6		
13	20mm	Lm.	6		
14	3000lb galvanised screwed fittings, yellow gas grade Teflon tape for threaded connections up to 50NB and roll grooved couplings are acceptable 65NB and above	Lot	1		
15	Very early smoke detection apparatus (VESDA)	No.	1		
SUB-TOTAL 3 FOR PIPEWORK AND DETECTION					

Table 49: Summary Page

Item	Description	Amount (KShs)
1	Preliminaries	
2	Total for detection and control	
3	Sub - Total 1	
4	Sub - Total 2	
5	Sub - Total 3	
6	A sum for unforeseen work to be used according to authorised instructions	500,000.00
	Total cost for fire protection works carried to form of tender	

General Notes to the Tenderer

- 1.1 The tenderer shall submit technical schedules for all materials and equipment upon which he has based his tender sum.
- 1.2 The tenderer shall also submit separate comprehensive descriptive and performance details for all plant apparatus and fittings described in the technical schedules. Manufacturer's literature shall be accepted. Failure to comply with this may have his tender disqualified.
- 1.3 Completion of the technical schedule shall not relieve the Contractor from complying with the requirements of the specifications except as may be approved by the Engineer

TECHNICAL SCHEDULE

The tenderer must complete in full the technical schedule. Apart from the information required in the technical schedule, the tenderer **MUST SUBMIT** comprehensive manufacturer's technical brochures and performance details for all items listed in this schedule (fill forms attached).

Table 50: Technical Schedule

ITEM	DESCRIPTION	MANUFACTURER	COUNTRY OF ORIGIN	REMARKS (Catalogue No. etc.)
1	Fire detection and control equipment and accessories			
2	80 litre cylinder at 300 bar 33.2kg with a flooding factor of 0.721kg/m ³			
3	Manifold for single row			
4	Very early smoke detection apparatus			
5	Discharge pipework and fittings			

Catalogue must be attached for all the items in the schedule of material above

MAINTENANCE SERVICE

FULL-SERVICE MAINTENANCE DURING 60 MONTHS AFTER DEFECTS LIABILITY PERIOD

- 1.1 The tenderer is advised to note that their price shall be used in the evaluation of the tenders.
- 1.2 The tenderer shall price for both labour and consumables (materials) during the 60 months' full-service period in appendix A of this section. The price shall be for supply, installation, testing and commissioning including all taxes applicable at the time of tender.
- 1.3 The tenderer shall list and price the consumables/spares/materials to be used during the 60 months' full-service period in appendix B of this section. The price shall be for supply, installation, testing and commissioning including all taxes applicable at the time of tender.
- 1.4 The tenderer shall list and price the consumables/spares/materials to be used during the 60 months' full-service period. This list is to be

comprehensive as possible and shall include major spares as cards, fan motors etc. The price shall be for supply, installation, testing and commissioning including all taxes applicable at the time of tender. These are spare parts that are not required during normal routine maintenance and shall only be paid for as and when replaced. The tenderer shall give the details of these spare parts in appendix C of this section.

- 1.5 The tenderer is required to read clause 1.41 on page C-16 while completing this section.
- 1.6 The tenderer must fill all the prices and rates in the appendices A, B, and C of this section. Failure to do so shall lead to disqualification.

APPENDIX A

PRICE FOR FULL NORMAL ROUTINE MAINTENANCE DURING 60 MONTHS AFTER DEFECTS LIABILITY PERIOD

Table 51:

ITEM	DESCRIPTION	Kshs.	Cts.
A	Labour costs per month		
B	Material costs for spare parts (consumables) per month – see Appendix C of this section		
Sub-total for one (1No.) month maintenance after the defect’s liability period (NOT TO BE CARRIED TO FORM OF TENDER)			
Grand total for 60 months maintenance after the defect’s liability period (NOT TO BE CARRIED TO FORM OF TENDER)			

Signed by the Tenderer:

Official stamp:

Date:

APPENDIX C

PRICE BREAKDOWN OF SPARES/CONSUMABLES TO BE USED DURING 60 MONTHS AFTER DEFECTS LIABILITY MAINTENANCE PERIOD (ATTACHMENTS ARE ALLOWED IF THE LIST IS LONG)

Note: the price total in this appendix C should tally with the grand price total in appendix A of this section

Table 53:

ITEM	DESCRIPTION	Unit	Qty	Amount in Kshs.
Signed by the Tenderer:				

Official stamp:

Date:

ELECTRICAL SUB CONTRACTOR

Electrical and Access Control Installation Services

3.1 SHOP DRAWINGS

Before manufacture or Fabrication is commenced the sub-contractor shall submit Two copies of detailed drawings of all control pillars, meter cubicles, medium voltage switchboards including their components showing all pertinent information including sizes, capacities, construction details, etc, as may be required to determine the suitability of the equipment for the approval of the Engineer. Approval of the detailed drawings shall not relieve the sub-contractor of the full responsibility of errors or the necessity of checking the drawings himself or of furnishing the materials and equipment and performing the work required by the plans and specifications.

3.2 RECORD DRAWINGS

These diagrams and drawings shall show the completed installation including sizes, runs and arrangements of the installation. The drawings shall be to scale not less than 1 :50 and shall include plan views and section.

The drawings shall include all the details which may be useful in the operation, maintenance or subsequent modifications or extensions to the installation.

Three sets of diagrams and drawings shall be provided, all to the approval of the Engineer. One coloured set of line diagrams relating to operating and maintenance instructions shall be framed and, mounted in a suitable location.

3.3 REGULATIONS AND STANDARDS

All work executed by the Sub-contractor shall comply with the current edition of the “Regulations” for the Electrical Equipment of Buildings, issued by the Institution of Electrical Engineers, and with the Regulations of the Local Electricity Authority.

Where the two sets of regulations appear to conflict, they shall be clarified with the Engineers. All materials used shall comply with relevant Kenya Bureau of Standards Specification.

3.4 SETTING OUT WORK

The sub-contractor at his own expenses; is to set out works and take all measurements and dimensions required for the erection of his materials on site; making any modifications in details as may be found necessary during the progress of the works, submitting any such modifications or alterations in detail to the Engineer before proceeding and must allow in his Tender for all such modifications and for the provision of any such sketches or drawings related thereto.

3.5 POSITIONS OF ELECTRICAL PLANT AND APPARATUS

The routes of cables and approximate positions of switchboards etc, as shown on the drawings shall be assumed to be correct for purpose of Tendering, but exact positions of

all electrical Equipment and routes of cables must be agreed on site with the Engineer before any work is carried out.

3.6 MCB DISTRIBUTION PANELS AND CONSUMER UNITS

All cases of MCB Panels and consumer units shall be constructed in heavy gauge sheet with hinged covers.

Removable undrilled gland plates shall be provided on the top and bottom of the cases. Miniature circuit breakers shall be enclosed in moulded plastic with the tripping mechanism and arc chambers separated and sealed from the cable terminals.

The operating dolly shall be tripfree with a positive movement in both make and break position. Clear indication of the position of the handle shall be incorporated.

The tripping mechanism shall be on inverse characteristic to prevent tripping in temporary overloads and shall not be affected by normal variation in ambient temperature.

A locking plate shall be provided for each size of breaker; A complete list of circuit details on typed cartridge paper glued to stiff cardboards and covered with a sheet of perspex, and held in position with four suitable fixings, shall be fitted to the inner face of the lids of each distribution panel. The appropriate MCB ratings shall be stated on the circuit chart against each circuit in use: Ivorine labels shall be secured to the insulation barriers in such a manner as to indicate the number of the circuits shown on the circuit chart.

Insulated barriers shall be fitted between phases, and neutrals in all boards, and to shroud live parts.

Neutral cables shall be connected to the neutral bar in the same sequence as the phase cables are connected to the MCB's. This shall also apply to earth bars when installed.

3.7 FUSED SWITCHGEAR AND ISOLATORS

All fused switchgear and isolators whether mounted on machinery, walls or industrial panels shall conform to the requirements of KS 04 – 226 PART: 1: 1985.

All contacts are to be fully shrouded and are to have a breaking capacity on manual operations as required by KS 04 – 182 : 1980.

Fuse links for fused switches are to be of high rupturing capacity cartridge type, conforming to KS04 – 183:1978.

Isolators shall be load breaking/fault making isolators.

Fused switches and isolators are to have separate metal enclosures. Mechanical interlocks are to be provided between the door and main switch operating mechanism so arranged that the door may not be opened with the switch in the 'ON' position. Similarly; it shall not be possible to close the switch with the door open except that provision to defeat the mechanical interlock and close the switch with the door in the open position for test purposes. The 'ON' and 'OFF' positions of all switches and isolators shall be clearly indicated by a mechanical flag indicator or similar device. In T.P & N fused switch units, bolted neutral links are to be fitted.

3.8 CONDUITS AND CONDUIT RUNS

Conduit systems are to be installed so as to allow the loop-in system of wiring:

All conduits shall be black rigid super high impact heavy gauge class 'A' PVC in accordance with KS 04 – 179: 1988 and IEE Regulations. No conduit less than 20mm in diameter shall be used anywhere in this installation.

Conduit shall be installed buried in plaster work and floor screed except when run on wooden or metal surface when they will be installed surface supported with saddles every 600mm. Conduit run in chases shall be firmly held in position by means of substantial pipe hooks driven into wooden plugs.

The Sub-contractors attention is drawn to the necessity of keeping all conduits entirely separate from other piping services such as water and no circuit connections will be permitted between conduits and such pipes.

All conduits systems shall be arranged wherever possible to be self-draining to switch boxes and conduit outlet points for fittings:

The systems, when installed and before wiring shall be kept plugged with well fitting plugs and when short conduit pieces are used as plugs, they shall be doubled over and tied firmly together with steel wire; Before wiring all conduit systems shall be carried out until the particular section of the conduit installation is complete in every respect.

The sets and bends in conduit runs are to be formed on site using appropriate size bending springs and all radii of bends must not be less than 2.5 times the outside diameter of the conduit. No solid or inspection bends, tees or elbows will be used.

Conduit connections shall either be by a demountable (screwed up) assembly or adhesive fixed and water tight by solution. The tube and fittings must be clean and free of all grease before applying the adhesive. When connections are made between the conduit and switch boxes, circular or non-screwed boxes, care shall be taken that no rough edges of conduit stick out into the boxes.

Runs between draw in boxes are not to have more than two right angle bends or their equivalent. The sub-contractor may be required to demonstrate to the Engineers that wiring in any particular run is easily withdrawable and the sub-contractor may, at no extra cost to the contract; be required to install additional draw-in boxes required. If conduit is installed in straight runs in excess of 6000mm, expansion couplings as manufactured by Egatube shall be used at intervals of 6000mm.

Where conduit runs are to be concealed in pillars and beams, the approval of the Structural Engineer, shall be obtained. The sub-contractor shall be responsible for marking the accurate position of all holes, chases etc, on site, or if the Engineer so directs, shall provide the Main Contractor with dimensional drawings to enable him to mark out and form all

holes and chases. Should the sub-contractor fail to inform the main contractor of any inaccuracies in this respect they shall be rectified at the sub-contractors expense. It will be the Sub-contractors responsibility to ascertain from site, the details of reinforced concrete or structural steelwork and check from the builder's drawings the positions of walls, structural concrete and finishes. No reinforced concrete or steelwork may be drilled without first obtaining the written permission of the Structural Engineer.

The drawings provided with these specifications indicate the appropriate positions only of points and switches, and it shall be the Sub-Contractors responsibility to mark out and centre on site the accurate positions where necessary in consultation with the Architect and the Engineer. The sub-contractor alone shall be responsible for the accuracy of the final position.

3.9 CONDUIT BOXES AND ACCESSORIES

All conduit outlets and junction boxes are to be either malleable iron and of standard circular pattern of the appropriate type to suit saddles being used or super high impact PVC manufactured to KS 04 – 179 : 1983.

Small circular pattern boxes are to be used with conduits up to and including 25mm outside diameter. Rectangular pattern adaptable boxes are to be used for conduits of 32mm outside diameter and larger. For drawing in of cables in exposed runs of conduit, standard pattern through boxes are to be used:

Boxes are to be not less than 50mm deep and of such dimensions as will enable the largest appropriate number of cables for the conduit sizes to be drawn in without excessive bending.

Outlet boxes for lighting fittings are to be of the loop-in type where conduit installation is concealed and the sub-contractor shall allow one such box per fitting, except where fluorescent fittings are specified when two such boxes per fitting shall be fitted flush with ceiling and if necessary fitted with break joint rings. Pattresses shall be fitted where required to outlets on surface conduit runs.

Adaptable boxes are to be of PVC or mild steel (of not less than 12swg) and black enamelled or galvanised finish according to location. They shall be of square or oblong shape location. They shall be of square or oblong shape complete with lids secured by four 2 BA brass roundhead screws; No adaptable box shall be less than 75mm x 75mm x 50mm or larger than 300mm x 300mm x 75mm and shall be adequate in depth in relation to the size of conduit entering it. Conduits shall only enter boxes by means of conduit bushes.

3.10 LABELS

Labels fitted to switches and fuse boards:-

- (i) Shall be Ivorine engraved black on white.
- (ii) Shall be secured by R.H brass screws of same manufacturing throughout.
- (iii) Shall be indicated on switches:-
 - a) Reference number of switch
 - b) Special current rating
 - c) Item of equipment controlled

- (iv) Shall indicate on MCB panels
 - a) Reference number
 - b) Type of board, i.e., lighting, sockets, etc.,
 - c) Size of cable supplying panel
 - d) where to isolate feeder cable
- (v) Shall be generally not less than 75mm x 50mm.

3.11 EARTHING

The earthing of the installation shall comply with the following requirements:-

- (i) It shall be carried out in accordance with the appropriate sections of the current edition of the Regulations, for the Electrical Equipment of Buildings issued by Institute of Electrical Engineers of Great Britain.
- (ii) At all main distribution panels and main service positions a 25mm x 3mm minimum cross sectional area Copper tape shall be provided and all equipment including the lead sheath and armouring of cables, distribution boards and metal frames shall be bonded thereto.
- (iii) The earth tape in Sub-clause (ii) shall be connected by means of a copper tape or cable of suitable cross sectional area to an earth electrode which shall be a copper earth rod (see later sub-clause).
- (iv) All tapes to be soft high conductivity copper, untinned except where otherwise specified and where run underground on or through walls, floors, etc., it shall be served with corrosion resisting tape or coated with corrosion compound and braided
- (v) Where the earth electrode is located outside the building a removable test link shall be provided inside the building as near as possible to the point of entry to the tape, for isolating the earth electrode for testing purposes.
- (vi) Earthing of sub-main equipment shall be deemed to be satisfactory where the submain cables are M.I.C.S. or conduit with separate earth wire, and installation is carried out in accordance with the figures stated in the current edition of the I.E.E Regulations.
- (vii) Where an earth rod is specified (see Sub-clause (iii)) it shall be proprietary manufacture, solid hand drawn copper of 15mm diameter driven into the ground to a minimum depth of 3.6m . It shall be made up to 1.2m sections with internal screw and socket joints and fitted with hardened steel tip and driving cap.
- (viii) Earth plates will not be permitted
- (ix) Where an earth rod is used the earth resistance shall be tested in the manner described in the current edition of the IEE Regulations, by the Sub-Contractor in the presence of the Engineer and the Sub-Contractor shall be responsible for the supply of all test equipment.
- (x) Where copper tape is fixed to the building structure it shall be by means of purpose made non-ferrous saddles which space the conductor away from the structure a minimum distance of 20mm. Fixings, shall be made using purpose made plugs; No fixings requiring holes to be drilled through the tape will be accepted.
- (xi) Joints in copper tape shall be tinned before assembly riveted with a minimum of two copper rivets and seated solid.
- (xii) Where holes are drilled in the earth tape for connection to items of equipment the effective cross sectional area must not be less than required to comply with the IEE regulations.

- (xiii) Bolts, nuts and washers for any fixing to the earth tape must be of non-ferrous material.
- (xiv) Attention is drawn to the need for the earthing metal parts of lighting fittings and for bonding ball joint suspension in lighting fittings.

3.12 CABLES AND FLEXIBLE CORDS

All cables used in this Sub-Contract shall be manufactured in accordance with the current appropriate Kenya standard Specification which are as follows:-

P.V.C. Insulated Cables and Flexible Cords -	Ks 04-192:1988
PVC Insulated Armoured Cables -	Ks 04-194:1990
Armouring of Electric cables -	Ks 04-290:1987

The successful Sub-Contractor will, at the Engineers discretion be required to submit samples of cables for the Engineers approval; the Engineer reserves the right to call for the cables of an alternative manufacture without any extra cost being incurred.

P.V.C. insulated cables shall be 500/1000 volt grade. No cables smaller than 1.5mm² shall be used unless otherwise specified. The installation and the finish of cables shall be as detailed in later clauses. The colour of cables shall conform with the details stated in the "Cable Braid and insulation Colours" Clause.

3.13 ARMoured P.V.C. INSULATED AND SHEATHED CABLES:

Shall be 600/1000 volt grade manufactured to Ks 04-194:1988 and Ks 04-187/188 with copper stranded conductors.

The wire armour of the cable shall be used wholly as an earth continuity conductor and the resistance of the wire armour shall have a resistance not more than twice of the largest current carrying conductor of the cable.

P.V.C./S.W.A./P.V.C. cables shall be terminated using "Telecom" "B" type or approved equal or approved equal glands and a P.V.C. tapered sleeve shall be provided to shroud each gland.

Where cables rise from floor level to switchgear etc., they shall be protected by P.V.C. conduit, to a height of 600mm from finished floor level, whether the cable is run on the surface or recessed into the wall.

3.14 CABLE SUPPORTS, MARKERS AND TILES

All PVC/SWA/PVC cables run inside the building shall be fixed in rising ducts or on ceilings by means of die cast cables hooks or clamps, or appropriate size to suit cables, fixed by studs and back nuts to their channel sections.

Alternatively, fixing shall be by BICC claw type cleating system with die-cast cleats and galvanised mild steel back straps or similar approved equal method. For one or two cables run together the cleats shall be fixed a special channel section supports or backstraps described above which shall in turn be secured to walls or ceilings of ducts by rawbolts.

In excessively damp or corrosive atmospheric conditions special finishes may be required and the Sub-contractor shall apply to the Engineer for further instructions before ordering cleats and channels for such areas.

The above type of hooks and clamps and channels or cleats and blackstraps shall also be used for securing cables in vertical ducts.

Cables supports shall be fixed at 600mm maximum intervals, the supports being supplied and erected under this Sub-contract. Saddles shall not be used for supporting cables nor any other type of fixing other than one of the two methods described above or other system which has received prior approval of the Engineer;

Cables are to be kept clear of all pipe work and the Sub-contractor shall work in close liaison with other services Sub-contractors.

The Sub-Contractor shall include for the provision of fixing of approved type coloured slip on cables end markers to indicate permanently the correct phase and neutral colours on all ends.

Provision shall be made for supplying and fixing approved non-corrosive metal cable markers to be attached to the outside of all PVC/SWA/PVC cables at 15mm intervals indicating cable size and distinction.

Where PVC/SWA/PVC cables are outside the building they shall be laid underground 750mm deep with protecting concrete interlocking cover tiles laid over which shall be provided and laid under this Sub-contract.

All necessary excavations and reinstatement of ground including sanding or trenches will be carried out by the Sub-Contractor, unless otherwise stated.

3.15 PVC INSULATED CABLES

Shall be of non-braided type as CMA reference 6491 x 600/1000/1000 volt grade cables, or equal approved.

PVC cables shall conform to the details of the “Cables and Flexible cords” and “Cable Braid and Insulation Colours” clauses.

3.16 HEAT RESISTING CABLES

Final connections to cookers, water heaters, etc., shall be made using butyl rubber insulated cable as CMA reference 610 butyl (Single core 600/1000 Volt).

This type of cable shall be used in all instances where a temperature exceeding 100°F, but not exceeding 150°F is likely to be experienced. Final connections to all lighting fittings (and other equipment where a temperature in excess of 150°C likely to be experienced) shall be made using silicon rubber insulated cable or equal and approved.

3.17 FLEXIBLE CORDS

Shall be in accordance with the “Cable and Flexible Cords” clause. No cord shall be less than 24/0.2mm in size unless otherwise specified. Circular white twin TRS flex shall be used for plain pendant fittings up to 100 watts. For all other types of lighting fittings the flexible cable shall be silicone rubber insulated.

No polythene insulated flexible cable shall be used in any lighting fitting or other appliance (see “Heat Resisting Cables” Clause 30).

3.18 CABLE ENDS AND PHASE COLOURS

All cable ends connected up in switchgear, MCB panels etc., shall have the insulation carefully cut back and the ends sealed with Hella rubber slip on cable end markers.

The markers shall be of appropriate phase colour for switch and all other live feeds to the details of the “Cable Insulation Colours” clause. Black cable with black end markers shall only be used for neutral cables.

3.19 CABLE INSULATION COLOURS

Unless otherwise stated in later clauses the insulation colours shall be in accordance with the following table. Where other systems are installed the cable colours shall be in accordance with the details stated in the appropriate clause.

<u>SYSTEM</u>	<u>INSULATION COLOUR</u>	<u>CABLE END MARKER</u>
Main and Sub-Main		
a) Phase	Red	Red
b) Neutral	Black	Black
1) Sub-Circuits Single Phase		
a) Phase	Red	Red
b) Neutral	Black	Black

3.20 SUB-CIRCUIT WIRING

For all lighting and sockets wiring shall be carried out in the “looping in” system and there shall be no joints whatsoever. No lighting circuits shall comprise more than 20 points when protected by 10A MCB. Cables with different cross-section area of copper shall not be used in combination.

Lighting circuits P. V.C. cable 1.5mm² for all lighting circuits indicated on the drawing.

Power circuits P.V.C cable (minimum sizes).

- (i) 2.5mm² for one, two or three 5Amp sockets wired in parallel.
- (ii) 2.5mm² for one 15Amp socket.
- (iii) 2.5mm² for maximum of ten switched 13 Amp sockets wired from 30 Amp MCB.

The wiring sizes for lighting circuits and sockets are shown on the drawings. In such cases, the sizes shown on the drawings shall prevail over the sizes specified.

Wiring sizes for other appliances shall be shown on the drawing or specified in later clauses of this specification.

3.21 SPACE FACTOR

The maximum number of cables that may be accommodated in a given size of conduit or trunking or duct is not to exceed the number in Tables B.5 and B.6 or as stated in Regulation B.91, B.117 and B.118 of the I.E.E Regulations whichever is appropriate.

3.22 INSULATION

The insulation resistance to earth and between poles of the whole wiring system, fittings and lumps, shall not be less than the requirements of the latest edition of the I.E.E Regulations. Complete tests shall be made on all circuits by the Sub-contractor before the installations are handed over.

A report of all tests shall be furnished by the Sub-Contractor to the Engineer. The Engineer will then check test with his own instruments if necessary.

3.23 LIGHTING SWITCHES

These shall be mounted flush with the walls, shall be contained in steel or alloy boxes and shall be of the gangs ratings and type shown in the drawings. They shall be as manufactured by M.K. Electrical Ltd., or other equal and approved to KS 04 – 247: 1988

3.24 SOCKETS AND SWITCHED SOCKETS

These shall be flush pattern in steel/pvc box and shall be of the gangs and type specified in the drawings.

They shall be 13-Amp, 3-pin, shuttered, switched and as manufactured by “M.K. Electrical Co. Ltd.”, or other approved equal to KS 04 – 246: 1987

3.25 FUSED SPUR BOXES

These shall be flush, D.P switched as in steel/pvc box and of type and make specified in

the drawings complete with pilot light and as manufactured by “M. K. Electrical Company Ltd”, or other approved equal. KS 04 – 247: 1988

3.26 CONNECTORS

Shall be specified in the drawings and appropriate rating. These shall be fitted at all conduit box lighting point outlets for jointing of looped P.V.C cables with flexible cables of specified quality.

3.27 LAMPHOLDERS

Shall be of extra heavy H.O skirted and shall be provided for every specified lighting fitting and shall be B.C., E.S., or G.E.S as required. All E.S. and G.E.S. holders shall be heavy brass type (except for plain pendants where the reinforced bakelite type shall be used). The screwed cap of the E.S and G.E.S. holders shall be connected to the neutral.

Where lampholders are supported by flexible cable, the holders shall have “cord grip” arrangements and in the case of metal shades earthing screws shall be provided on each of the holders.

The Sub-Contractor must order the appropriate type of holder when ordering lighting fittings, to ensure that the correct types of holders are provided irrespective of the type normally supplied by the manufacturers.

3.28 LAMPS

All lamps shall be suitable for normal stated supply voltage and the number and sizes of lamps detailed on the drawings shall be supplied and fixed. The Sub-Contractor must verify the actual supply voltage with the supply authority before ordering the lamps.

Tungsten filament lamps shall be manufactured in accordance with KS 04 – 112:1978 for general service lamps and KS 04 – 307:1985 for lamps other than general services. Tubular fluorescent lamps shall comply with KS 04 – 464:1982

LED lamps shall be used in all fittings unless otherwise specified.

3.29 LIGHTING FITTINGS

This Contract shall include for the provision, handling charges, taking the delivery, safe storage, wiring (including internal wiring) assembling and erecting of all lighting fittings shown on the drawings.

All fittings and pendants shall be fixed to the conduit boxes with brass R/H screws. These to be in line with metal finish of fittings. The lighting fittings are detailed for the purpose of establishing a high standard of finish and under no circumstances will substitute fittings be permitted.

In case of rectangular shaped ceiling fittings, the extreme ends of the fittings shall be secured to suitable support in addition to the central conduit box fittings. Supports shall be provided and fixed by the Sub-Contractor.

The whole of the metal work of each lighting fittings shall be effectively bonded to earth.

In the case of ball and/or knuckle joints short lengths of flexible cable shall be provided, bonded to the metal work on either side of the joints. If the above provisions are not made by the manufacturers -, the Sub-contractor shall include cost of additional work necessary in his tender. See “Flexible Cords” clause for details of internal wiring of lighting fittings. Minimum size of internal wiring shall be 20/0.20mm (23/0067). Each lighting fitting shall be provided with number type and size of lamps as detailed on the drawings. It is to be noted that some fittings are suspended as shown on the drawings.

Where two or more points are shown adjacent to each other on the drawings, e.g socket outlet and telephone outlet, they shall be lined up vertically or horizontally on the centre lines of the units concerned.

Normally, the units shall be lined up on vertical centre lines, but where it is necessary to mount units at low level they shall be lined up horizontally.

3.30 POSITIONS OF POINTS AND SWITCHES

Although the approximate positions of all points are shown on the drawings, enquiry shall be made as to the exact positions of all M.C.B panels, lighting points, socket outlets etc, before work is actually commenced. The Sub-contractor must approach the Architect with regard to the final layout of all lights on the ceiling and walls.

The Sub-contractor must consult with the Engineer in liaison with the Clerk of Works, or the General Foreman on site regarding the positions of all points before fixing any conduit etc. The Sub-Contractor shall be responsible for all alterations made necessary by the noncompliance with the clause.

3.31 CURRENT OPERATED EARTH LEAKAGE CIRCUIT BREAKER

Current operated earth leakage circuit breaker shall conform to B.S.S. 4293:68 rated at 240 volts D.P. 50 cycles A.C. Mains.

The breaker shall be provided with test switch and fitted in weather proof enclosure for surface mounting. The rated load current and earth fault operating current shall be as specified in the drawings. These shall be as manufactured by Crabtree, Siemens or other equal and approved.

3.32 M.V. SWITCHBOARD AND SWITCHGEAR

The switchboard shall be manufactured in accordance with KS04-226 which co-ordinates the requirements for electrical power switchgear and associated apparatus. It is not intended that this K.S. should cover the requirements for specified apparatus for which separate Kenyan Standard exist. All equipment and material used in the switchboard shall be in accordance with the appropriate Kenya Standard.

The switchboard shall comprise the equipment shown on the drawings together with all current transformers, auxiliary fuses, labels, small wiring and interconnections necessary for the satisfactory operation of the switchboard

Switchboard shall be of the flush fronted, enclosed, metal clad type with full front or rear access as called for in the particular specifications, suitable for indoor use, sectionalized as necessary to facilitate transport and erection. The maximum height of the switchboard is to be approximately 2.0 meters. A suitable connection chamber containing all field terminals shall be provided at the top or bottom of the switchboard as appropriate.

Before manufacture, the Contractor shall submit to the consulting Engineer for approval of detailed drawings showing the layout, construction and connection of the switchboard.

All bus-bars and bus-bar connections shall consist of high conductivity copper and be provided in accordance with KS 04-226: 1985. The bus-bars shall be clearly marked with the appropriate phase and neutral colours which should be red, yellow, blue for the phases and black for neutral. The bus-bars shall be so arranged in the switchboard that the extensions to the left and right may be made in the future with ease should the need arise.

Small wiring, which will be neatly arranged and cleated, shall be executed in accordance with B.S. 158 and the insulation of the wiring shall be colored according to the phase or neutral connection.

Switches and fuse switches, shall be in strict accordance with KS04-183:1978 Class 2 switches. Means of locking the switch in the "OFF" position shall be provided.

All fuse switches shall comply with KS04-183:1978, PARTS 2 and 3 a fault rating at least equal to the fault rating of the switchboard in which they are installed. Cartridge fuse links to KS 04-183:1978 category A.C. 46, class Q1 and fusing factor not exceeding 1.5 shall be supplied with each fused switch.

Mounting arrangements shall be such that individual complete fuse switches may be disconnected and withdrawn when necessary without extensive dismantling work. When switches are arranged in their formation all necessary horizontal and vertical barriers shall be provided to ensure segregation from adjacent units. Means of locking the switch in the "OFF" position shall be provided.

3.33 STEEL CONDUITS AND STEEL TRUNKING

Conduits shall be of heavy gauge class "B" welded to Standard specification KS 04-180:1985. In no case will conduit smaller than 20mm diameter be used on the works. Conduits installed within buildings shall be black enameled finish except where specified otherwise. Where installed externally or in damp conditions they shall be galvanised. Conduit fittings, accessories or equipment used in conjunction with galvanised conduits shall also be galvanised or otherwise as approved by the service engineer.

Metal trunking shall be fabricated from mild steel of not less than 18 swg. All sections of trunking shall be rigidly fixed together and attached to the framework or fabric or the building at intervals of not less than 1.2m. Joint trunking shall not overhang fixing points by more than 0.5m

All trunking shall be made electrically continuous by means of 25 x 3mm copper links across each joint and where the trunking is galvanised, the links shall be made by galvanised flat iron strips.

All trunking fittings (i.e. Bends, tees, etc) shall leave the main through completely clear of obstructions and continuously open except through walls and floors at which points suitable fire resisting barriers shall be provided as may be necessary. The inner edge of bends and tees shall be chamfered where cables larger than 35mm² are employed.

Where trunking passes through ceilings and walls the cover shall be solidly fixed to 150mm either side of ceilings and floors and 50mm either side of walls.

Screws and bolts securing covers to trunking or sections of covers together shall be arranged so that damage to cables cannot occur either when fixing covers or when installing cables in the trough.

Where trunking is used to connect switchgear or fuseboards, such connections shall be made by trunking fittings manufactured for this purpose and not by multiple conduit couplings.

Where vertical sections of trunking are used which exceed 4.5m in length, staggered tie off points shall be provided at 4.5m intervals to support the weight of cables.

Unless otherwise stated, all trunking systems shall be painted as for conduit.

Where a wiring system incorporates galvanized conduit and trunking, the trunking shall be deemed to be galvanized unless specified otherwise.

The number of cables to be installed in trunking shall be such as to permit easy drawing in without damage to the cables, and shall in no circumstances be such that a space factor of 45% is exceeded.

Conduit and trunking shall be mechanically and electrically continuous. Conduit shall be tightly screwed between the various lengths so that they butt at the socketed joints. The internal edges of conduit and all fittings shall be smooth, free from burrs and other defects. Oil and any other insulating substance shall be removed from the screw threads; where conduits terminate in fuse-gear, distribution boards, adaptable boxes, non-spouted switchboxes, etc., they shall, unless otherwise stated, be connected thereto by means of smooth bore male brass bushes, compression washers and sockets. All exposed threads and abrasions shall be painted using an oil paint for black enamelled tubing and galvanising paint for galvanised tubing immediately after the conduits are erected. All bends and sets shall be made cold without altering the section of the conduit. The inner radius of the bend shall not be less than four (4) times the outside diameter of the conduit. Not more than two right angle bends will be permitted without the inter-position of a draw-in-box. Where straight runs of conduit are installed, draw-in-boxes shall be provided at distances not exceeding 15m. No tees, elbows, sleeves, either of inspection or solid type, will be permitted.

Conduit shall be swabbed out prior to drawing in cables, and they shall be laid so as to

drain of all condensed moisture without injury to end connections.

Conduits and trunking shall be run at least 150mm clear of hot water and steam pipes, and at least 75mm clear of cold water and other services unless otherwise approved by the services engineer.

All boxes shall conform to KS 04 – 668: 1986, to be of malleable iron, and black enamelled or galvanised according to the type of conduit specified. All accessory boxes shall have threaded brass inserts.

Box lids where required shall be heavy gauge metal, secured by means of zinc plated or cadmium plated steel screws.

All adaptable boxes and lids of the same size shall be interchangeable.

Boxes used on surface work are to be tapped or drilled to line up with the conduit fixed in distance type saddles allowing clearance between the conduit and wall without the need for setting the conduit.

Where used in conjunction with mineral insulated copper sheathed cable, galvanised boxes shall be used and painted after erection.

Draw-in boxes in the floors are generally to be avoided but where they are essential they must be grouped in positions approved by the services engineer and covered and by the suitable floor traps, with non-ferrous trays and covers.

The floor trap covers are to be recessed and filled in with a material to match the floor surface.

The Sub-contractor must take full responsibility for the filling in of all covers, but the filling in material will be supplied and the filling carried out by the main building contractor.

Where buried in the ground outside the building the whole of the buried conduit is to be painted with two coats of approved bitumastic composition before covering up.

Where run on the surface, unpainted fittings and joints shall be painted with two coats of oil bound enamel applied to rust and grease free metalwork.

3.34 TESTING ON SITE

The Sub-contractor shall conduct during and at the completion of the installation and, if required, again at the expiration of the maintenance period, tests in accordance with the relevant section of the current edition of the Regulations for the electrical equipment of buildings issued by the I.E.E of Great Britain, the Government Electrical Specification and the Electric Supply Company's By-Laws.

(a) Tests shall be carried out to prove that all single pole switches are installed in the 'live' conductor.

(b) Tests shall be carried out to prove that all socket outlets and switched socket outlets are connected to the 'live' conductor in the terminal marked as such, and that each earth pin is effectively bonded to the earth continuity system. Tests shall be carried out to verify the continuity of all conductors of each 'ring' circuit.

(c) Phase tests shall be carried out on completion of the installation to ensure that correct phase sequence is maintained throughout the installation. Triplicate copies of the results of the above tests shall be provided within 14 days of the witnessed tests and the Sub-contractor will be required to issue to the service engineer the requisite certificate upon completion as required by the regulations referred to above.

(d) Any faults, defects or omissions or faulty workmanship, incorrectly positioned or installed parts of the installation made apparently by such inspections or tests shall be rectified by the Sub-contractor at his own expense.

(e) The Sub-contractor shall provide accurate instruments and apparatus and all labour required to carry out the above tests. The instruments and apparatus shall be made available to the services engineer to enable him to carry out such tests as he may require.

The Sub-contractor shall generally attend on other contractors employed on the project and carry out such electrical tests as may be necessary.

The Sub-contractor shall test to the services engineer's approval and as specified elsewhere in this specification or in standards and regulations already referred to, all equipment, plant and apparatus forming part of the works and before connecting to any power or other supply and setting to work.

Where such equipment, etc., forms part of or is connected to a system whether primarily or of an electrical nature or otherwise (e.g. air conditioning system) the Sub-contractor shall attend on and assist in balancing, regulating testing and commissioning, or if primarily an electrical or other system forming part of works, shall balance, regulate, test and commission the system to the service engineer's approval.

APPENDIX TO GENERAL SPECIFICATIONS OF MATERIALS AND WORKS

The electrical sub-contractor shall comply with the following: -

- 1 Government Electrical Specifications No. 1 and No. 2.
- 2 All requirements of Kenya Power Company Limited
- 3 All requirements of Energy Regulatory Commission (ERC).

BILL OF QUANTITIES

1. SITE LOCATION

The site of the proposed works is at **Muguga, Kiambu County**

2. SCOPE OF WORKS

The works to be carried out under this sub-contract comprise supply, installation, testing and commissioning of the following: -

- a. **Electrical Works**
- b. **CCTV Cameras**
- c. **Access control**

3. MATERIALS FOR THE WORKS

Materials shall be as specified in Section D, E and in the Bills of Quantities of this document which shall be read in conjunction with contract drawings. Alternative materials shall be accepted only after approval by the Project Manager.

4. BROCHURES FOR DEVICES

For consideration and qualification tenderers shall, at their own cost, provide coloured manufacturer's brochures detailing technical literature and specifications where applicable

5. REGULATION AND STANDARD

The works shall comply with the provisions of the following as necessary and relevant:

- ISO/IEC, CCK, ATM CENELEC 11801
- ANSI/EIA/TIA 56
- Latest Edition of IEE Regulation
- Kenya Bureau of Standards (KEBS)
- Institution of Electrical Engineers (LE.E) Wiring Regulations
- Current recommendation of CCITT and CC1R
- Electric Power Act and Rules made there under.

6. ELECTRICAL REQUIREMENTS

The equipment to be supplied shall be capable of being operated from 240V AC 50Hz power supply.

7. MANDATORY REQUIREMENTS

- A. All equipment and materials used shall be standard components that are regularly manufactured and used in the manufacturer's system.
- B. All systems and components shall have been thoroughly tested and proven in actual use.
- C. All systems and components shall be provided with the availability of a, 24-hour technical assistance program (TAP) from the manufacturer. The TAP shall allow for immediate technical assistance for either the dealer/installer or the end user at no charge.
- D. All systems and components shall be provided with a one-day turn around repair express and 24-hour parts replacement. The repair and parts express shall be guaranteed by the manufacturer on warranty and non-warranty items.
- E. The supplier shall be the manufacturer, or the manufacturer appointed agent (proof to be submitted).

The Offered system has been installed and commissioned by the supplier in other locations.

8. WORKING DRAWINGS

The Contractor shall submit to the Project Manager working drawings for the proposed system for approval. The drawings will show the locations of and identifiers for all cable routing and terminations, telecommunication outlets/connectors. Location of core switch and Edge switches.

**ELECTRICAL SUB CONTRACTOR
PART A**

IP CCTV SURVEILLANCE CAMERAS:

1.00 MINIMUM REQUIREMENTS FOR THE PROPOSED IP CCTV SYSTEM

The cameras shall have the following minimum specifications but cameras with higher specifications shall be accepted:

a) IP Dome CCTV Cameras-5MP

- 1/2.9” progressive scan RGB CMOS
- Built in Infrared 20 meters minimum
- Progressive scan RGB CMOS 1/2.5”Wide Dynamic Range – 120Db
- 3.1mm, F2.0 Horizontal field of view: 100° Vertical field of view: 54° Fixed iris, IR corrected
- Forensic WDR, Lightfinder and OptimizedIR
- Motorized Varifocal Auto Iris lens
- long-life 850 nm IR LEDs
- Day and night vision; Minimum illumination 0.1lux (colour), 0lux (B/W) IR on
- Multi-view streaming 2 individually cropped out view areas
- IP network capable
- True day and night vision capability (ICR)
- Power over Ethernet IEEE 802.3af/802.3at Type 1 Class 3 Max 12.0 W, typical 3.7 W
- HDMI output
- H.265 video compression
- Accessible edge storage with 128GB internal MicroSD card slot
- True day and night vision capability
- Tampering detection, Face detection, Audio Detection, Motion detection and event triggered alarm processing
- Masking Capability,
- IP66- and NEMA 4X-rated, IK10 impact-resistant
- ONVIF protocol Compliant
- Network NIST SP500-267 Compliant

b) IP Bullet camera – 4MP

- Mega Pixel Full HD Indoor IP Bullet Camera with Infrared
- Built in Infrared 30 meters minimum
- imaging sensor with Wide Dynamic Range
- 2.8 - 12mm motorized Lens
- Minimum illumination 0.01lux (colour)
- IP network capable
- PoE capability
- H.265,H.264,MJPEG video compression

- Accessible edge storage with internal MicroSD card slot
 - True day and night vision capability
 - I/O - 1 Alarm in / 1 Alarm out 1 Way Audio
 - Tampering detection, Face detection, Audio Detection, Motion detection & Privacy Masking and event triggered alarm processing
 - Vandal proof IK-10 rating housing
 - Weather proof IP66 rating
 - ONVIF protocol Compliant
- (State make and type, and enclose brochures/catalogues)

1.01 MOUNTING BRACKETS

The Brackets shall:

- Be suitable for wall or ceiling mounting of a single camera.
- Be at least 5.5"length
- Have an auto lock facility.

1.02 CAMERA HOUSING

The camera housing shall:

- Be IP66 rated with integral cable management.
- Be Weatherproof and constructed from aluminum with epoxy coating.

1.03 CABLING

- All cables must pass through conduits or trunking.
- All cables and connectors shall be labelled.
- No distortion due to kinks, sharp bends or excessive hauling tension shall be allowed.
- Cables shall be run in a manner eliminating any possibility of strain on the cable itself or on the terminations.
- Cables shall have no joints or splices.
- Cables shall be kept at a minimum distance of 150mm from items liable to become hot or cold.
- Bending radii shall be not less than eight times the overall cable diameter.
- The manufacturers hauling tension shall not be exceeded.
- All cable ties and fixings shall be tightened to support the cable loom without distortion of the cable sheath.
- The STP 4 pair shall be of cat 6A grade and exceed ANSI/TIA/EIA-568-Aj and ISO/IEC 11001standards. Cat 6A structured cabling shall be used throughout the entire installation.

(State make and type, and enclose catalogues)

PART B
ACCESS CONTROL SYSTEM

1.00 ACCESS CONTROL COMPONENTS

The main components of an access control system are:

- a) Intelligent System Controller
- b) The proximity cards
- c) The magnetic locks
- d) Biometric readers

(a) PROFESSIONAL MULTI-BIOMETRIC FACE AND FINGERPRINT IP READER

Professional facial recognition and fingerprint reader is combined in this reader. It also includes an RFID Prox reader. Identify or verify people by their face, fingerprint, proximity card or PIN/password... or any combination, all in one network attached reader. Built-in infrared light source enables operation in dimly lit rooms.

- **Capacity:** Fingerprint: 4000 Face: 2,000 Card: 10,000
- **Display:** 2.8 Inch TFT-LCD Touch Screen
- **Communication:** Ethernet, RS 232, RS485, Wiegand Input and Output, USB Host
- **Power :**12V DC, 3A Comes with power adapter (Can also be powered using PoE splitter)
- **Environment:** Operating Temperature: 14° F to 122° F (-10° C to 50° C)
- **Dimensions:** 7.5 x 3.3 x 4 inches
- **Supported Card Formats:** ID card 125 KHz, Optional: HID, or 13.56 MHz Mifare Card, iClass,
- **Access control:** Lock Relay Output, Alarm Output/Auxiliary Input, Exit Button/Door Sensor, Doorbell Output
- **Communication:** TCP/IP, RS485 (for slave reader) USB Host Wiegand Input/Output
- **Biometric Performance:** A high performance sensor and processor matches fingerprints or face in less than 1.5 secs.
- **Hardware:** Fingerprint Sensor 2.8 Inch TFT-LCD Touch Screen 125 kHz or 13.56 MHz Card Reader (options)

Features

- High performance and reliable fingerprint capture and identification. Advanced facial recognition algorithm
- Live finger detection
- Multiple verification modes – Fingerprint, Facial Recognition, Credential, and Password
- Built-in Camera stores up to 4,000 snapshots Network-attached

(b) ACCESS CONTROL SYSTEM SOFTWARE

Table 53: TECHNICAL SPECIFICATIONS

Compliant Standards:

Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure(Mandatory)	
Key Features	<ul style="list-style-type: none"> • The Access Software offers a map viewer, which provides a graphical representation of the premises with device control directly from the map. Monitoring modules shall also include a text based transaction module • Integrated video functionality • Visitor Management- Visitor management shall allow for the pre-authorization and first time arrival of guests to a site. • The operator shall have the following functionality via GUI: <ul style="list-style-type: none"> • Create a new visitor • Set a start and end time for the visitor • Choose the access permissions for the visitor • Generate a one-time pin (OTP) for the visitor to gain access • Send an email with information pertaining to visitors visit details • The software shall be linked via the API / integration layer in order for the visitor to be enabled in the ACS system. • All data shall be able to be reported on via the ACS software. • The ACS software shall make available the remote / mobile biometric and card units to be used in conjunction with the Visitor Management module • Threat levels – when activated, pre-selected doors shall be opened automatically or security will be increased, based upon the defined rules and depending upon the severity of the threat. • Scheduled Tours – ability to create predefined schedules for cleaning, guards or maintenance staff with online validation that defined points have been reached within a particular time frame. 	
	<ul style="list-style-type: none"> • Alarm Mode – when an intrusion or fire alarm is activated, a signal shall be received by the ACS and system configured actions shall be triggered. • Time Triggered Actions – specified actions may be activated at specified times with the capacity to generate 512 Time Triggered Actions per site. 	

Item	Minimum Specifications	Proposed Solution
	<ul style="list-style-type: none"> • Holidays - feature to define Holidays and qualify access rights accordingly. • The ACS shall provide suitable T&A hardware and facilitate integration of a T&A solution. • The facility to set a Relaxed or Strict APB status • The option of single tag use, or multiple tag use per location. • An interface for the administration of tag holders. 	
Access Modes	<ul style="list-style-type: none"> • Card only • Card with PIN (Verification PIN) • PIN or Card (Identification PIN) • Biometrics 	
Integration	<p>The ACS software supports integration options via XML format commands for one or more or all the following 3rd party systems:</p> <ul style="list-style-type: none"> • Intrusion Alarm systems • Fire alarms • Human Resources Databases • Time and Attendance Systems • ERP, SCM and CRM Systems • Student Enrolment Systems • Digital and Network Video Recording Systems • Visitor Enrolment solutions 	
Reports	<ul style="list-style-type: none"> • The Reports feature include the following; • Tag Holder report – Displays information on tag holders in the system. • Transaction Report – Displays all tag holders transactions on a specific date • Zone Occupancy – Provides APB zone occupancy information • Time Based Reports – Combines a number of time based reports • The ability to run and save customized reports. • Feature to export all reports to PDF and CSV • Contain graphical representation for ease of use in reports i.e. graphs • Allow for full audit reporting of all events and actions which take place on the ACS system. • The ACS reports facilitate customizable fields. Reports shall be filterable and columns shall be able to be configurable from a display perspective 	
Card Enrollment	USB enrollment devices AMC connected readers	

Item	Minimum Specifications	Proposed Solution
Operator Security	<ul style="list-style-type: none"> • The ACS software shall include an Operator Security module that will enable the System Administrator to define operator groups for users who will operate the various modules. • The Operator Security module shall facilitate the creation of users and passwords, as well as user groups. • The System Administrator shall be able to set up application security as well as granular security settings within each application. • The Operator Security module shall facilitate the assignment of tag holder access groups to selected operator groups. • The ACS must provide configurable security options to limit system users' activity within it. • Such operator security must be configurable on a per user group basis. 	
System Health Check Reporting	<ul style="list-style-type: none"> • The ACS system shall have a health checking or self-diagnostic capability. The Health check shall inform an administrator/system integrator of any faults or issues as well as explain any user initiated elements that are at variance with the rules of implementation. This process must be an automated process • The option of linking up to 30 access groups to a single tag. • The option of assigning access groups across multiple sites in the ACS. • The ability to configure up to 10 000 Access Groups per site • It shall be possible to administer and view the ACS sites remotely via an HTML5 compliant browser using any HTML 5 compatible device 	

C) POWER SUPPLY MODULE

Table 54: TECHNICAL SPECIFICATIONS

Compliant Standards:

Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure(Mandatory)	
Key Features	<ul style="list-style-type: none"> • AC Power failure supervision relay • Battery failure / low battery supervision relay • DC Power failure supervision relay (EAP-5D5Q only) • Auxiliary output relay 	

	<ul style="list-style-type: none"> • Relays rated 3A@24VDC, 3A@120VAC • Adjustable voltage range to compensate for voltage drop • Built-in backup battery charger (battery not included) • Selectable 2.2k 9 End-of-Line (EOL) resistor for AC failure and battery failure supervision relays via DIP switch • Selectable delay timer (5 seconds, 5 minutes, 5 hours) for AC failure supervision relay via DIP switch • LED Status indicator for AC input, DC output and channel outputs 	
Power	<ul style="list-style-type: none"> • Operating Input voltage: 240 VAC • Field-selectable 12 or 24 VDC output • Total continuous output current: 5A@12VDC, 2.5A@24VDC • Individually fused power output (PTC-type fuses) rated at 1.1A, fail-safe or fail-secure modes. • AC Input fuse rated at 3.15A • Adjustable Output Voltage Range: 11~15 @ 12VDC setting, via VR switch, 23~28 @ 24VDC setting, via VR switch • Number of Outputs: 5 	
Enclosure	<ul style="list-style-type: none"> • Heavy-duty steel case with ventilation holes • Enclosure large enough to fit (>two (2) 12V/12Ah batteries) • Removable steel cover for easy access to power connections 6ft Power cord and battery leads included <p>Dimensions: (377x363x105 mm)</p>	
Warranty	Comprehensive Manufacturer's Warranty (Attach Manufacturer's Warranty Statement)	

(d). MAGNETIC LOCK

Standard: ANSI/BHMA A156.23 Grade 1 compliant

Key Feature: Electromagnetic Narrow Line (projects only 2-11/16 into the opening) EMLock, 1200 lbs/600lbs holding force and failsafe access control, Clear anodized aluminum, wire chamber and integrated PC board with wiring terminal block, dual 12/24VDC input designed to ensure trouble free interface with electronic access control systems, automatic door operators, peripheral equipment and fire life safety systems for emergency release.

Electrical Data: 300mA/540mA @ 24VDC/12VDC

Sensor: Magnetic bond sensor, Door status sensor and LED Status indicator

Measurement: 12-1/2”Lx2-1/8”Hx1-11/16”D

(e). PUSH TO EXIT BUTTON

Table 55: TECHNICAL SPECIFICATIONS Compliant Standards: NFPA Compliant

Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure(Mandatory)	
Key Features	<ul style="list-style-type: none">• Illuminated switch button high impact resistant material• Integrated electronic timer, adj. 1-60 sec,12/24VDC, DPDT 2Amp contact• Wire Leads 6”, 20 Gauge• Stainless Steel – Standard• 1 Green LED narrow frame mount exit switch	

(f). PROXIMITY CARDS

Table 56: TECHNICAL SPECIFICATIONS

Compliant Standards: ISO/IEC 15693

Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure(Mandatory)	
Key Features	<ul style="list-style-type: none"> • 13.56 MHz read/write contactless smart card technology provides high-speed, reliable communications with high data integrity. • Constructed with ABS shell and PVC cover label, offering durable packaging. • Available in 2k bit (256 Byte), two application area configurations only. • iCLASS technology ensures high security with mutual authentication, encrypted data transfer, and 64-bit diversified keys for read/write capabilities. • Meets ISO 15693 standard for contactless communications. • A PVC Overlay allows for on-site Photo ID production using most direct image printers. • Triple DES encryption. 	
Data Retention	<ul style="list-style-type: none"> • 10 Years 	
Write Endurance	<ul style="list-style-type: none"> • Min. 100,000 cycles 	
Memory Type	<ul style="list-style-type: none"> • EEPROM, read/write 	
Band Rate	<ul style="list-style-type: none"> • 26 Kbps 	
Transaction Time	<ul style="list-style-type: none"> • <100ms typical 	
Operating Humidity	<ul style="list-style-type: none"> • 5-95% non-condensing 	
Operating Temperature	<ul style="list-style-type: none"> • -40° to 160° F (-40° to 70° C) 	
Card Construction	<ul style="list-style-type: none"> • ABS Shell with PVC Cover Label. 	
Weight	<ul style="list-style-type: none"> • 0.24 oz (6.8 g) 	
Dimensions	<ul style="list-style-type: none"> • 2.125" x 3.375" x 0.070" max.(5.40 x 8.57 x 0.18 cm) 	
Typical Maximum Read Range	<ul style="list-style-type: none"> • R10: 1.5-2.5" (3.8-6.3 cm) • R30/RW300: 1.5-3.0" (3.8-7.6 cm) • R40/RW400: 2.5-4.5" (5.1-10.2 cm) • RK40/RWK400: 3.0-4.0" (6.3-8.9 cm) 	
Warranty	<ul style="list-style-type: none"> • Comprehensive Manufacturer's Warranty (Attach Manufacturer's Warranty Statement) 	

(g). OVERRIDE KEY SWITCH

Table 57: TECHNICAL SPECIFICATIONS

Compliant Standards:

Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Key Features	Tamper Resistant, Recessed Cylinder Tamper Resistant Spanner Screws Heavy Duty All Steel Assembly Stainless Steel Faceplates of 0.25" Thickness of Aluminum Large Actuator for Positive and Consistent Activation 6 Amp @ 30 VDC Resistive 7", 22 Gauge Wire Leads Compatible with 1.0" or 1.375" Mortise Cylinder(included) Anti-Tamper Sensor, SPDT Turning the key left or right actuates and latches the contact. Contact position is maintained until the key is inserted and turned again.	

(H). ENCLOSURE

Table 58: TECHNICAL SPECIFICATIONS Compliant

Standards: UL294

Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Key Features	<ul style="list-style-type: none">• Housing with pre-assembled cables Cable set - partially pre-assembled• Cable ties (short) for securing the cables• Screws and screw anchors for wall-mounting 1 DIN rail for mounting	

(i). EMERGENCY EXIT DEVICE

Table 59: TECHNICAL SPECIFICATIONS Compliant Standards: CE marked to BS E

Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Key Features	<ul style="list-style-type: none"> • Suitable for push face of outward opening doors • point locking comprising • Single point central dead latch (active leaf • 2 point upper and lower Pullman latches (inactive leaf) • Non-handed for maximum flexibility • Max. door leaf width : 900mm or 1200mm • Anti-thrust steel dead latch • Adjustable steel strike • Rods with integral cover • Complete with signage and fixing instructions • Supplied complete with adjustable flat, corner and floor strikes to suit various door frame • overlap sizes push bar and rods can be cut down to size • Suitable for timber and metal application • Signage as required by BS EN 1125 annex A19, colored green & white as detailed in BS5499 	
Warranty	• Comprehensive Manufacturer's Warranty (Attach Manufacturer's Warranty Statement)	

(j). Table 60: WORKSTATION

Item	Description	Minimum Specifications	Bidder's Specifications
A	GENERAL SPECIFICATIONS		
1	Make	Branded	
2	Model		
3	Country of Origin		
4	Manufacturer's brochure and Specifications	Must be supplied	
B	TECHNICAL SPECIFICATIONS		
5	Processor	Corei7	
6	System Memory	4GB	
7	Disk cache	64Bit	
8	Storage sub system	1TB GB HDD	
		48XCD –ROM and CD-Writer	
		1.44MB 3.5" FDD	
9	Display/Graphics	24" colour LCD	
10	Keyboard	PS/2 Enhanced keyboard	
11	Pointing Device	PS/2 compatible optical mouse	

12	I/O Interface	1xPS/2 – compatible mouse port 2x9 Pin 1xPS/2 – compatible keyboard Serial Ports 1x25 Pin parallel port 4xUSB Ports 1xRJ45 jack for Ethernet 1xexternal VGA port HDMI	
13	Audio System	PCI 3D audio/video cards TV/FM cards External Amplified speakers	
14	Communication Interface	10/100Mbps fast Ethernet, RJ 45 jack 56K ITU V.90 data/fax modern, wake-on-ring ready	
15	Operating System Pre-load	Ms Windows XP Pro 2003 (or latest version)	
16	Application Software, pre- installed, registered and CDs supplied	Ms Windows Vista or Ms Windows XP Pro (Service Pack 2)	
17	Power sub- system	220-240V ac, 50HZ	
18	Power connectivity	Power cable compatible with CPU and UPS	
C	WARRANTY	3 year parts replacement warranty	

(k). ACCESS SYSTEM CONTROLLER

Table 61: TECHNICAL SPECIFICATIONS

Compliant Standards: • CE approved & ISO 9001

Item	Minimum Specifications	Proposed Solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Key Features	<ul style="list-style-type: none"> The System Controllers shall be intelligent hardware devices with a full on-board database of tags and access data. The System Controllers shall operate in a truly standalone mode when there is no network connection available to the ACS database engine module. Each system controller/cluster controller shall be capable of storing up to 1000 tags, and shall be capable of buffering up to 100 thousand transactions should the connection to the ACS polling module be lost. The ACS controller shall be capable of facilitating more tags and transactions if coupled with another master device (System Controller or Application Controller) 	

Item	Minimum Specifications	Proposed Solution
	<p>which increases storage and processing capacity.</p> <ul style="list-style-type: none"> • The System Controllers shall allow for the easy expansion of door controllers without the need to physically wire power and communications between these devices. • Supports full off-line functionality, including anti-pass back, access rights, emergency and lockdown modes. • RS485 – with connectivity speeds of 38,400 Baud • TCP/IP Ethernet connectivity – with support for up to 100Mbps connectivity speeds • Serial BUS – with connectivity speeds of 7,600 Baud. • Database on global Microsoft SQL platform, using HTML5 • Simple integration with CCTV, intrusion and Fire alarms • Uses AES 128-bit Encryption through a Diffie Hellman key exchange to ensure secure communications • Stores all information locally on the Cluster Controller 	
Key Functions	<ul style="list-style-type: none"> • The ACS server console shall provide an auto detect function that shall poll the RS485 bus, or the LAN/WAN for any ACS controllers • The ACS controllers shall respond back with their respective factory assigned addresses which shall be automatically inserted into the ACS database. • The ACS system controllers logical addresses shall automatically be assigned to the devices without any user intervention. • The ACS System Controller shall support up to 64 physical devices connected via RS485 terminal, communications bus, TCP/IP or proprietary solutions. • Proprietary door controllers for connection of proprietary ACS readers. • 3rd Party door controllers for connection of 3rd Party door readers such as biometric devices. • Door Controllers with the following, or a combination of the following, components built in to facilitate the opening of doors and the monitoring of doors, Dry contact relays, Digital inputs, • Ports for connection to ACS readers, Communications port for 3rd Party readers, RS485 and SBUS connectivity. • Each Door Controller shall support two (2) readers. • A Software utility to upgrade Firmware while installed on-site, without removal of the Cluster Controller. 	
Performance	<ul style="list-style-type: none"> • TCP/IP, RS485 and Serial Bus Communication 	
Hardware	<ul style="list-style-type: none"> • Ethernet and RS485 communication protocols 	

Item	Minimum Specifications	Proposed Solution
	<ul style="list-style-type: none"> • 32-bit ARM Cortex M3 processor • Operating temperature of -25°C to +60°C • 4KB Ram 48KB Flash Memory • LED diagnostic indicators • Anti-tamper switch • Real time clock battery backup 	
Power	<ul style="list-style-type: none"> • Input voltage of 12 VDC to 15 VDC • Polarity Sensitive, 140mA current, 1.7W • Power, Reverse polarity and over-current protection 	
Environment Class	<ul style="list-style-type: none"> • IP 20 	
Certifications	<ul style="list-style-type: none"> • UL(US), CE(EU), SABS (RSA) ROHS 	
Housing	<ul style="list-style-type: none"> • Plastic housing 18.6cm (l) x 7.9cm (w)x 5.7cm (h) • Housing material black ABS plastic or IPS boxed solution 	
Data Transfer	<ul style="list-style-type: none"> • Encrypted 	
Warranty	<ul style="list-style-type: none"> • Comprehensive 3 Years Manufacturer's Warranty (Attach Manufacturer's Warranty Statement) 	

2.0 BROCHURES AND TECHNICAL LITERATURE

Tenderers must enclose together with their submitted bids brochures detailing technical Literature and specifications of the active components of the access control system. The brochures shall be used to evaluate the suitability of these components. Any bid submitted without the brochures shall be considered technically non-responsive, and may subsequently be disqualified.

PART C

Table 62: ELECTRICAL LIGHT FITTING

LED PANEL LIGHT FITTING		
TECHNICAL SPECIFICATIONS		
IEC Compliant		
Item	Minimum Specifications	Proposed solution
Brand	State the brand, model and attach Technical Brochure (Mandatory)	
Operating	<ul style="list-style-type: none"> • voltage range: 130-300 V ac • frequency range: 45 -55 Hz • Power factor \geq 0.9 lagging • THD>15% • Ambient temperature range -10 to +35 °Operating • Colour Consistency \leq 5SDCM 	
Performance	<ul style="list-style-type: none"> • luminous flux - 4200 lm • System efficacy > 90lm/W • Lamp colour temperature (NW)4000K / (CW)6500K • Colour Rendering Index >80 • Median useful life \geq 30000 h • Luminaire light beam spread - 120° 	
Standards Compliance	CB/EMC/CE	
General	<ul style="list-style-type: none"> • Driver/power unit/transformer - PSU-E • Optical cover/lens type - Polystyrene bowl/cover Prismatic • Protection class IEC - Safety class II (II) 	

(A) BROCHURES FOR LED LIGHTING FITTINGS

For consideration and qualification tenderers shall, at their own cost, provide coloured manufacturer’s brochures detailing technical literature and specifications where applicable.

Table 63: SCHEDULE OF CONTRACT DRAWINGS

DRAWING NO.	DRAWING TITLE
As shall be issued by the Engineer	

Table 64: SCHEDULE OF UNIT RATES

NO:	DESCRIPTION	UNIT RATE (KSHs)
1	PVC/SWA/PVC Copper Cables per Metre a) 16 mm sq 4 Core b) 4.0mm sq SINGLE Core	
2	DP Switches a) 40A b) 32A	
3	Emergency Shutdown Switch	
4	8 ways TPN Distribution Board	
5	24' LED Monitor Screen	
6	8CH Network Video Recorder	
7	24 Port Patch Panel	
8	3M Cat 6A Patch cord	
9	1M Cat 6A Patch cord	
10	Cable Trays	

Table 66: BILL NO. 2: ELECTRICAL INSTALLATION WORKS

ITEM	DESCRIPTION	Unit Kshs	Qty	Rate	Total Kshs
2.00	LIGHTING AND POWER INSTALLATION				

ITEM	DESCRIPTION	Unit Kshs	Qty	Rate	Total Kshs
(A) LIGHTING INSTALLATION					
2.01	Supply and install lighting points using 3 x 1.5mm ² PVC insulated Copper cables to be drawn in 20mm diameter PVC heavy gauge conduits concealed on the ceiling soffit and for one Way switching but excluding the fittings and switches. Conduits to be complete with saddles and all other accessories	No	8		
2.02	Supply and install 10 Amps rated moulded plate switches(white in colour) for flush mounting and as crabtree, clipsal or approved equivalent.				
	a) One gang one way	No	2		
2.03	Supply and install the following lighting fittings				
	(a) 600x600mm 40W 4200Lumen, Recessed backlit (panel)LED luminaire of full box welded monolithic seamless steel construction with post coat powder paint finish for layin installation, with acrylic microprism and dispersal diffuser combination and high efficiency LED modules and as Eatons Taliska Range Cat No. TALP66424KZ or Philips, or Thorn or Approved equivalent	No	8		
B	POWER INSTALLATION				
2.04	Supply and install 13Amps twin switched socket outlet point for using 3 x 2.5mm ² PVC insulated copper cables drawn in 25mm diameter PVC heavy gauge conduits laid concealed in the floors and walls but without the outlet plates.	No	8		
2.05	Supply and install twin mounting plates for mounting socket outlet plates on the trunking (200mm x 50 mm)	No	8		
2.06	Supply and install White 13Amps twin switched socket outlet as MK, CRABTREE/CLIPSAL or approved equivalent.	No	8		
2.07	Supply and install A/C circuits wired using 2x4mm ² +2.5mm ² ECC PVC insulated copper cables drawn in 25 mm diameter PVC heavy gauge conduits but excluding the 20 Amps DP switch.	No	4		
2.08	Supply and install flush mounted 20Amps DP switch complete with a pilot lamp and as MK,CRABTREE or approved equivalent.	No	4		
2.09	Radial Power Point wired in 5 x 35.0 mm ² SC PVC insulated CU cables drawn in 50 mm Ø HG PVC conduits concealed in building fabric complete with all the necessary accessories excluding 50A TPN Isolator for the UPS.	No	2		
2.10	5x35mm ² SC PVC insulated CU cables drawn in 50 mmØ HG PVC conduits concealed in building fabric complete with all the necessary accessories excluding 100A TPN Isolator wired to bypass the UPS.	No	1		
2.11	Provide for security door access control points using 25mm dia PVC heavy gauge conduits complete with draw wire, saddles and all other accessories (wiring to be done by others).	No	2		

ITEM	DESCRIPTION	Unit Kshs	Qty	Rate	Total Kshs
2.12	Supply and install routing for the closed circuit television (CCTV) system in 25mm HG conduits and metal trunking system.	No	4		
2.13	Supply and install rectangular skirting trunking Type B of dimensions 200X50mm 2 compartment along all walls as indicated complete with bends, endcovers, fixing and all other accessories for mounting. Trunking to be powder coated and white in colour.	M	30		
D	POWER RETICULATION				
2.14	100mm HG ducts buried in the ground with a 100mm thick concrete surround, for laying the underground cables	LM	250		
2.15	70mm ² 4Core PVC/SWA/PVC Copper cables drawn in cable trench and rising duct from LV board TRANSFORMER ROOM to raw DB- to UPS and to Clean Power DB at the Data Centre	LM	250		
2.16	Supply and install cable lugs for item above	LM	250		
2.17	The following items for item 1.10 above:- a) Trenching to a depth of a minimum of 700mm b) Tiling with 'HATARI 'tiles c) Back filling of the trenches d) Microtunnelling to a minimum depth of 700mm across the tarmacked road	LM	7		
2.18	Power manhole size 600mm x 600mm x 750mm (deep) internally, consisting of 150mm solid concrete block walls and bottom in cement mortar (1:4), (600 x 600) mm medium duty cast iron cover and frame to BS 497	NO	80		
2.19	50A, TPN+E surface mounted interlocked switched 3 Phase socket outlet and complete with plug as MK for the incoming and outgoing supplies to and from the UPS.	NO	1		
2.20	100A 4-Pole, 3 position BYPASS switch for the UPS as MK	NO	1		
2.21	35mm ² 4 Core PVC/SWA/PVC copper cable for interwiring the Clean Power UPS, Manual Bypass Switch, Isolator, Clean Power DB complete with necessary cable lugs and any other necessary accessories	LM	1		
2.22	Supply and install recessed 6 way TPN distribution board incorporating an incomer MCB rated at 125A (without the MCBs) for Raw Power.The DB is to be as Merlin Gerlin / Hager or approved equivalent		13		
2.23	Supply and Install the following MCCBs 125A TPN as Schneider or approved equivalent to be installed at the LV board 10A (SP) 30A (SP) 20A (SP) Spare Ways Blanking Plates	NO	1		
2.24	Supply and install recessed 4 way TPN distribution board incorporating an incomer MCB rated at 125A (without	NO	1		

ITEM	DESCRIPTION	Unit Kshs	Qty	Rate	Total Kshs
	the MCBs).The DB is to be as Schneider or approved equivalent.				
2.25	Supply and install the following miniature circuit breakers (MCB'S) rated at 500Vac for the above Distribution boards. (a) 100A (TPN) (b) 50A (TPN) isolator (c) Spare Ways Blanking Plates	NO	2		
FIRE ALARM SYSTEM					
2.26	The stated brand of fire alarm items is for purposes of quality and any other brand may be installed as per engineers approval				
2.27	Supply and install smoke detector point wiring done using fire resistant 2x1.5mm ² PVC insulated copper cables drawn in 20mm dia PVC heavy gauge conduits but without the smoke detector.	NO	2		
2.28	Supply and install a smoke detector- photoelectric addressable type complete with the common base and as Menvier or approved equivalent.	NO	2		
2.29	Supply and install fire alarm manual call point wiring done using fire resistant 2x1.5mm ² PVC copper cables drawn in 20 mm dia PVC heavy gauge conduits but without the manual call point.	NO	2		
2.30	Supply and install a recessed resettable and addressable manual call point (Break Glass), as menvier or approved equivalent.	NO	2		
2.31	Supply and install emergency exit point wiring done using fire resistant 2x1.5mm ² PVC copper cables drawn in 20 mm dia PVC heavy gauge conduits but without the manual call point.	NO	2		
2.32	Supply and install 300mm 8w fluorescent emergency EXIT lighting luminaire with 3hour duration and as MENVIER Recessed Safe Edge Order Code RSEM (Menvier product catalogue 2001 pg 31).	NO	2		
2.33	Supply and install an addressable one loop fire alarm panel flush mounted on wall with 72 hour standby battery, complete with all accessories and as Menvier or approved equivalent.	NO	1		
2.34	Provide for integration, configuration and testing to work of the new installation to the existing fire alarm system installed in the building.	Item	1		
LIGHTNING PROTECTION					
2.35	AIR TERMINATION				
2.36	25x3mm copper tape including copper saddles at 1500mm intervals and bonding to other metal work in the roof , all as FURSE	Lm	30		
2.37	Copper air terminations (lightning arrestors) inclusive of base clamp and all fixing materials as FURSE	NO	2		
DOWNWARD CONDUCTOR					
2.38	Downward conductor comprising 25mm x 3 mm thick bare copper tape as FURSE	NO	10		
2.39	Copper square tape clamp for making crossing tape joints	NO	2		
	Steel conduits32mm diam. for securing the down	NO	10		

ITEM	DESCRIPTION	Unit Kshs	Qty	Rate	Total Kshs
	conductors complete with sandles				
2.40	Test clamp as FURSE	NO	2		
	EARTHING.				
2.41	Earthing comprising of the following and any other necessary accessories:-	NO			
	a) 15 mm x 1800 mm earth rod as FURSE cat. No. RB 105.		2		
	b) 15 mm dia. Driving stud as FURSE cat. No. ST100.		2		
	c) Rod to tape clamp as FURSE.		2		
	d) Concrete inspection pit as FURSE cat. No.PT005. (or a well-made 320mm x 320mmx 210 mm depth pit.)		2		
	e) 25x3mm copper tape		5		

Table 67: BILL NO.3: ACCESS CONTROL SYSTEM AND CCTV INSTALLATION

ITEM	DESCRIPTION	Unit	Qty	Rate	Total
3.00	DOOR ACCESS CONTROL				
3.01	TCP/IP intelligent door controller unit biometric-enabled security complete with all accessories as Suprema CoreStation or equal and approved equivalent	No	2		
3.02	A 300Kg- Force magnetic door lock c/w Door Closer, Mounting Bracket and all other necessary accessories	No	2		
3.03	IP67 IP Based Door Reader with Biometric Finger and face recognition, Proximity Card Reader, and keypad to provide comprehensive access control and time attendance features as Suprema Biolite or approved equivalent.	No	4		
3.04	Emergency Break glass	No	2		
3.05	Wire the entire access control system using 12 core 1.5mm ² fire resistant cable.	M	100		
3.06	Proximity card containing photograph of individual employees	No	10		
3.07	Web based -Access control software module c/w Access Control Alarm and Event Monitoring, Central Station Operator Controls, Photo-ID Badging Management, Intrusion Integration with CCTV system, Customized reports Generation capabilities, Staff	No	1		
3.08	Access control Power supply module with necessary lead acid batteries to support a 12 hours runtime for the access control system as described in particular specification as SECO-LARM Cat. No. EAP-5D5Q or equal and approved equivalent.	No	2		
3.09	Workstation as described in Particular specifications	No	1		
3.10	Allow for software configuration of the system to client's requirements Programming, testing and commissioning.	Item	1		
CCTV CAMERAS					

ITEM	DESCRIPTION	Unit	Qty	Rate	Total
3.11	High resolution Network IR Indoor Dome Day & Night 6Megapixel Camera; Built-in motorized varifocal lens, MicroSD/SDHC/SDXC,NAS Edge Storage, PoE, IK8, Bi-directional audio support, motion detection, as Wisenet SND-7084R or equal and approved equivalent.	No	3		
3.12	4Megapixel resolution Weatherproof Network IR OUTDOOR BULLET built-in IR LEDs Camera true day and night and motion detection; as specified in the technical specifications.	No	1		
3.13	Cat 6A, UTP 4 Pair cable as Siemon or its equal and approved equivalent.	Lm	300		
3.14	Provide for software licensing, integration, configuration and testing to work of the new installation to the existing CCTV system installed in the building.	Item	1		

Table 68: BILL No. 4: PROJECT MANAGERS STATIONERY

ITEM	DESCRIPTION	UNIT	QTY	RATE	TOTAL
4.00	Supply and Deliver the following items to the Project Engineers office				
4.01	TK-8735K black Toner Cartridge for Kyocera Taskalfa 8353ci	No	5		
4.02	Photocopying papers size A4, 80g/cm ³ white - 500 sheets	Ream	20		
4.03	Letter head quality paper as classic or equal and approved - blue 80g/cm ³	Ream	5		
4.04	A4 size, Translucent PVC covers as KATKO or approved equivalent, 100 sheets blue in colour and 0.2mm thick	Pkts	2		
4.05	A4 size, Embossed covers as KATKO or approved equivalent,100 sheets blue in colour	Pkts	2		
4.06	2 Terabyte portable external hard disc as HP/Toshiba/Dell or equal and approved	No	2		
4.07	Laptop Core i7, 8GB Memory, 1TB HDD + 8GB SSD Storage,15.6" Full HD 1080p Display, NVIDIA GeForce GTX 960M 4 GB GDDR5 as Dell Inspiron i7559 or approved equivalent.	No	1		
Total Carried Forward To The Summary page					

Table 69: PRICE SUMMARY PAGE

ITEM	DESCRIPTION	UNIT	QTY	RATE	TOTAL
	Total for Project Preliminaries installation				

	Total for Lighting and Power installation				
	Total for Access Control and CCTV installation				
	Project Manager's Stationery				
	Contingency sum of Kshs.500,000.00 to be expended at the discretion of the Engineer				500,000.00
	Subtotal for electrical works carried to summary page				

TOTAL AMOUNT IN WORDS

.....

TENDERER'S NAME & STAMP.....

SIGNATURE

DATE.....

Table 70: Technical Schedule Form

NO	DESCRIPTION	MAKE	TYPE
1	Power Cables		
2	CAT 6A STP Cables		
3	Access control module		
4	Finger print biometric & card reader		
5	Door Exit Switch		
6	Override Exit Switch		
7	Proximity Cards		
8	Distribution Board		
9	CCTV Cameras		
10	Metal Trunking		
11	Lighting Switches		
12	Power Sockets		
13	PVC Conduits		

Table 71: TENDERER GRAND TOTAL BID PRICE SUMMARY

Item	Description	Unit	Qty	Rate	Amount
1	subtotal for integrated data center infrastructure/ smart racks for primary data centre				
2	Subtotal for civil works				
3	Subtotal for Mechanical works				
4	Subtotal for Electrical works				
5	Subtotal for pc & provisional and contingency sums				1,200,000.00
6	Add 16% VAT				
GRAND TOTAL TO BE CARRIED TO FORM OF TENDER					

TOTAL AMOUNT IN WORDS

.....

**TENDERER'S NAME &
STAMP**.....

SIGNATURE **DATE**.....

Specification

Supply and install contract to be procured through international competition, the Procuring Entity's Requirements must be drawn up to permit the widest, possible competition and, at the same time, present a clear statement of the required standards of workmanship, materials and performance of the Facilities. Only if this is done will the objectives of economy, efficiency, fairness and transparency in procurement be realized, responsiveness of Tenders be ensured and the subsequent task of Tender evaluation facilitated.

In a design, supply and install approach, the design is to be done by the Contractor. No detailed technical specification as is normal practice is developed at the pre-Tender stage. However, the Procuring Entity does and must know what it wants and must communicate its needs to the Tenderers. Hence, this section on Procuring Entity's Requirements replaces the usual Technical Specifications of a more traditional approach.

While this section of the Tendering document should endeavor to define the Procuring Entity's Requirements as precisely as possible, care must be taken to avoid over specifying details to the extent that the flexibility and potential benefits associated with a design, supply and install contract are seriously eroded or threatened.

Care must be taken when drafting the Procuring Entity's Requirements to ensure that the requirements are not restrictive. Recognized international standards should be used as much as possible for the description of goods, materials and workmanship. Where other particular standards are specified, whether national standards of Kenya other standards, it should be stated that goods, materials and workmanship meeting other authoritative standards and which promise to ensure equal or higher quality than the standards specified, will also be acceptable. Where a brand name of a product is specified it should always be qualified with the terms "or equivalent".

For a design, supply and install contract no detail drawings would generally be available at the pre-Tendering process stage. It would, however, be useful to include such conceptual drawings as are appropriate to supplement or help explain the general concept of the Procuring Entity's needs.

The Procuring Entity should specify any Environmental, Social, health, and safety requirements as appropriate.

Any sustainable procurement technical requirements shall be clearly specified. The requirements to be specified shall be specific enough to not demand evaluation based on rated criteria/ merit point system. The sustainable procurement requirements shall be specified to enable evaluation of such a requirement on a pass/ fail basis. To encourage Tenderers' innovation in addressing sustainable procurement requirements, as long as the Tender evaluation criteria specify the mechanism for monetary adjustments for the purpose of Tender comparisons, Tenderers may be invited to offer Plant that exceeds the specified minimum sustainable procurement requirements.

Where Tenderers are invited to submit alternative technical solutions for specified parts of the facilities, such parts shall be described in this Specification.

FORMS AND PROCEDURES

Form of Completion Certificate

Date: _____

ITT No: _____

To: _____

Dear Ladies and/or Gentlemen,

Pursuant to GCC Clause 24 (Completion of the Facilities) of the General Conditions of the Contract entered into between yourselves and the Procuring Entity dated _____, relating to the _____, we hereby notify you that the following part (s) of the Facilities was (were) complete on the date specified below, and that, in accordance with the terms of the Contract, the Procuring Entity hereby takes over the said part (s) of the Facilities, together with the responsibility for care and custody and the risk of loss thereof on the date mentioned below.

1. Description of the Facilities or part there of: _____
2. Date of Completion: _____

However, you are required to complete the outstanding items listed in the attachment hereto as soon as practicable.

This Form does not relieve you of your obligation to complete the execution of the Facilities in accordance with the Contract nor of your obligations during the Defect Liability Period.

Very truly yours,

Title (Project Manager)

FORM OF OPERATIONAL ACCEPTANCE CERTIFICATE

Date: _____

ITT No: _____

To: _____

Dear Ladies and/or Gentlemen,

Pursuant to GCC Sub-Clause 25.3 (Operational Acceptance) of the General Conditions of the Contract entered into between yourselves and the Procuring Entity dated _____, relating to the _____, we hereby notify you that the Functional Guarantees of the following part (s) of the Facilities were satisfactorily attained on the date specified below.

1. Description of the Facilities or part there of: _____
2. Date of Operational Acceptance: _____

This Form does not relieve you of your obligation to complete the execution of the Facilities in accordance with the Contract nor of your obligations during the Defect Liability Period.

Very truly yours,

Title (Project Manager)

CHANGE ORDER PROCEDURE AND FORMS

Date:

ITNo:
.....

CONTENTS

1. General
2. Change Order Log
3. References for Changes

ANNEXES

Annex 1: Request for Change

Proposal Annex 2: Estimate for

Change Proposal Annex 3:

Acceptance of Estimate Annex 4:

Change Proposal

Annex 5: Change Order

Annex 6: Pending Agreement Change

Order Annex 7: Application for Change

Proposal

Change Order Procedure

1. General

This section provides samples of procedures and forms for implementing changes in the Facilities during the performance of the Contract in accordance with GCC Clause 39 (Change in the Facilities) of the General Conditions.

2. Change Order Log

The Contractor shall keep an up-to-date Change Order Log to show the current status of Requests for Change and Changes authorized or pending, as Annex 8. Entries of the Changes in the Change Order Log shall be made to ensure that the log is up-to-date. The Contractor shall attach a copy of the current Change Order Log in the monthly progress report to be submitted to the Procuring Entity.

3. References for Changes

- 1) Request for Change as referred to in GCC Clause 39 shall be serially numbered CR-X-nnn.
- 2) Estimate for Change Proposal as referred to in GCC Clause 39 shall be serially numbered CN-X-nnn.
- 3) Acceptance of Estimate as referred to in GCC Clause 39 shall be serially numbered CA-X-nnn.
- 4) Change Proposal as referred to in GCC Clause 39 shall be serially numbered CP-X-nnn.
- 5) Change Order as referred to in GCC Clause 39 shall be serially numbered CO-X-nnn.

Note:

- a) Requests for Change issued from the Procuring Entity's Home Office and the Site representatives of the Procuring Entity shall have the following respective references:
Home Office CR-H-
nnn Site CR-S-nnn

- b) The above number “nnn” is the same for Request for Change, Estimate for Change Proposal, Acceptance of Estimate, Change Proposal and Change Order.

ANNEX 1. REQUEST FOR CHANGE PROPOSAL

(Procuring Entity's Form head)

To: _____ Date: _____

Attention: _____

Contract Name: _____

Contract Number: _____

Dear Ladies and/or Gentlemen:

With reference to the captioned Contract, you are requested to prepare and submit a Change Proposal for the Change noted below in accordance with the following instructions within _____ days of the date of this Form _____.

1. Title of Change: _____
2. Change Request No. _____
3. Originator of Change:
4. Procuring Entity: _____
5. Contractor (by Application for Change Proposal No. _):
6. Brief Description of Change: _____
7. Facilities and/or Item No. of equipment related to the requested Change:
8. Reference drawings and/ or technical documents for the request of Change: Drawing No. / Document No. Description
9. Detailed conditions or special requirements on the requested Change: _____
10. General Terms and Conditions:
 - a) Please submit your estimate to us showing what effect the requested Change will have on the Contract Price.
 - b) Your estimate shall include your claim for the additional time, if any, for completion of the requested Change.
 - c) If you have any opinion negative to the adoption of the requested Change in connection with the conformability to the other provisions of the Contractor the safety of the Plant or Facilities, please inform us of your opinion in your proposal of revised provisions.
 - d) Any increase or decrease in the work of the Contractor relating to the services of its personnel shall be calculated.
 - e) You shall not proceed with the execution of the work for the requested Change until we have accepted and confirmed the amount and nature in writing.

(ProcuringEntity'sName).....

(Signature).....

(Nameofsignatory).....

(Titleofsignatory).....

ANNEX 2. ESTIMATE FOR CHANGE PROPOSAL

(Contractor's Form head)

To: _____ Date: _____

Attention: _____

Contract Name: _____

Contract Number: _____

Dear Ladies and/or Gentlemen:

With reference to your Request for Change Proposal, we are pleased to notify you of the approximate cost of preparing the below-referenced Change Proposal in accordance with GCC Sub-Clause 39.2.1 of the General Conditions. We acknowledge that your agreement to the cost of preparing the Change Proposal, in accordance with GCC Sub-Clause 39.2.2, is required before estimating the cost for change work.

1. Title of Change: _____
2. Change Request No./Rev.: _____
3. Brief Description of Change: _____
4. Scheduled Impact of Change: _____
5. Cost for Preparation of Change Proposal: _____⁹
 - a) Engineering (Amount)
 - i) Engineer _____ hrsx _____ rate/hr =
 - ii) Draftsperson _____ hrsx _____ rate/hr = Sub-total _____ hrs
 - iii) Total Engineering Cost _____
 - b) Other Cost
Total Cost (a) + (b)

(Contractor's Name) _____

(Signature) _____

(Name of signatory) _____

(Title of signatory) _____

⁹Costs shall be in the currencies of the Contract.

ANNEX 3. ACCEPTANCE OF ESTIMATE

(Procuring Entity's Form head)

To: _____ Date: _____

Attention: _____

Contract Name: _____

Contract Number: _____

Dear Ladies and/or Gentlemen:

We hereby accept your Estimate for Change Proposal and agree that you should proceed with the preparation of the Change Proposal.

1. Title of Change: _____
2. Change Request No./ Rev.: _____
3. Estimate for Change Proposal No./ Rev.: _____
4. Acceptance of Estimate No./ Rev.: _____
5. Brief Description of Change: _____
6. Other Terms and Conditions: In the event that we decide not to order the Change accepted, you shall be entitled to compensation for the cost of preparation of Change Proposal described in your Estimate for Change Proposal mentioned in para. 3 above in accordance with GCC Clause 39 of the General Conditions.

(Procuring Entity's Name) _____

(Signature) _____

(Name and Title of signatory) _____

ANNEX 4. CHANGE PROPOSAL

(Contractor's Form head)

To: _____ Date: _____

Attention: _____

Contract Name: _____

Contract Number: _____

Dear Ladies and/or Gentlemen:

In response to your Request for Change Proposal No. _____, we hereby submit our proposal as follows:

1. Title of Change: _____
2. Change Proposal No./Rev.: _____
3. Originator of Change:
Procuring Entity: _____
Contractor: _____
4. Brief Description of Change: _____
5. Reasons for Change: _____
6. Facilities and/or Item No. of Equipment related to the requested Change: _____
7. Reference drawings and/ or technical documents for the requested Change: Drawing/ Document No. Description
8. Estimate of increase/ decrease to the Contract Price resulting from Change Proposal: (Amount)
 - a) Direct material
 - b) Major construction equipment
 - c) Direct field labor (Total hrs)
 - d) Subcontracts
 - e) Indirect material and labor
 - f) Site supervision
 - g) Head office technical staff salaries
Process engineer _____ hrs @ _____ rate/hr
Project engineer _____ hrs @ _____ rate/hr
Equipment engineer _____ hrs @ _____ rate/hr
Procurement _____ hrs @ _____ rate/hr
Drafts person _____ hrs @ _____
_____ rate/hr Total _____

- _____hrs
- h) Extraordinary costs (computer, travel, etc.)
 - i) Fee for general administration, _____% of Items
 - j) Taxes and customs duties
- Total lump sum cost of Change Proposal

(Sum of items (a) to (j))
 Cost to prepare Estimate for Change
 Proposal (Amount payable if Change is
 not accepted)

- 9. Additional time for Completion required due to Change Proposal
- 10. Effect on the Functional Guarantees
- 11. Effect on the other terms and conditions of the Contract
- 12. Validity of this Proposal: within [Number] days after receipt of this Proposal by the Procuring Entity
- 13. Other terms and conditions of this Change Proposal:
 - a) You are requested to notify us of your acceptance, comments or rejection of this detailed Change Proposal within _____days from your receipt of this Proposal.
 - b) The amount of any increase and/or decrease shall be taken into account in the adjustment of the Contract Price.
 - c) Contractor's cost for preparation of this Change Proposal:²

(Contractor's Name) _____

(Signature) _____

(Name of signatory)

_____ (

Title of signatory) _____

²Specify where necessary.

ANNEX 5. CHANGE ORDER

(Procuring Entity's Form head)

To: _____ Date

Attention: _____

Contract Name: _____

Contract Number: _____

Dear Ladies and/or Gentlemen:

We approve the Change Order for the work specified in the Change Proposal (No.), and agree to adjust the Contract Price, Time for Completion and/or other conditions of the Contract in accordance with GCC Clause 39 of the General Conditions.

1. Title of Change: _____
2. Change Request No./Rev.: _____
3. Change Order No./ Rev.: _____
4. Originator of Change: _____ Procuring Entity: _____
Contractor: _____
5. Authorized Price: _____
Ref. No.: _____ Date: _____
Foreign currency portion _____ plus Local currency portion _____
6. Adjustment of Time for Completion
None Increase _____ Days Decrease _____ days
7. Other effects, if any

Authorized by: _____ Date: _____
(*Procuring Entity*)

Accepted by: _____ Date: _____
(*Contractor*)

ANNEX 6. PENDING AGREEMENT CHANGE ORDER

(Procuring Entity's Form head)

To: _____ Date: _____

Attention: _____

Contract Name: _____

Contract Number: _____

Dear Ladies and/or Gentlemen:

We instruct you to carry out the work in the Change Order detailed below in accordance with GCC Clause 39 of the General Conditions.

1. Title of Change: _____
2. Procuring Entity's Request for Change Proposal No./Rev.: _____ dated: _____
3. Contractor's Change Proposal No./Rev.: _____ dated: _____
4. Brief Description of Change: _____
5. Facilities and/or Item No. of equipment related to the requested Change: _____
6. Reference Drawings and/or technical documents for the requested
Change: Drawing/Document No. Description
7. Adjustment of Time for Completion:
8. Other change in the Contract terms:
9. Other terms and conditions:

(Procuring Entity's Name) _____

(Signature) _____

(Name of signatory)

(Title of signatory) _____

ANNEX 7. APPLICATION FOR CHANGE PROPOSAL

(Contractor's Form head)

To: _____ Date: _____

Attention: _____

Contract Name: _____

Contract Number: _____

Dear Ladies and/or Gentlemen:

We hereby propose that the below-mentioned work be treated as a Change in the Facilities.

1. Title of Change: _____
2. Application for Change Proposal No./Rev.: _____ dated: _____
3. Brief Description of Change: _____
4. Reasons for Change:
5. Order of Magnitude Estimation (in the currencies of the Contract):
6. Scheduled Impact of Change:
7. Effect on Functional Guarantees, if any:
8. Appendix:

(Contractor's Name) _____

(Signature) _____

(Name of signatory) _____

(Title of signatory) _____

DRAWINGS

SUPPLEMENTARY INFORMATION

GENERAL CONDITIONS OF CONTRACT

A. Contract and Interpretation

1. Definitions

1.1 The following words and expressions shall have the meanings here by assigned to them:

“Contract” means the Contract Agreement entered into between the Procuring Entity and the Contractor, together with the Contract Documents referred to there in; they shall constitute the Contract, and the term “the Contract” shall in all such documents be construed accordingly.

“Contract Documents” means the documents listed in Article 1.1 (Contract Documents) of the Contract Agreement (including any amendments thereto).

“GCC” means the General Conditions of Contract hereof. “SCC” means the Special Conditions of Contract.

“Day” means calendar day. “Year” means 365 days. “Month” means calendar month.

“Party” means the Procuring Entity or the Contractor, as the context requires, and “Parties” means both of them.

“Procuring Entity” means the public entity named as such in the SCC and includes the legal successors or permitted assigns of the Procuring Entity.

“Project Manager” means the person appointed by the Procuring Entity in the manner provided in GCC Sub- Clause 17.1 (Project Manager) hereof and named as such in the SCC to perform the duties delegated by the Procuring Entity.

“Contractor” means the person(s) whose Tender to perform the Contract has been accepted by the Procuring Entity and is named as Contractor in the Contract Agreement, and includes the legal successors or permitted assigns of the Contractor.

“Contractor's Representative” means any person nominated by the Contractor and approved by the Procuring Entity in the manner provided in GCC Sub-Clause 17.2 (Contractor's Representative and Construction Manager) here of to perform the duties delegated by the Contractor.

“Construction Manager” means the person appointed by the Contractor's Representative in the manner provided in GCC Sub-Clause 17.2.4.

“Subcontractor,” including manufacturers, means any person to whom execution of any part of the Facilities, including preparation of any design or supply of any Plant, is sub-contracted directly or indirectly by the Contractor, and includes its legal successors or permitted assigns.

“Dispute Board” (DB) means the person or persons named as such in the SCC appointed by agreement between the Procuring Entity and the Contractor to make a decision with respect to any dispute or difference between the Procuring Entity and the Contractor referred to him or her by the Parties pursuant to GCC Sub-Clause 46.1 (Dispute Board) hereof.

“Contract Price” means the sum specified in Article 2.1 (Contract Price) of the Contract Agreement, subject to such additions and adjustments there to or deductions there from, as may be made pursuant to the Contract.

“Facilities” means the Plant to be supplied and installed, as well as all the Installation Services to be carried out by the Contractor under the Contract.

“Plant” means permanent plant, equipment, machinery, apparatus, materials, articles and things of all kinds to be provided and incorporated in the Facilities by the Contractor under the Contract (including the spare parts to be supplied by the Contractor under GCC Sub-Clause 7.3 here of), but does not include Contractor's Equipment.

“Installation Services” means all those services ancillary to the supply of the Plant for the Facilities, to be provided by the Contractor under the Contract, such as transportation and provision of marine or other similar insurance, inspection, expediting, site preparation works (including the provision and use of Contractor's Equipment and the supply of all construction materials required), installation, testing, pre-commissioning, commissioning, operations, maintenance, the provision of operations and maintenance manuals, training, etc...as the case may require.

“Contractor's Equipment” means all facilities, equipment, machinery, tools, apparatus, appliances or things of every kind required in or for installation, completion and maintenance of Facilities that are to be provided by the Contractor, but does not include Plant, or other things intended to form or forming part of the Facilities.

“Country of Origin” means the countries and territories eligible as elaborated in the SCC.

“Site” means the land and other places upon which the Facilities are to be installed, and such other land or places as may be specified in the Contract as forming part of the Site.

“Effective Date” means the date of fulfillment of all conditions stated in Article 3 (Effective Date) of the Contract Agreement, from which the Time for Completion shall be counted.

“Time for Completion” means the time within which Completion of the Facilities as a whole (or of a part of the Facilities where a separate Time for Completion of such part has been prescribed) is to be attained, as referred to in GCC Clause 8 and in accordance with the relevant provisions of the Contract.

“Completion” means that the Facilities (or a specific part thereof where specific parts are specified in the Contract) have been completed operationally and structurally and put in a tight and clean condition, that all work in respect of Pre-commissioning of the Facilities or such specific part thereof has been completed, and that the Facilities or specific part thereof are ready for Commissioning as provided in GCC Clause 24 (Completion) hereof.

“Pre-commissioning” means the testing, checking and other requirements specified in the Procuring Entity's Requirements that are to be carried out by the Contractor in preparation for Commissioning as provided in GCC Clause 24 (Completion) hereof.

“Commissioning” means operation of the Facilities or any part thereof by the Contractor following Completion, which operation is to be carried out by the Contractor as provided in GCC Sub-Clause 25.1 (Commissioning) hereof, for the purpose of carrying out Guarantee Test(s).

“Guarantee Test(s)” means the test(s) specified in the Procuring Entity's Requirements to be carried out to ascertain whether the Facilities or a specified part thereof is able to attain the Functional Guarantees specified in the Appendix to the Contract Agreement titled Functional Guarantees, in accordance with the provisions of GCC Sub-Clause 25.2 (Guarantee Test) hereof.

“Operational Acceptance” means the acceptance by the Procuring Entity of the Facilities (or any part of the Facilities where the Contract provides for acceptance of the Facilities in parts), which

certifies the Contractor's fulfillment of the Contract in respect of Functional Guarantees of the Facilities (or the relevant part thereof) in accordance with the provisions of GCC Clause 28 (Functional Guarantees) hereof and shall include deemed acceptance in accordance with GCC Clause 25 (Commissioning and Operational Acceptance) hereof.

“Defect Liability Period” means the period of validity of the warranties given by the Contractor commencing at Completion of the Facilities or a part thereof, during which the Contractor is responsible for defects with respect to the Facilities (or the relevant part thereof) as provided in GCC Clause 27(Defect Liability) hereof.

“Notice of Dissatisfaction” means the notice given by either Party to the other under Sub-Clause 46.4 indicating its dissatisfaction and intention to commence arbitration.

2. Contract Documents

2.1 Subject to Article 1.2 (Order of Precedence) of the Contract Agreement, all documents forming part of the Contract (and all parts thereof) are intended to be correlative, complementary and mutually explanatory. The Contract shall be read as a whole.

3. Interpretation

3.1 In the Contract, except where the context requires otherwise:

- a) Words indicating one gender include all genders;
- b) words indicating the singular also include the plural and words indicating the plural also include the singular;
- c) provisions including the word “agree,” “agreed,” or “agreement” require the agreement to be recorded in writing;
- d) the word “tender” is synonymous with “Tender,” “tenderer,” with “Tenderer,” and “tender documents” with “Tendering Document,” and
- e) “Written” or “in writing” means hand-written, type-written, printed or electronically made, and resulting in a permanent record.

The marginal words and other headings shall not be taken in to consideration in the interpretation of these Conditions.

3.2 Incoterms

Unless inconsistent with any provision of the Contract, the meaning of any trade term and the rights and obligations of Parties thereunder shall be as prescribed by Incoterms.

Incoterms means international rules for interpreting trade terms published by the International Chamber of Commerce (latest edition), 38 Cours Albert 1^{er}, 75008 Paris, France.

3.3 Entire Agreement

3.3.1 Subject to GCC Sub-Clause 16.4 hereof, the Contract constitutes the entire agreement between the Procuring Entity and Contractor with respect to the subject matter of Contract and supersedes all communications, negotiations and agreements (whether written or oral) of Parties with respect there to made prior to the date of Contract.

3.4 Amendment

No amendment or other variation of the Contract shall be effective unless it is in writing, is dated, expressly refers to the Contract, and is signed by a duly authorized representative of each Party hereto.

3.5 Independent Contractor

The Contractor shall be an independent contract or performing the Contract. The Contract does not create any agency, partnership, joint venture or other joint relationship between the Parties hereto. Subject to the provisions of the Contract, the Contractor shall be solely responsible for the manner in which the Contract is performed. All employees, representatives or Subcontractors engaged by the Contractor in connection with the performance of the Contract shall be under the complete control of the Contractor and shall not be deemed to be employees of the Procuring Entity, and nothing contained in the Contractor in any subcontract awarded by the Contractor shall be construed to create any contractual relationship between any such employees, representatives or Subcontractors and the Procuring Entity.

3.6 Non-Waiver

3.6.1 Subject to GCC Sub-Clause 3.6.2 below, no relaxation, forbearance, delay or indulgence by either Party in enforcing any of the terms and conditions of the Contract or the granting of time by either Party to the other shall prejudice, affect or restrict the rights of that Party under the Contract, nor shall any waiver by either Party of any breach of Contract operate as waiver of any subsequent or continuing breach of Contract.

3.6.2 Any waiver of a Party's rights, powers or remedies under the Contract must be in writing, must be dated and signed by an authorized representative of the Party granting such waiver, and must specify the right and the extent to which it is being waived.

3.7 Severability

If any provision or condition of the Contract is prohibited or rendered invalid or unenforceable, such prohibition, in validity or unenforced ability shall not affect the validity or enforce ability of any other provisions and conditions of the Contract.

3.8 Country of Origin

“Origin” means the place where the plant and component parts thereof are mined, grown, produced or manufactured, and from which the services are provided. Plant components are produced when, through manufacturing, processing, or substantial or major assembling of components, a commercially recognized product results that is substantially in its basic characteristics or in purpose or utility from its components.

4 Communications

4.3 Wherever these Conditions provide for the giving or issuing of approvals, certificates, consents, determinations, notices, requests and discharges, these communications shall be:

- a In writing and delivered against receipt; and
- b Delivered, sent or transmitted to the address for the recipient's communications as stated in the Contract Agreement.

When a certificate is issued to a Party, the certifier shall send a copy to the other Party. When a notice is issued to a Party, by the other Party or the Project Manager, a copy shall be sent to the Project Manager or the other Party, as the case may be.

5 Law and Language

5.3 The Contract shall be governed by in accordance with laws of Kenya

5.4 The ruling language of the Contract shall be English Language.

5.5 The language for communications shall be the English language.

Section VI: Fraud and Corruption

6.1 The Procuring Entity requires compliance with the provisions of the Public Procurement and Asset Disposal Act, 2015, Section 62 as set forth in Section” Declaration not to engage in corruption”. The tender submitted by a person shall include a declaration that the person shall not engage in any corrupt or fraudulent practice and a declaration that the person or his or her sub-contractors are not debarred from participating in public procurement proceedings.

6.2 Tenderers shall permit and shall cause their agents (where declared or not), subcontractors, sub-consultants, service providers, suppliers, and their personnel, to permit the PPRA to inspect all accounts, records and other documents relating to any initial selection process, prequalification process, tender submission, proposal submission, and contract performance (in the case of award), and to have them audited by auditors appointed by the PPRA.

B. Subject Matter of Contract

7 Scope of Facilities

7.1 Unless otherwise expressly limited in the Procuring Entity's Requirements, the Contractor's obligations cover the provision of all Plant and the performance of all Installation Services required for the design, and the manufacture (including procurement, quality assurance, construction, installation, associated civil works, Pre- commissioning and delivery) of the Plant, and the installation, completion and commissioning of the Facilities in accordance with the plans, procedures, specifications, drawings, codes and any other documents as specified in the Section, Procuring Entity's Requirements. Such specifications include, but are not limited to, the provision of supervision and engineering services; the supply of labor, materials, equipment, spare parts (as specified in GCC Sub-Clause 7.3 below) and accessories; Contractor's Equipment; construction utilities and supplies; temporary materials, structures and facilities; transportation (including, without limitation, unloading and hauling to, from and at the Site); and storage, except for those supplies, works and services that will be provided or performed by the Procuring Entity, asset for thin the Appendix to the Contract Agreement titled Scope of Works and Supply by the Procuring Entity.

7.2 The Contractor shall, unless specifically excluded in the Contract, perform all such work and/or supply all such items and materials not specifically mentioned in the Contract but that can be reasonably inferred from the Contract as being required for attaining Completion of the Facilities as if such work and/or items and materials were expressly mentioned in the Contract.

7.3 In addition to the supply of Mandatory Spare Parts included in the Contract, the Contractor agrees to supply spare parts required for the operation and maintenance of the Facilities for the period specified in the SCC and the provisions, if any, specified in the SCC. However, the identity, specifications and quantities of such spare parts and the terms and conditions relating to the supply there of are to be agreed between the Procuring Entity and the Contractor, and the price of such spare parts shall be that given in Price Schedule No.6, which shall be added to the Contract Price. The price of such spare parts shall include the purchase price there for and other costs and expenses (including the Contractor's fees) relating to the supply of spare parts.

8 Time for Commencement and Completion

8.1 The Contractor shall commence work on the Facilities within the period specified in the SCC and without prejudice to GCC Sub-Clause 26.2 hereof, the Contractor shall thereafter proceed with the Facilities in accordance with the time schedule specified in the Appendix to the Contract Agreement titled Time Schedule.

8.2 The Contractor shall attain Completion of the Facilities or of a part where a separate time

for Completion of such part is specified in the Contract, within the time stated in the SCC or within such extended time to which the Contractor shall be entitled under GCC Clause 40 hereof.

9 Contractor's Responsibilities

9.1 The Contractor shall design, manufacture including associated purchases and/or subcontracting, install and complete the Facilities in accordance with the Contract. When completed, the Facilities should be fit for the purposes for which they are intended as defined in the Contract.

9.2 The Contractor confirms that it has entered in to this Contract on the basis of a proper examination of the data relating to the Facilities including any data as to boring tests provided by the Procuring Entity, and on the basis of information that the Contractor could have obtained from a visual inspection of the Site if access there to was available and of other data readily available to it relating to the Facilities as of the date twenty-eight (28) days prior to Tender submission. The Contractor acknowledges that any failure to acquaint itself with all such data and information shall not relieve its responsibility for properly estimating the difficulty or cost of successfully performing the Facilities.

9.3 The Contractor shall acquire and pay for all permits, approvals and /or licenses from all local, state or national government authorities or public service undertakings in the country where the Site is located which such authorities or undertakings require the Contractor to obtain in its name and which are necessary for the performance of the Contract, including, without limitation, visas for the Contractor's and Subcontractor's personnel and entry permits for all imported Contractor's Equipment. The Contractor shall acquire all other permits, approvals and/or licenses that are not the responsibility of the Procuring Entity under GCC Sub- Clause 10.3 hereof and that are necessary for the performance of the Contract.

9.4 The Contractor shall comply with all laws in force in the country where the Facilities are to be implemented. The laws will include all local, state, national or other laws that affect the performance of the Contract and bind upon the Contractor. The Contractor shall indemnify and hold harmless the Procuring Entity from and against any and all liabilities, damages, claims, fines, penalties and expenses of whatever nature arising or resulting from the violation of such laws by the Contractor or its personnel, including the Subcontractors and their personnel, but without prejudice to GCC Sub-Clause 10.1 hereof.

9.5 Any Plant and Installation Services that will be incorporated in or be required for the Facilities and other supplies shall have their origin as specified under GCC Clause 1 (Country of Origin). Any subcontractors retained by the Contractor shall be from a country as specified in GCC Clause 1 Country of Origin).

9.6 If the Contractor is a joint venture, or association (JV) of two or more persons, all such persons shall be jointly and severally bound to the Procuring Entity for the fulfillment of the provisions of the Contract, and shall designate one of such persons to act as a leader with authority to bind the JV. The composition or the constitution of the JV shall not be altered without the prior consent of the Procuring Entity.

9.7 Pursuant to paragraph 2.2 e. of Appendix B to the General Conditions the Contractor shall permit and shall cause its subcontractors and sub-consultants to permit, PPRA and/or persons appointed by PPRA to inspect the Site and/or the accounts and records relating to the procurement process, selection and/or contract execution, and to have such accounts and records audited by auditors appointed by PPRA. The Contractor's and its Subcontractors' and sub-consultants' attention is drawn to Sub-Clause 6.1 which provides, inter alia, that acts intended to materially

impede the exercise of the PPRA's inspection and audit rights constitute a prohibited practice subject to contract termination.

9.8 The Contractor shall conform to the sustainable procurement contractual provisions, if and as specified in the SCC.

10 Procuring Entity's Responsibilities

10.1 All information and/or data to be supplied by the Procuring Entity as described in the Appendix to the Contract Agreement titled Scope of Works and Supply by the Procuring Entity, shall be deemed to be accurate, except when the Procuring Entity expressly states otherwise.

10.2 The Procuring Entity shall be responsible for acquiring and providing legal and physical possession of the Site and access thereto, and for providing possession of and access to all other areas reasonably required for the proper execution of the Contract, including all requisite rights of way, as specified in the Appendix to the Contract Agreement titled Scope of Works and Supply by the Procuring Entity. The Procuring Entity shall give full possession of an accord all rights of access there to on or before the date (s) specified in that Appendix.

10.3 The Procuring Entity shall acquire and pay for all permits, approvals and/or licenses from all local, state or national government authorities or public service under takings in the country where the Site is located which such authorities or under takings require the Procuring Entity to obtain in the Procuring Entity's name, (b) are necessary for the execution of the Contract, including those required for the performance by both the Contractor and the Procuring Entity of their respective obligations under the Contract, and (c) are specified in the Appendix (Scope of Works and Supply by the Procuring Entity).

10.4 If requested by the Contractor, the Procuring Entity shall use its best endeavors to assist the Contractor in obtaining in a timely and expeditious manner all permits, approvals and/or licenses necessary for the execution of the Contract from all local, state or national government authorities or public service under takings that such authorities or undertakings require the Contractor or Subcontractors or the personnel of the Contractor or Subcontractors, as the case may be, to obtain.

10.5 Unless otherwise specified in the Contract or agreed upon by the Procuring Entity and the Contractor, the Procuring Entity shall provide sufficient, properly qualified operating and maintenance personnel; shall supply and make available all raw materials, utilities, lubricants, chemicals, catalysts, other materials and facilities; and shall perform all work and services of whatsoever nature, including those required by the Contractor to properly carry out Pre-commissioning, Commissioning and Guarantee Tests, all in accordance with the provisions of the Appendix to the Contract Agreement titled Scope of Works and Supply by the Procuring Entity, at or before the time specified in the program furnished by the Contractor under GCC Sub-Clause 18.2 hereof and in the manner thereupon specified or as otherwise agreed upon by the Procuring Entity and the Contractor.

10.6 The Procuring Entity shall be responsible for the continued operation of the Facilities after Completion, in accordance with GCC Sub-Clause 24.8, and shall be responsible for facilitating the Guarantee Test (s) for the Facilities, in accordance with GCC Sub-Clause 25.2.

10.7 All costs and expenses involved in the performance of the obligations under this GCC Clause 10 shall be the responsibility of the Procuring Entity, save those to be incurred by the Contractor with respect to the performance of Guarantee Tests, in accordance with GCC Sub-Clause 25.2.

10.8 In the event that the Procuring Entity shall be in breach of any of his obligations under this Clause, the additional cost incurred by the Contractor in consequence thereof shall be determined by the Project Manager and added to the Contract Price.

C. Payment

11 Contract Price

11.1 Contract as specified in Article 2 (Contract Price and Terms of Payment) of the Contract Agreement.

11.2 Unless an adjustment clause is provided for in the SCC, the Contract Price shall be a firm lump sum not subject to any alteration, except in the event of a Change in the Facilities or as otherwise provided in the Contract.

11.3 Subject to GCC Sub-Clauses 9.2,10.1 and 35 hereof, the Contractor shall be deemed to have satisfied itself as to the correctness and sufficiency of the Contract Price, which shall, except as otherwise provided for in the Contract, cover all its obligations under the Contract.

12 Terms of Payment

12.1 The Contract Price shall be paid as specified in Article 2 (Contract Price and Terms of Payment) of the Contract Agreement and in the Appendix to the Contract Agreement titled Terms and Procedures of Payment, which also outlines the procedures to be followed in making application for and processing payments.

12.2 No payment made by the Procuring Entity herein shall be deemed to constitute acceptance by the Procuring Entity of the Facilities or any part (s) thereof.

12.3 In the event that the Procuring Entity fails to make any payment by its respective due date or within the period set for thin the Contract, the Procuring Entity shall pay to the Contractor interest on the amount of such delayed payment at the rate(s) shown in the Appendix to the Contract Agreement titled Terms and Procedures of Payment, for the period of delay until payment has been made in full, whether before or after judgment or arbitration award.

12.4 The currency or currencies in which payments are made to the Contractor under this Contract shall be specified in the Appendix to the Contract Agreement titled Terms and Procedures of Payment, subject to the general principle that payments will be made in the currency or currencies in which the Contract Price has been stated in the Contractor's Tender.

13 Securities

13.1 Issuance of Securities

The Contractor shall provide the securities specified below in favor of the Procuring Entity at the times, and in the amount, manner and form specified below.

13.2 Advance Payment Security

13.2.1 The Contractor shall, within twenty-eight (28) days of the notification of contract award, provide a security in an amount equal to the advance payment calculated in accordance with the Appendix to the Contract Agreement titled Terms and Procedures of Payment, and in the same currency or currencies.

13.2.2 The security shall be in the form provided in the Tendering documents or in another form acceptable to the Procuring Entity. The amount of the security shall be reduced in proportion to the value of the Facilities executed by and paid to the Contractor from time to time, and shall automatically become null and void when the full amount of the advance payment has been recovered by the Procuring Entity. The security shall be returned to the Contractor immediately after its expiration.

13.3 Performance Security

13.3.1 The Contractor shall, within twenty-eight (28) days of the notification of contract award, provide a security for the due performance of the Contract in the amount specified in the SCC.

13.3.2 The Performance Security shall be denominated in the currency or currencies of the Contract, or in a freely convertible currency acceptable to the Procuring Entity, and shall be in the form provided in Section X, Contract Forms, corresponding to the type of bank guarantee stipulated by the Procuring Entity in the SCC, or in another form acceptable to the Procuring Entity.

13.3.3 Unless otherwise specified in the SCC, the security shall be reduced by half on the date of the Operational Acceptance. The Security shall become null and void, or shall be reduced prorata to the Contract Price of a part of the Facilities for which a separate Time for Completion is provided, five hundred and forty (540) days after Completion of the Facilities or three hundred and sixty five (365) days after Operational Acceptance of the Facilities, whichever occurs first; provided, however, that if the Defects Liability Period has been extended on any part of the Facilities pursuant to GCC Sub-Clause 27.8 hereof, the Contractor shall issue an additional security in an amount proportionate to the Contract Price of that part. The security shall be returned to the Contractor immediately after its expiration, provided, however, that if the Contractor, pursuant to GCC Sub-Clause 27.10, is liable for an extended defect liability obligation, the Performance Security shall be extended for the period specified in the SCC pursuant to GCC Sub-Clause 27.10 and up to the amount specified in the SCC.

13.3.4 The Procuring Entity shall not make a claim under the Performance Security, except for amounts to which the Procuring Entity is entitled under the Contract. The Procuring Entity shall indemnify and hold the Contractor harmless against and from all damages, losses and expenses (including legal fees and expenses) resulting from a claim under the Performance Security to the extent to which the Procuring Entity was not entitled to make the claim.

14 Taxes and Duties

14.1 Except as otherwise specifically provided in the Contract, the Contractor shall bear and pay all taxes, duties, levies and charges assessed on the Contractor, its Subcontractors or their employees by all municipal, state or national government authorities in connection with the Facilities in and outside of the country where the Site is located.

14.2 If any tax exemptions, reductions, allowances or privileges may be available to the Contractor in Kenya, the Procuring Entity shall use its best endeavors to enable the Contractor to benefit from any such tax savings to the maximum allowable extent.

14.3 For the purpose of the Contract, it is agreed that the Contract Price specified in Article 2 (Contract Price and Terms of Payment) of the Contract Agreement is based on the taxes, duties, levies and charges prevailing at the date twenty-eight (28) days prior to the date of Tender submission in Kenya (hereinafter called "Tax" in this GCC Sub-Clause 14.4). If any rates of Tax are increased or decreased, a new Tax is introduced, an existing Tax is abolished, or any change in interpretation or application of any Tax occurs in the course of the performance of Contract, which was or will be assessed on the Contractor, Subcontractors or their employees in connection with performance of the Contract, an equitable adjustment of the Contract Price shall be made to fully take in to account any such change by addition to the Contract Price or deduction therefrom, as the case may be, in accordance with GCC Clause 36 hereof.

A. Intellectual Property

15 License/Use of Technical Information

15.1 For the operation and maintenance of the Plant, the Contractor hereby grants a non-exclusive and non-transferable license (without the right to sub-license) to the Procuring Entity under the patents, utility models or other industrial property rights owned by the Contractor or by a third Party from whom the Contractor has received the right to grant licenses there under, and shall also grant to the Procuring Entity a non-exclusive and non-transferable right (without the right to sub-license) to use the know-how and other technical information disclosed to the Procuring Entity under the Contract. Nothing contained herein shall be construed as transferring ownership of any patent, utility model, trademark, design, copyright, know-how or other intellectual property right from the Contractor or any third Party to the Procuring Entity.

15.2 The copy right in all drawings, documents and other materials containing data and information furnished to the Procuring Entity by the Contractor here in shall remain vested in the Contractor or, if they are furnished to the Procuring Entity directly or through the Contractor by any third Party, including suppliers of materials, the copy right in such materials shall remain vested in such third Party.

16 Confidential Information

16.1 The Procuring Entity and the Contractor shall keep confidential and shall not, without the written consent of the other Party hereto, divulge to any third Party any documents, data or other information furnished directly or indirectly by the other Party hereto in connection with the Contract, whether such information has been furnished prior to, during or following termination of the Contract. Notwithstanding the above, the Contractor may furnish to its Subcontractor (s) such documents, data and other information it receives from the Procuring Entity to the extent required for the Subcontractor (s) to perform its work under the Contract, in which event the Contractor shall obtain from such Subcontractor (s) an under taking of confidentiality similar to that imposed on the Contractor under this GCC Clause16.

16.2 The Procuring Entity shall not use such documents, data and other information received from the Contractor for any purpose other than the operation and maintenance of the Facilities. Similarly, the Contractor shall not use such documents, data and other information received from the Procuring Entity for any purpose other than the design, procurement of Plant, construction or such other work and services as are required for the performance of the Contract.

16.3 The obligation of a Party under GCC Sub-Clauses 16.1 and 16.2 above, however, shall not apply to that information which

- a Now or here after enters the public domain through no fault of that Party
- b can be proven to have been possessed by that Party at the time of disclosure and which was not previously obtained, directly or indirectly, from the other Party hereto
- c Otherwise lawfully becomes available to that Party from a third Party that has no obligation of confidentiality.

16.4 The above provisions of this GCC Clause 16 shall not in any way modify any undertaking of confidentiality given by either of the Parties hereto prior to the date of the Contract in respect of the Facilities or any part thereof.

16.5 The provisions of this GCC Clause 16 shall survive termination, for whatever reason, of the Contract.

B. Execution of the Facilities

17 Representatives

17.1 Project Manager

If the Project Manager is not named in the Contract, then within fourteen (14) days of the Effective Date, the Procuring Entity shall appoint and notify the Contractor in writing of the name of the Project Manager. The Procuring Entity may from time to time appoint some other person as the Project Manager in place of the person previously so appointed, and shall give a notice of the name of such other person to the Contractor without delay. No such appointment shall be made at such a time or in such a manner as to impede the progress of work on the Facilities. Such appointment shall only take effect upon receipt of such notice by the Contractor. The Project Manager shall represent and act for the Procuring Entity at all times during the performance of the Contract. All notices, instructions, orders, certificates, approvals and all other communications under the Contract shall be given by the Project Manager, except as here in otherwise provided.

All notices, instructions, information and other communications given by the Contractor to the Procuring Entity under the Contract shall be given to the Project Manager, except as herein otherwise provided.

17.2 Contractor's Representative & Construction Manager

17.2.1 If the Contractor's Representative is not named in the Contract, then within fourteen (14) days of the Effective Date, the Contractor shall appoint the Contractor's Representative and shall request the Procuring Entity in writing to approve the person so appointed. If the Procuring Entity makes no objection to the appointment within fourteen (14) days, the Contractor's Representative shall be deemed to have been approved. If the Procuring Entity objects to the appointment within fourteen (14) days giving the reason therefor, then the Contractor shall appoint a replacement within fourteen (14) days of such objection, and the foregoing provisions of this GCC Sub-Clause 17.2.1 shall apply thereto.

17.2.2 The Contractor's Representative shall represent and act for the Contractor at all times during the performance of the Contract and shall give to the Project Manager all the Contractor's notices, instructions, information and all other communications under the Contract.

17.2.3 All notices, instructions, information and all other communications given by the Procuring Entity or the Project Manager to the Contractor under the Contract shall be given to the Contractor's Representative or, in its absence, its deputy, except as herein otherwise provided.

17.2.4 The Contractor shall not revoke the appointment of the Contractor's Representative without the Procuring Entity's prior written consent, which shall not be unreasonably withheld. If the Procuring Entity consents thereto, the Contractor shall appoint some other person as the Contractor's Representative, pursuant to the procedure set out in GCC Sub-Clause 17.2.1.

17.2.5 The Contractor's Representative may, subject to the approval of the Procuring Entity which shall not be unreasonably withheld, at any time delegate to any person any of the powers, functions and authorities vested in him or her. Any such delegation may be revoked at any time. Any such delegation or revocation shall be subject to a prior notice signed by the Contractor's Representative, and shall specify the powers, functions and authorities there by delegated or revoked. No such delegation or revocation shall take effect unless and until a copy thereof has been delivered to the Procuring Entity and the Project Manager.

17.2.6 Any actor exercise by any person of powers, functions and authorities so delegated to him

or her in accordance with this GCC Sub-Clause 17.2.3 shall be deemed to be an actor exercise by the Contractor's Representative.

17.2.7 From the commencement of installation of the Facilities at the Site until Completion, the Contractor's Representative shall appoint a suitable person as the Construction Manager. The Construction Manager shall supervise all work done at the Site by the Contractor and shall be present at the Site throughout normal working hours except when on leave, sick or absent for reasons connected with the proper performance of the Contract. Whenever the Construction Manager is absent from the Site, a suitable person shall be appointed to act as the Construction Manager's deputy.

17.2.8 The Procuring Entity may by notice to the Contractor object to any representative or person employed by the Contractor in the execution of the Contract who, in the reasonable opinion of the Procuring Entity, may be have inappropriately, may be incompetent or negligent, or may commit a serious breach of the Site regulations provided under GCC Sub-Clause 22.4. The Procuring Entity shall provide evidence of the same, where upon the Contractor shall remove such person from the Facilities.

17.2.9 If any representative or person employed by the Contractor is removed in accordance with GCC Sub-Clause 17.2.5, the Contractor shall, where required, promptly appoint a replacement.

18 Work Program

18.1 Contractor's Organization

The Contractor shall supply to the Procuring Entity and the Project Manager a chart showing the proposed organization to be established by the Contractor for carrying out work on the Facilities within twenty-one (21) days of the Effective Date. The chart shall include the identities of the key personnel and the curricula vitae of such key personnel to be employed shall be supplied together with the chart. The Contractor shall promptly inform the Procuring Entity and the Project Manager in writing of any revision or alteration of such an organization chart.

18.2 Program of Performance

Within twenty-eight (28) days after the Effective Date, the Contractor shall submit to the Project Manager a detailed program of performance of the Contract, made in a form acceptable to the Project Manager and showing the sequence in which it proposes to design, manufacture, transport, assemble, install and pre- commission the Facilities, as well as the date by which the Contractor reasonably requires that the Procuring Entity shall have fulfilled its obligations under the Contract so as to enable the Contractor to execute the Contract in accordance with the program and to achieve Completion, Commissioning and Acceptance of the Facilities in accordance with the Contract. The program so submitted by the Contractor shall accord with the Time Schedule included in the Appendix to the Contract Agreement titled Time Schedule, and any other dates and periods specified in the Contract. The Contractor shall update and revise the program as and when appropriate or when required by the Project Manager, but without modification in the Times for Completion specified in the SCC pursuant to Sub-Clause 8.2 and any extension granted in accordance with GCC Clause 40, and shall submit all such revisions to the Project Manager.

18.3 Progress Report

The Contractor shall monitor progress of all the activities specified in the program referred to in GCC Sub- Clause 18.2 above, and supply a progress report to the Project Manager every month.

The progress report shall be in a form acceptable to the Project Manager and shall indicate: (a) percentage completion achieved compared with the planned percentage completion for each activity; and (b) where any activity is behind the program, giving comments and likely consequences and stating the corrective action being taken.

18.4 Progress of Performance

If at any time the Contractor's actual progress falls behind the program referred to in GCC Sub-Clause 18.2, or it becomes apparent that it will be all behind, the Contractor shall, at the request of the Procuring Entity or the project Manager, prepare and submit to the Project Manager a revised program, taking into account the prevailing circumstances, and shall notify the Project Manager of the steps being taken to expedite progress so as to attain Completion of the Facilities within the Time for Completion under GCC Sub-Clause 8.2, any extension thereof entitled under GCC Sub-Clause 40.1, or any extended period as may otherwise be agreed upon between the Procuring Entity and the Contractor.

18.5 Procedures

The Contract shall be executed in accordance with the Contract Documents including the procedures given in the Forms and Procedures of the Procuring Entity's Requirements.

The Contractor may execute the Contract in accordance with its own standard project execution plans and procedures to the extent that they do not conflict with the provisions contained in the Contract.

19 Subcontracting

19.1 The Appendix to the Contract Agreement titled List of Major Items of Plant and Installation Services and List of Approved Subcontractors, specifies major items of supply or services and a list of approved Subcontractors against each item, including manufacturers. In so far as no Subcontractors are listed against any such item, the Contractor shall prepare a list of Subcontractors for such item for inclusion in such list. The Contractor may from time to time propose any addition to or deletion from any such list. The Contractor shall submit any such list or any modification thereto to the Procuring Entity for its approval in sufficient time so as not to impede the progress of work on the Facilities. Such approval by the Procuring Entity for any of the Subcontractors shall not relieve the Contractor from any of its obligations, duties or responsibilities under the Contract.

19.2 The Contractor shall select and employ its Subcontractors for such major items from those listed in the lists referred to in GCC Sub-Clause 19.1.

19.3 For items or parts of the Facilities not specified in the Appendix to the Contract Agreement titled List of Major Items of Plant and Installation Services and List of Approved Subcontractors, the Contractor may employ such Subcontractors as it may select, at its discretion.

19.4 Each sub-contract shall include provisions which would entitle the Procuring Entity to require the sub-contract to be assigned to the Procuring Entity under GCC 19.5 (if and when applicable), or in event of termination by the Procuring Entity under GCC 42.2.

19.5 If a subcontractor's obligations extend beyond the expiry date of the relevant Defects Liability Period and the Project Manager, prior to that date, instructs the Contractor to assign the benefits of such obligations to the Procuring Entity, then the Contractor shall do so.

20 Design and Engineering

20.1 Specifications and Drawings

20.1.1 The Contractor shall execute the basic and detailed design and the engineering work in compliance with the provisions of the Contract, or where not so specified, in accordance with good engineering practice.

20.1.2 The Contractor shall be responsible for any discrepancies, errors or omissions in the specifications, drawings and other technical documents that it has prepared, whether such specifications, drawings and other documents have been approved by the Project Manager or not,

provided that such discrepancies, errors or omissions are not because of inaccurate information furnished in writing to the Contractor by or on behalf of the Procuring Entity.

20.1.2 The Contractor shall be entitled to disclaim responsibility for any design, data, drawing, specification or other document, or any modification thereof provided or designated by or on behalf of the Procuring Entity, by giving a notice of such disclaimer to the Project Manager.

20.2 Codes and Standards

Wherever references are made in the Contract to codes and standards in accordance with which the Contract shall be executed, the edition or the revised version of such codes and standards current at the date twenty-eight (28) days prior to date of Tender submission shall apply unless otherwise specified. During Contract execution, any changes in such codes and standards shall be applied subject to approval by the Procuring Entity and shall be treated in accordance with GCC Clause 39.

20.3 Approval/ Review of Technical Documents by Project Manager.

20.3.1 The Contractor shall prepare or cause its Subcontractors to prepare, and furnish to the Project Manager the documents listed in the Appendix to the Contract Agreement titled List of Documents for Approval or Review, for its approval or review as specified and in accordance with the requirements of GCC Sub-Clause 18.2 (Program of Performance).

20.3.2 Any part of the Facilities covered by or related to the documents to be approved by the Project Manager shall be executed only after the Project Manager's approval thereof.

GCC Sub-Clauses 20.3.2 through 20.3.7 shall apply to those documents requiring the Project Manager's approval, but not to those furnished to the Project Manager for its review only.

20.2.3 Within fourteen (14) days after receipt by the Project Manager of any document requiring the Project Manager's approval in accordance with GCC Sub-Clause 20.3.1, the Project Manager shall either return one copy thereof to the Contractor with its approval endorsed there on or shall notify the Contractor in writing of its disapproval thereof and the reasons therefor and the modifications that the Project Manager proposes.

If the Project Manager fails to take such action within the said fourteen (14) days, then the said document shall be deemed to have been approved by the Project Manager.

20.3.4 The Project Manager shall not disapprove any document, except on the grounds that the document does not comply with the Contractor that it is contrary to good engineering practice.

20.3.5 If the Project Manager disapproves the document, the Contractor shall modify the document and resubmit it for the Project Manager's approval in accordance with GCC Sub-Clause 20.3.2. If the Project Manager approves the document subject to modification(s), the Contractor shall make the required modification (s), where upon the document shall be deemed to have been approved.

20.3.6 If any dispute or difference occurs between the Procuring Entity and the Contractor in connection with or arising out of the disapproval by the Project Manager of any document and/or any modification (s) there to that cannot be settled between the Parties within a reasonable period, then such dispute or difference may be referred to a Dispute Board for determination in accordance with GCC Sub-Clause 46.1 hereof. If such dispute or difference is referred to a Dispute Board, the Project Manager shall give instructions as to whether and if so, how, performance of the Contract is to proceed. The Contractor shall proceed with the Contract in accordance with the Project Manager's instructions, provided that if the Dispute Board upholds the Contractor's view on the dispute and if the Procuring Entity has not given notice under GCC Sub-Clause 46.3 hereof, then the Contractor shall be reimbursed by the Procuring Entity for any additional costs incurred by reason of such instructions and shall be relieved of such responsibility or liability in connection with the dispute and

the execution of the instructions as the Dispute Board shall decide, and the Time for Completion shall be extended accordingly.

20.3.7 The Project Manager's approval, with or without modification of the document furnished by the Contractor, shall not relieve the Contractor of any responsibility or liability imposed upon it by any provisions of the Contract except to the extent that any subsequent failure results from modifications required by the Project Manager.

20.3.8 The Contractor shall not depart from any approved document unless the Contractor has first submitted to the Project Manager an amended document and obtained the Project Manager's approval thereof, pursuant to the provisions of this GCC Sub-Clause 20.3.

If the Project Manager requests any change in any already approved document and/or in any document based there on, the provisions of GCC Clause 39 shall apply to such request.

21 Procurement

21.1 Plant

Subject to GCC Sub-Clause 14.2, the Contractor shall procure and transport all Plant in an expeditious and orderly manner to the Site.

21.2 Procuring Entity-Supplied Plant

If the Appendix to the Contract Agreement titled *Scope of Works and Supply* by the Procuring Entity, provides that the Procuring Entity shall furnish any specific items to the Contractor, the following provisions shall apply:

21.2.1 The Procuring Entity shall, at its own risk and expense, transport each item to the place on or near the Site as agreed upon by the Parties and make such item available to the Contractor at the time specified in the program furnished by the Contractor, pursuant to GCC Sub-Clause 18.2, unless otherwise mutually agreed.

21.2.2 Upon receipt of such item, the Contractor shall inspect the same visually and notify the Project Manager of any detected shortage, defect or default. The Procuring Entity shall immediately remedy any shortage, defect or default, or the Contractor shall, if practicable and possible, at the request of the Procuring Entity, remedy such shortage, defect or default at the Procuring Entity's cost and expense. After inspection, such item shall fall under the care, custody and control of the Contractor. The provision of this GCC Sub-Clause 21.2.2 shall apply to any item supplied to remedy any such shortage or default or to substitute for any defective item, or shall apply to defective items that have been repaired.

21.2.3 The foregoing responsibilities of the Contractor and its obligations of care, custody and control shall not relieve the Procuring Entity of liability for any undetected shortage, defect or default, nor place the Contractor under any liability for any such shortage, defect or default whether under GCC Clause 27 or under any other provision of Contract.

21.3 Transportation

21.3.1 The Contractor shall at its own risk and expense transport all the materials and the Contractor's Equipment to the Site by the mode of transport that the Contractor judges most suitable under all the circumstances.

21.3.2 Unless otherwise provided in the Contract, the Contractor shall be entitled to select any safe mode of transport operated by any person to carry the materials and the Contractor's Equipment.

21.3.3 Upon dispatch of each shipment of materials and the Contractor's Equipment, the Contractor

shall notify the Procuring Entity by telex, cable, facsimile or electronic means, of the description of the materials and of the Contractor's Equipment, the point and means of dispatch, and the estimated time and point of arrival in the Kenya, if applicable, and at the Site. The Contractor shall furnish the Procuring Entity with relevant shipping documents to be agreed upon between the Parties.

21.3.4 The Contractor shall be responsible for obtaining, if necessary, approvals from the authorities for transportation of the materials and the Contractor's Equipment to the Site. The Procuring Entity shall use its best endeavors in a timely and expeditious manner to assist the Contractor in obtaining such approvals, if requested by the Contractor. The Contractor shall indemnify and hold harmless the Procuring Entity from and against any claim for damage to roads, bridges or any other traffic facilities that may be caused by the transport of the materials and the Contractor's Equipment to the Site.

21.4 Customs Clearance

21.4.1 The Contractor shall, at its own expense, handle all imported materials and Contractor's Equipment at the point(s) of import and shall handle any formalities for customs clearance, subject to the Procuring Entity's obligations under GCC Sub-Clause 14.2, provided that if applicable laws or regulations require any application or act to be made by or in the name of the Procuring Entity, the Procuring Entity shall take all necessary steps to comply with such laws or regulations. In the event of delays in customs clearance that are not the fault of the Contractor, the Contractor shall be entitled to an extension in the Time for Completion, pursuant to GCC Clause 40.

22 Installation

22.1 Setting Out/ Supervision

22.1.1 Bench Mark: The Contractor shall be responsible for the true and proper setting-out of the Facilities in relation to bench marks, reference marks and lines provided to it in writing by or on behalf of the Procuring Entity.

If, at any time during the progress of installation of the Facilities, any error shall appear in the position, level or alignment of the Facilities, the Contractor shall forth with notify the Project Manager of such error and, at its own expense, immediately rectify such error to the reasonable satisfaction of the Project Manager. If such error is based on incorrect data provided in writing by or on behalf of the Procuring Entity, the expense of rectifying the same shall be borne by the Procuring Entity.

22.1.2 Contractor's Supervision: The Contractor shall give or provide all necessary superintendence during the installation of the Facilities, and the Construction Manager or its deputy shall be constantly on the Site to provide full-time super intendance of the installation. The Contractor shall provide and employ only technical personnel who are skilled and experienced in their respective callings and supervisory staff who are competent to adequately supervise the work at hand.

22.2 Labor:

22.2.1 Engagement of Staff and Labor

Except as otherwise stated in the Specification, the Contractor shall make arrangements for the engagement of all staff and labor, local or otherwise, and for their payment, housing, feeding and transport.

The Contractor shall provide and employ on the Site in the installation of the Facilities such skilled, semi- skilled and unskilled labor as is necessary for the proper and timely execution of the Contract. The Contractor is encouraged to use local labor that has the necessary skills.

The Contractor shall be responsible for obtaining all necessary permit(s) and/or visa(s) from the appropriate authorities for the entry of all labor and personnel to be employed on the Site into Kenya.

The Procuring Entity will, if requested by the Contractor, use his best endeavors in a timely and expeditious manner to assist the Contractor in obtaining any local, state, national or government permission required for bringing in the Contractor's personnel.

The Contractor shall at its own expense provide the means of repatriation to all of its and its Subcontractor's personnel employed on the Contract at the Site to the place where they were recruited or to their domicile. It shall also provide suitable temporary maintenance of all such persons from the cessation of their employment on the Contract to the date programmed for their departure. In the event that the Contractor defaults in providing such means of transportation and temporary maintenance, the Procuring Entity may provide the same to such personnel and recover the cost of doing so from the Contractor.

22.2.2 Persons in the Service of Procuring Entity

The Contractor shall not recruit, or attempt to recruit, staff and labor from amongst the Procuring Entity's Personnel.

22.2.3 Labor Laws

The Contractor shall comply with all the relevant labor Laws applicable to the Contractor's Personnel, including Laws relating to their employment, health, safety, welfare, immigration and emigration, and shall allow them all their legal rights.

The Contractor shall at all times during the progress of the Contract use its best endeavors to prevent any unlawful, riotous or disorderly conduct or behavior by or amongst its employees and the labor of its Subcontractors.

The Contractor shall, in all dealings with its labor and the labor of its Subcontractors currently employed on or connected with the Contract, pay due regard to all recognized festivals, official holidays, religious or other customs and all local laws and regulations pertaining to the employment of labor.

22.2.4 Rates of Wages and Conditions of Labor

The Contractor shall pay rates of wages, and observe conditions of labor, which are not lower than those established for the trade or industry where the work is carried out. If no established rates or conditions are applicable, the Contractor shall pay rates of wages and observe conditions which are not lower than the general level of wages and conditions observed locally by Procuring Entities whose trade or industry is similar to that of the Contractor.

The Contractor shall inform the Contractor's Personnel about their liability to pay personal income taxes in the Country in respect of such of their salaries, wages and allowances as are chargeable under the Laws for the time being in force, and the Contractor shall perform such duties in regard to such deductions thereof as may be imposed on him by such Laws.

22.2.5 Working Hours

No work shall be carried out on the Site on locally recognized days of rest, or outside the normal working hours stated in the SCC, unless:

- a Otherwise stated in the Contract,
- b The Project Manager gives consent, or
- c The work is unavoidable, or necessary for the protection of life or property or for the safety of the Works, in which case the Contractor shall immediately advise the Project Manager.

If and when the Contractor considers it necessary to carryout work at night or on public holidays so as to meet the Time for Completion and requests the Project Manager's consent thereto, the Project

Manager shall not unreasonably withhold such consent.

This Sub-Clause shall not apply to any work which is customarily carried out by rotary or double-shifts.

22.2.6 Facilities for Staff and Labor

Except as otherwise stated in the Specification, the Contractor shall provide and maintain all necessary accommodation and welfare facilities for the Contractor's Personnel. The Contractor shall also provide facilities for the Procuring Entity's Personnel as stated in the Specification.

The Contractor shall not permit any of the Contractor's Personnel to maintain any temporary or permanent living quarters within the structures forming part of the Permanent Works.

22.2.7 Health and Safety

The Contractor shall at all times take all reasonable precautions to maintain the health and safety of the Contractor's Personnel. In collaboration with local health authorities, the Contractor shall ensure that medical staff, first aid facilities, sick bay and ambulance service are available at all times at the Site and at any accommodation for Contractor's and Procuring Entity's Personnel, and that suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics.

The Contractor shall appoint an accident prevention officer at the Site, responsible for maintaining safety and protection against accidents. This person shall be qualified for this responsibility, and shall have the authority to issue instructions and take protective measures to prevent accidents. Throughout the performance of the Contract, the Contractor shall provide whatever is required by this person to exercise this responsibility and authority.

The Contractor shall send to the Project Manager, details of any accident as soon as practicable after its occurrence. The Contractor shall maintain records and make reports concerning health, safety and welfare of persons, and damage to property, as the Project Manager may reasonably require.

The Contractor shall throughout the contract (including the Defects Notification Period): (i) conduct Information, Education and Consultation Communication (IEC) campaigns, at least every other month, addressed to all the Site staff and labor (including all the Contractor's employees, all Subcontractors and Procuring Entity's and Project Manager's' employees, and all truck drivers and crew making deliveries to Site for construction activities) and to the immediate local communities, concerning the risks, dangers and impact, and appropriate avoidance behavior with respect to of Sexually Transmitted Diseases (STD) - or Sexually Transmitted Infections (STI) in general and HIV/AIDS in particular; (ii) provide male or female condoms for all Site staff and labor as appropriate; and (iii) provide for STI and HIV/AIDS screening, diagnosis, counseling and referral to a dedicated national STI and HIV/AIDS program,(unless otherwise agreed) of all Site staff and labor.

The Contractor shall include in the program to be submitted for the execution of the Facilities under Sub- Clause 18.2 an alleviation program for Site staff and labor and their families in respect of Sexually Transmitted Infections (STI) and Sexually Transmitted Diseases (STD) including HIV/AIDS. The STI, STD and HIV/AIDS alleviation program shall indicate when, how and at what cost the Contractor plans to satisfy the requirements of this Sub-Clause and the related specification. For each component, the program shall detail the resources to be provided or utilized and any related sub-contracting proposed. The program shall also include provision of a detailed cost estimate with supporting documentation. Payment to the Contractor for preparation and implementation this program shall not exceed the Provisional Sum dedicated for this purpose.

22.2.8 Funeral Arrangements

In the event of the death of any of the Contractor's personnel or accompanying members of their families, the Contractor shall be responsible for making the appropriate arrangements for their return or burial, unless otherwise specified in the SCC.

22.2.9 Records of Contractor's Personnel

The Contractor shall keep accurate records of the Contractor's personnel, including the number of each class of Contractor's Personnel on the Site and the names, ages, genders, hours worked and wages paid to all workers. These records shall be summarized on a monthly basis in a form approved by the Project Manager and shall be available for inspection by the Project Manager until the Contractor has completed all work.

22.2.10 Supply of Food stuffs

The Contractor shall arrange for the provision of a sufficient supply of suitable food as may be stated in the Specification at reasonable prices for the Contractor's Personnel for the purposes of or in connection with the Contract.

22.2.11 Supply of Water

The Contractor shall, having regard to local conditions, provide on the Site an adequate supply of drinking and other water for the use of the Contractor's Personnel.

22.2.12 Measures against Insect and Pest Nuisance

The Contractor shall at all times take the necessary precautions to protect the Contractor's Personnel employed on the Site from insect and pest nuisance, and to reduce their danger to health. The Contractor shall comply with all the regulations of the local health authorities, including use of appropriate insecticide.

22.2.13 Alcoholic Liquor or Drugs

The Contractor shall not, otherwise than in accordance with the Laws of Kenya, import, sell, give barter or otherwise dispose of any alcoholic liquor or drugs, or permit or allow importation, sale, gift barter or disposal by Contractor's Personnel.

22.2.14 Arms and Ammunition

The Contractor shall not give, barter, or otherwise dispose of, to any person, any arms or ammunition of any kind, or allow Contractor's Personnel to do so.

22.2.15 Prohibition of All Forms of Forced or Compulsory Labor

The contractor shall not employ "forced or compulsory labor" in any form. "Forced or compulsory labor" consists of all work or service, not voluntarily performed, that is extracted from an individual under threat of force or penalty.

22.2.16 Prohibition of Harmful Child Labor

The Contractor shall not employ any child to perform any work that is economically exploitative, or is likely to be hazardous to, or to interfere with, the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development.

22.3 Contractor's Equipment

22.3.1 All Contractor's Equipment brought by the Contractor on to the Site shall be deemed to be intended to be used exclusively for the execution of the Contract. The Contractor shall not remove the same from the Site without the Project Manager's consent that such Contractor's Equipment is no

longer required for the execution of the Contract.

22.3.2 Unless otherwise specified in the Contract, upon completion of the Facilities, the Contractor shall remove from the Site all Equipment brought by the Contractor on to the Site and any surplus materials remaining there on.

22.3.3 The Procuring Entity will, if requested, use its best endeavors to assist the Contractor in obtaining any local, state or national government permission required by the Contractor for the export of the Contractor's Equipment imported by the Contractor for use in the execution of the Contract that is no longer required for the execution of the Contract.

22.4 Site Regulations and Safety

The Procuring Entity and the Contractor shall establish Site regulations setting out the rules to be observed in the execution of the Contract at the Site and shall comply there with. The Contractor shall prepare and submit to the Procuring Entity, with a copy to the Project Manager, proposed Site regulations for the Procuring Entity's approval, which approval shall not be unreasonably withheld.

Such Site regulations shall include, but shall not be limited to, rules in respect of security, safety of the Facilities, gate control, sanitation, medical care, and fire prevention.

22.5 Opportunities for Other Contractors

22.5.1 The Contractor shall, upon written request from the Procuring Entity or the Project Manager, give all reasonable opportunities for carrying out the work to any other contractors employed by the Procuring Entity on or near the Site.

22.5.2 If the Contractor, upon written request from the Procuring Entity or the Project Manager, makes available to other contractors any roads or ways the maintenance for which the Contractor is responsible, permits the use by such other contractors of the Contractor's Equipment, or provides any other service of whatsoever nature for such other contractors, the Procuring Entity shall fully compensate the Contractor for any loss or damage caused or occasioned by such other contractors in respect of any such use or service, and shall pay to the Contractor reasonable remuneration for the use of such equipment or the provision of such services.

22.5.3 The Contractor shall also so arrange to perform its work as to minimize, to the extent possible, interference with the work of other contractors. The Project Manager shall determine the resolution of any difference or conflict that may arise between the Contractor and other contractors and the workers of the Procuring Entity in regard to their work.

22.5.4 The Contractor shall notify the Project Manager promptly of any defects in the other contractors' work that come to its notice, and that could affect the Contractor's work. The Project Manager shall determine the corrective measures, if any, required to rectify the situation after inspection of the Facilities. Decisions made by the Project Manager shall be binding on the Contractor.

22.6 Emergency Work

If, by reason of an emergency arising in connection with and during the execution of the Contract, any protective or remedial work is necessary as a matter of urgency to prevent damage to the Facilities, the Contractor shall immediately carry out such work.

If the Contractor is unable or unwilling to do such work immediately, the Procuring Entity may cause such work to be done as the Procuring Entity may determine is necessary in order to prevent damage to the Facilities. In such event the Procuring Entity shall, as soon as practicable after the occurrence of any such emergency, notify the Contractor in writing of such emergency, the work done

and the reasons there for. If the work done or caused to be done by the Procuring Entity is work that the Contractor was liable to do at its own expense under the Contract, the reasonable costs incurred by the Procuring Entity in connection there with shall be paid by the Contractor to the Procuring Entity. Otherwise, the cost of such remedial work shall be borne by the Procuring Entity.

22.7 Site Clearance

22.7.1 Site Clearance in Course of Performance: In the course of carrying out the Contract, the Contractor shall keep the Site reasonably free from all unnecessary obstruction, store or remove any surplus materials, clear away any wreckage, rubbish or temporary works from the Site, and remove any Contractor's Equipment no longer required for execution of the Contract.

22.7.2 Clearance of Site after Completion: After Completion of all parts of the Facilities, the Contractor shall clear away and remove all wreckage, rubbish and debris of any kind from the Site, and shall leave the Site and Facilities in a clean and safe condition.

22.8 Watching and Lighting

The Contractor shall provide and maintain at its own expense all lighting, fencing, and watching when and where necessary for the proper execution and the protection of the Facilities, or for the safety of the owners and occupiers of adjacent property and for the safety of the public.

23 Test and Inspection

23.1 The Contractor shall at its own expense carry out at the place of manufacture and/or on the Site all such tests and/ or inspections of the Plant and any part of the Facilities as are specified in the Contract.

23.2 The Procuring Entity and the Project Manager or their designated representatives shall be entitled to attend the afore said test and/ or inspection, provided that the Procuring Entity shall bear all costs and expenses incurred in connection with such attendance including, but not limited to, all traveling and board and lodging expenses.

23.3 Whenever the Contractor is ready to carry out any such test and/or inspection, the Contractor shall give a reasonable advance notice of such test and/or inspection and of the place and time thereof to the Project Manager. The Contractor shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Procuring Entity and the Project Manager or their designated representatives to attend the test and/ or inspection.

23.4 The Contractor shall provide the Project Manager with a certified report of the results of any such test and/ or inspection. If the Procuring Entity or Project Manager or their designated representatives fails to attend the test and/or inspection, or if it is agreed between the Parties that such persons shall not do so, then the Contractor may proceed with the test and/ or inspection in the absence of such persons, and may provide the Project Manager with a certified report of the results thereof.

23.5 The Project Manager may require the Contractor to carry out any test and/or inspection not required by the Contract, provided that the Contractor's reasonable costs and expenses incurred in the carrying out of such test and/or inspection shall be added to the Contract Price. Further, if such test and/or inspection impede the progress of work on the Facilities and/or the Contractor's performance of its other obligations under the Contract, due allowance will be made in respect of the Time for Completion and the other obligations so affected.

23.6 If any Plant or any part of the Facilities fails to pass any test and/ or inspection, the Contractor

shall either rectify or replace such Plant or part of the Facilities and shall repeat the test and/or inspection upon giving a notice under GCC Sub-Clause 23.3.

23.7 If any dispute or difference of opinion shall arise between the Parties in connection with or arising out of the test and/or inspection of the Plant or part of the Facilities that cannot be settled between the Parties within a reasonable period of time, it may be referred to a Dispute Board for determination in accordance with GCC Sub-Clause 46.3.

23.8 The Contractor shall afford the Procuring Entity and the Project Manager, at the Procuring Entity's expense, access at any reasonable time to any place where the Plant are being manufactured or the Facilities are being installed, in order to inspect the progress and the manner of manufacture or installation, provided that the Project Manager shall give the Contractor a reasonable prior notice.

23.9 The Contractor agrees that neither the execution of a test and/ or inspection of Plant or any part of the Facilities, nor the attendance by the Procuring Entity or the Project Manager, nor the issue of any test certificate pursuant to GCC Sub-Clause 23.4, shall release the Contractor from any other responsibilities under the Contract.

23.10 No part of the Facilities or foundations shall be covered upon the Site without the Contractor carrying out any test and/or inspection required under the Contract. The Contractor shall give a reasonable notice to the Project Manager whenever any such parts of the Facilities or foundations are ready or about to be ready for test and/or inspection; such test and/or inspection and notice there of shall be subject to the requirements of the Contract.

23.11 The Contractor shall uncover any part of the Facilities or foundations, or shall make openings in or through the same as the Project Manager may from time to time require at the Site, and shall reinstate and make good such part or parts.

If any parts of the Facilities or foundations have been covered up at the Site after compliance with the requirement of GCC Sub-Clause 23.10 and are found to be executed in accordance with the Contract, the expenses of uncovering, making openings in or through, reinstating, and making good the same shall be borne by the Procuring Entity, and the Time for Completion shall be reasonably adjusted to the extent that the contractor has thereby been delayed or impeded in the performance of any of its obligations under the Contract.

24 Completion of the Facilities

24.1 As soon as the Facilities or any part thereof has, in the opinion of the Contractor, been completed operationally and structurally and put in a tight and clean condition as specified in the Procuring Entity's Requirements, excluding minor items not materially affecting the operation or safety of the Facilities, the Contractor shall so notify the Procuring Entity in writing.

24.2 Within seven (7) days after receipt of the notice from the Contractor under GCC Sub-Clause 24.1, the Procuring Entity shall supply the operating and maintenance personnel specified in the Appendix to the Contract Agreement titled Scope of Works and Supply by the Procuring Entity for Pre-commissioning of the Facilities or any part thereof.

24.3 Pursuant to the Appendix to the Contract Agreement titled Scope of Works and Supply by the Procuring Entity, the Procuring Entity shall also provide, within the said seven (7) day period, the raw materials, utilities, lubricants, chemicals, catalysts, facilities, services and other matters required for Pre-commissioning of the Facilities or any part thereof.

24.4 As soon as reasonably practicable after the operating and maintenance personnel have been supplied by the Procuring Entity and the raw materials, utilities, lubricants, chemicals, catalysts, facilities, services and other matters have been provided by the Procuring Entity in accordance with GCC Sub-Clause 24.2, the Contractor shall commence Pre-commissioning of the Facilities or the

relevant part thereof in preparation for Commissioning, subject to GCC Sub-Clause 25.5.

24.5 As soon as all works in respect of Pre-commissioning are completed and, in the opinion of the Contractor, the Facilities or any part thereof is ready for Commissioning, the Contractor shall so notify the Project Manager in writing.

24.6 The Project Manager shall, within fourteen (14) days after receipt of the Contractor's notice under GCC Sub-Clause 24.4, either issue a Completion Certificate in the form specified in the Procuring Entity's Requirements (Forms and Procedures), stating that the Facilities or that part thereof have reached Completion as of the date of the Contractor's notice under GCC Sub-Clause 24.4, or notify the Contractor in writing of any defects and/or deficiencies.

If the Project Manager Notifies the Contractor of any defects and/or deficiencies, the Contractor shall then correct such defects and/or deficiencies, and shall repeat the procedure described in GCC Sub-Clause 24.4.

If the Project Manager is satisfied that the Facilities or that part thereof have reached Completion, the Project Manager shall, within seven (7) days after receipt of the Contractor's repeated notice, issue a Completion Certificate stating that the Facilities or that part thereof have reached Completion as of the date of the Contractor's repeated notice.

If the Project Manager is not so satisfied, then it shall notify the Contractor in writing of any defects and/or deficiencies within seven (7) days after receipt of the Contractor's repeated notice, and the above procedure shall be repeated.

24.7 If the Project Manager fails to issue the Completion Certificate and fails to inform the Contractor of any defects and/or deficiencies within fourteen (14) days after receipt of the Contractor's notice under GCC Sub-Clause 24.4 or within seven (7) days after receipt of the Contractor's repeated notice under GCC Sub-Clause 24.5, or if the Procuring Entity makes use of the Facilities or part thereof, then the Facilities or that part thereof shall be deemed to have reached Completion as of the date of the Contractor's notice or repeated notice, or as of the Procuring Entity's use of the Facilities, as the case may be.

24.8 As soon as possible after Completion, the Contractor shall complete all outstanding minor items so that the Facilities are fully in accordance with the requirements of the Contract, failing which the Procuring Entity will undertake such completion and deduct the costs thereof from any monies owing to the Contractor.

24.9 Upon Completion, the Procuring Entity shall be responsible for the care and custody of the Facilities or the relevant part thereof, together with the risk of loss or damage thereto, and shall thereafter take over the Facilities or the relevant part thereof.

25 Commissioning and Operational Acceptance

25.1 Commissioning

25.1.1 Commissioning of the Facilities or any part thereof shall be commenced by the Contractor immediately after issue of the Completion Certificate by the Project Manager, pursuant to GCC Sub-Clause 24.5, or immediately after the date of the deemed Completion, under GCC Sub-Clause 24.6.

25.1.2 The Procuring Entity shall supply the operating and maintenance personnel and all raw materials, utilities, lubricants, chemicals, catalysts, facilities, services and other matters required for Commissioning.

25.1.3 In accordance with the requirements of the Contract, the Contractor's and Project

Manager's advisory personnel shall attend the Commissioning, including the Guarantee Test, and shall advise and assist the Procuring Entity.

25.2 Guarantee Test

25.2 Subject to GCC Sub-Clause 25.5, the Guarantee Test and repeats thereof shall be conducted by the Contractor during Commissioning of the Facilities or the relevant part thereof to ascertain whether the Facilities or the relevant part can attain the Functional Guarantees specified in the Appendix to the Contract Agreement titled Functional Guarantees. The Procuring Entity shall promptly provide the Contractor with such information as the Contractor may reasonably require in relation to the conduct and results of the Guarantee Test and any repeats thereof.

25.1.1 If for reasons not attributable to the Contractor, the Guarantee Test of the Facilities or the relevant part thereof cannot be successfully completed within the period from the date of Completion specified in the SCC or any other period agreed upon by the Procuring Entity and the Contractor, the Contractor shall be deemed to have fulfilled its obligations with respect to the Functional Guarantees, and GCC Sub-Clauses 28.2 and 28.3 shall not apply.

25.3 Operational Acceptance

25.3.1 Subject to GCC Sub-Clause 25.4 below, Operational Acceptance shall occur in respect of the Facilities or any part thereof when

- a) The Guarantee Test has been successfully completed and the Functional Guarantees are met; or
 - b) the Guarantee Test has not been successfully completed or has not been carried out for reasons not attributable to the Contractor within the period from the date of Completion specified in the SCC pursuant to GCC Sub-Clause 25.2.2 above or any other period agreed upon by the Procuring Entity and the Contractor; or
 - c) the Contractor has paid the liquidated damages specified in GCC Sub-Clause 28.3 hereof; and
- a any minor items mentioned in GCC Sub-Clause 24.7 here of relevant to the Facilities or that part thereof have been completed.

25.3.2 At any time after any of the events set out in GCC Sub-Clause 25.3.1 have occurred, the Contractor may give a notice to the Project Manager requesting the issue of an Operational Acceptance Certificate in the form provided in the Procuring Entity's Requirements (Forms and Procedures) in respect of the Facilities or the part thereof specified in such notice as of the date of such notice.

25.3.3 The Project Manager shall, after consultation with the Procuring Entity, and within seven (7) days after receipt of the Contractor's notice, issue an Operational Acceptance Certificate.

25.3.4 If within seven (7) days after receipt of the Contractor's notice, the Project Manager fails to issue the Operational Acceptance Certificate or fails to inform the Contractor in writing of the justifiable reasons why the Project Manager has not issued the Operational Acceptance Certificate, the Facilities or the relevant part thereof shall be deemed to have been accepted as of the date of the Contractor's said notice.

25.4 Partial Acceptance

25.4.1 If the Contract specifies that Completion and Commissioning shall be carried out in respect of parts of the Facilities, the provisions relating to Completion and commissioning including the Guarantee Test shall apply to each such part of the Facilities individually, and the Operational Acceptance Certificate shall be issued accordingly for each such part of the Facilities.

25.4.2 If a part of the Facilities comprises facilities such as buildings, for which no

Commissioning or Guarantee Test is required, then the Project Manager shall issue the Operational Acceptance Certificate for such facility when it attains Completion, provided that the Contractor shall there after complete any outstanding minor items that are listed in the Operational Acceptance Certificate.

25.5 Delayed Pre-commissioning and/or Guarantee Test

25.5.1 In the event that the Contractor is unable to proceed with the Pre-commissioning of the Facilities pursuant to Sub-Clause 24.3, or with the Guarantee Test pursuant to Sub-Clause 25.2, for reasons attributable to the Procuring Entity either on account of non-availability of other facilities under the responsibilities of other contractor(s), or for reasons beyond the Contractor's control, the provisions leading to "deemed" completion of activities such as Completion, pursuant to GCC Sub-Clause 24.6, and Operational Acceptance, pursuant to GCC Sub-Clause 25.3.4, and Contractor's obligations regarding Defect Liability Period, pursuant to GCC Sub-Clause 27.2, Functional Guarantee, pursuant to GCC Clause 28, and Care of Facilities, pursuant to GCC Clause 32, and GCC Clause 41.1, Suspension, shall not apply. In this case, the following provisions shall apply.

25.5.2 When the Contractor is notified by the Project Manager that he will be unable to proceed with the activities and obligations pursuant to above Sub-Clause 25.5.1, the Contractor shall be entitled to the following:

- a)** The Time of Completion shall be extended for the period of suspension without imposition of liquidated damages pursuant to GCC Sub-Clause 26.2;
- b)** payments due to the Contractor in accordance with the provision specified in the Appendix to the Contract Agreement titled Terms and Procedures of Payment, which would not have been payable in normal circumstances due to non-completion of the subject activities, shall be released to the Contractor against submission of a security in the form of a bank guarantee of equivalent amount acceptable to the Procuring Entity, and which shall become null and void when the Contractor will have complied with its obligations regarding those payments, subject to the provision of Sub-Clause 25.5.3 below;
- c)** the expenses towards the above security and extension of other securities under the contract, of which validity needs to be extended, shall be reimbursed to the Contractor by the Procuring Entity;
- d)** the additional charges towards the care of the Facilities pursuant to GCC Sub-Clause 32.1 shall be reimbursed to the Contractor by the Procuring Entity for the period between the notification mentioned above and the notification mentioned in Sub-Clause 25.5.4 below. The provision of GCC Sub-Clause 33.2 shall apply to the Facilities during the same period.
- e)** Where the contract price is different from the corrected tender price, in order to ensure the contractor is not paid less or more relative to the contract price (which would be the tender price), payment valuation certificates and variation orders on omissions and additions valued based on rates in the Bill of Quantities or schedule of rates in the Tender, will be adjusted by a plus or minus percentage. The percentage already worked out during tender evaluation is worked out as follows: $(\text{corrected tender price} - \text{tender price}) / \text{tender price} \times 100$.

25.5.3 In the event that the period of suspension under above Sub-Clause 25.5.1 actually exceeds one hundred eighty (180) days, the Procuring Entity and Contractor shall mutually agree to any additional compensation payable to the Contractor.

25.5.4 When the Contractor is notified by the Project Manager that the plant is ready for Pre-commissioning, the Contractor shall proceed without delay in performing Pre-commissioning in accordance with Clause 24.

A. Guarantees and Liabilities

26 Completion Time Guarantee

26.1 The Contractor guarantees that it shall attain Completion of the Facilities (or a part for which a separate time for completion is specified) within the Time for Completion specified in the SCC pursuant to GCC Sub-Clause 8.2, or within such extended time to which the Contractor shall be entitled under GCC Clause 40 hereof.

26.2 If the Contractor fails to attain Completion of the Facilities or any part thereof within the Time for Completion or any extension thereof under GCC Clause 40, the Contractor shall pay to the Procuring Entity liquidated damages in the amount specified in the SCC as a percentage rate of the Contract Price or the relevant part thereof. The aggregate amount of such liquidated damages shall in no event exceed the amount specified as "Maximum" in the SCC as a percentage rate of the Contract Price. Once the "Maximum" is reached, the Procuring Entity may consider termination of the Contract, pursuant to GCC Sub-Clause 42.2.2.

26.3 Such payment shall completely satisfy the Contractor's obligation to attain Completion of the Facilities or the relevant part thereof within the Time for Completion or any extension thereof under GCC Clause 40. The Contractor shall have no further liability whatsoever to the Procuring Entity in respect thereof.

26.4 However, the payment of liquidated damages shall not in any way relieve the Contractor from any of its obligations to complete the Facilities or from any other obligations and liabilities of the Contractor under the Contract.

26.5 Save for liquidated damages payable under this GCC Sub-Clause 26.2, the failure by the Contractor to attain any milestone or other act, matter or thing by any date specified in the Appendix to the Contract Agreement titled Time Schedule, and/or other program of work prepared pursuant to GCC Sub-Clause 18.2 shall not render the Contractor liable for any loss or damage there by suffered by the Procuring Entity.

26.6 If the Contractor attains Completion of the Facilities or any part thereof before the Time for Completion or any extension thereof under GCC Clause 40, the Procuring Entity shall pay to the Contractor a bonus in the amount specified in the SCC. The aggregate amount of such bonus shall in no event exceed the amount specified as "Maximum" in the SCC.

27 Defect Liability

27.1 The Contractor warrants that the Facilities or any part thereof shall be free from defects in the design, engineering, materials and workmanship of the Plant supplied and of the work executed.

27.2 The Defect Liability Period shall be five hundred and forty (540) days from the date of Completion of the Facilities (or any part thereof) or one year from the date of Operational Acceptance of the Facilities (or any part thereof), whichever first occurs, unless specified otherwise in the SCC pursuant to GCC Sub-Clause 27.10.

If during the Defect Liability Period any defect should be found in the design, engineering, materials and workmanship of the Plant supplied or of the work executed by the Contractor, the Contractor shall promptly, in consultation and agreement with the Procuring Entity regarding appropriate remedying of the defects, and at its cost, repair, replace or otherwise make good as the Contractor shall determine at its discretion, such defect as well as any damage to the Facilities caused by such defect. The Contractor shall not be responsible for the repair, replacement or making good of any defector of any damage to the Facilities arising out of or resulting from any of the following causes:

- a) Improper operation or maintenance of the Facilities by the Procuring Entity;

- b) Operation of the Facilities outside specifications provided in the Contract; or
- c) Normal wear and tear.

27.3 The Contractor's obligations under this GCC Clause 27 shall not apply to:

- a) any materials that are supplied by the Procuring Entity under GCC Sub-Clause 21.2, are normally consumed in operation, or have a normal life shorter than the Defect Liability Period stated herein;
- b) any designs, specifications or other data designed, supplied or specified by or on behalf of the Procuring Entity or any matters for which the Contractor has disclaimed responsibility herein; or
- c) any other materials supplied or any other work executed by or on behalf of the Procuring Entity, except for the work executed by the Procuring Entity under GCC Sub-Clause 27.7.

27.4 The Procuring Entity shall give the Contractor a notice stating the nature of any such defect together with all available evidence thereof, promptly following the discovery thereof. The Procuring Entity shall afford all reasonable opportunity for the Contractor to inspect any such defect.

27.5 The Procuring Entity shall afford the Contractor all necessary access to the Facilities and the Site to enable the Contractor to perform its obligations under this GCC Clause 27.

The Contractor may, with the consent of the Procuring Entity, remove from the Site any Plant or any part of the Facilities that are defective if the nature of the defect, and/or any damage to the Facilities caused by the defect, is such that repairs cannot be expeditiously carried out at the Site.

27.6 If the repair, replacement or making good is of such a character that it may affect the efficiency of the Facilities or any part thereof, the Procuring Entity may give to the Contractor a notice requiring that tests of the defective part of the Facilities shall be made by the Contractor immediately upon completion of such remedial work, where upon the Contractor shall carryout such tests.

27.7 If such part fails the tests, the Contractor shall carryout further repair, replacement or making good, as the case may be, until that part of the Facilities passes such tests. The tests shall be agreed upon by the Procuring Entity and the Contractor.

27.8 If the Contractor fails to commence the work necessary to remedy such defector any damage to the Facilities caused by such defect within a reasonable time (which shall in no event be considered to be less than fifteen (15) days), the Procuring Entity may, following notice to the Contractor, proceed to do such work, and the reasonable costs incurred by the Procuring Entity in connection there with shall be paid to the Procuring Entity by the Contractor or may be deducted by the Procuring Entity from any monies due the Contractor or claimed under the Performance Security.

27.9 If the Facilities or any part thereof cannot be used by reason of such defect and/or making good of such defect, the Defect Liability Period of the Facilities or such part, as the case may be, shall be extended by a period equal to the period during which the Facilities or such part cannot be used by the Procuring Entity because of any of the aforesaid reasons.

27.10 Except as provided in GCC Clauses 27 and 33, the Contractor shall be under no liability whatsoever and how so ever arising, and whether under the Contractor at law, in respect of defects in the Facilities or any part thereof, the Plant, design or engineering or work executed that appear after Completion of the Facilities or any part thereof, except where such defects are the result of the gross negligence, fraud, or criminal or willful action of the Contractor.

27.11 In addition, any such component of the Facilities, and during the period of time as may be

specified in the SCC, shall be subject to an extended defect liability period. Such obligation of the Contractor shall be in addition to the defect liability period specified under GCC Sub-Clause 27.2.

28 Functional Guarantees

28.1 The Contractor guarantees that during the Guarantee Test, the Facilities and all parts thereof shall attain the Functional Guarantees specified in the Appendix to the Contract Agreement titled Functional Guarantees, subject to and upon the conditions therein specified.

28.2 If, for reasons attributable to the Contractor, the minimum level of the Functional Guarantees specified in the Appendix to the Contract Agreement titled Functional Guarantees, are not met either in whole or in part, the Contractor shall at its cost and expense make such changes, modifications and/ or additions to the Plant or any part thereof as may be necessary to meet at least the minimum level of such Guarantees. The Contractor shall notify the Procuring Entity upon completion of the necessary changes, modifications and/or additions, and shall request the Procuring Entity to repeat the Guarantee Test until the minimum level of the Guarantees has been met. If the Contractor eventually fails to meet the minimum level of Functional Guarantees, the Procuring Entity may consider termination of the Contract, pursuant to GCC Sub-Clause 42.2.2.

28.3 If, for reasons attributable to the Contractor, the Functional Guarantees specified in the Appendix to the Contract Agreement titled Functional Guarantees, are not attained either in whole or in part, but the minimum level of the Functional Guarantees specified in the said Appendix to the Contract Agreement is met, the Contractor shall, at the Contractor's option, either

a Make such changes, modifications and/or additions to the Facilities or any part thereof that are necessary to attain the Functional Guarantees at its cost and expense, and shall request the Procuring Entity to repeat the Guarantee Test or

b Pay liquidated damages to the Procuring Entity in respect of the failure to meet the Functional Guarantees in accordance with the provisions in the Appendix to the Contract Agreement titled Functional Guarantees.

c The payment of liquidated damages under GCC Sub-Clause 28.3, up to the limitation of liability specified in the Appendix to the Contract Agreement titled Functional Guarantees, shall completely satisfy the Contractor's guarantees under GCC Sub-Clause 28.3, and the Contractor shall have no further liability whatsoever to the Procuring Entity in respect thereof. Upon the payment of such liquidated damages by the Contractor, the Project Manager shall issue the Operational Acceptance Certificate for the Facilities or any part thereof in respect of which the liquidated damages have been so paid.

29 Patent Indemnity

29.1 The Contractor shall, subject to the Procuring Entity's compliance with GCC Sub-Clause 29.2, indemnify and hold harmless the Procuring Entity and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of whatsoever nature, including attorney's fees and expenses, which the Procuring Entity may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copy right or other intellectual property right registered or otherwise existing at the date of the Contract by reason of: (a) the installation of the Facilities by the Contractor or the use of the Facilities in Kenya; and (b) the sale of the products produced by the Facilities in any country.

29.2 Such indemnity shall not cover any use of the Facilities or any part thereof other than for the purpose indicated by or to be reasonably inferred from the Contract, any infringement resulting from the use of the Facilities or any part thereof, or any products produced thereby in association or combination with any other equipment, plant or materials not supplied by the Contractor,

pursuant to the Contract Agreement.

29.3 If any proceedings are brought or any claim is made against the Procuring Entity arising out of the matters referred to in GCC Sub-Clause 29.1, the Procuring Entity shall promptly give the Contractor a notice thereof, and the Contractor may at its own expense and in the Procuring Entity's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim.

29.4 If the Contractor fails to notify the Procuring Entity within twenty-eight (28) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Procuring Entity shall be free to conduct the same on its own behalf. Unless the Contractor has so failed to notify the Procuring Entity within the twenty- eight (28) day period, the Procuring Entity shall make no admission that may be prejudicial to the defense of any such proceedings or claim.

29.5 The Procuring Entity shall, at the Contractor's request, afford all available assistance to the Contractor in conducting such proceedings or claim, and shall be reimbursed by the Contractor for all reasonable expenses incurred in so doing.

29.6 The Procuring Entity shall indemnify and hold harmless the Contractor and its employees, officers and Subcontractors from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of whatsoever nature, including attorney's fees and expenses, which the Contractor may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright or other intellectual property right registered or otherwise existing at the date of the Contract arising out of or in connection with any design, data, drawing, specification, or other documents or materials provided or designed by or on behalf of the Procuring Entity.

30 Limitation of Liability

30.1 Except in cases of criminal negligence or willful misconduct,

- a) Neither Party shall be liable to the other Party, whether in contract, tort, or otherwise, for any in director consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, which may be suffered by the other Party in connection with the Contract, other than specifically provided as any obligation of the Party in the Contract, and
- b) the aggregate liability of the Contractor to the Procuring Entity, whether under the Contract, in tort or otherwise, shall not exceed the amount resulting from the application of the multiplier specified in the SCC, to the Contract Price or, if a multiplier is not so specified, the total Contract Price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment, or to any obligation of the Contractor to indemnify the Procuring Entity with respect to patent infringement.

B. Risk Distribution

31 Transfer of Ownership

31.1 Ownership of the Plant (including spare parts) to be imported in to Kenya shall be transferred to the Procuring Entity upon loading on to the mode of transport to be used to convey the Plant from the country of origin to that country.

31.2 Ownership of the Plant (including spare parts) procured in Kenya shall be transferred to the

Procuring Entity when the Plant are brought on to the Site.

31.3 Ownership of the Contractor's Equipment used by the Contractor and its Subcontractors in connection with the Contract shall remain with the Contractor or its Subcontractors.

31.4 Ownership of any Plant in excess of the requirements for the Facilities shall revert to the Contractor upon Completion of the Facilities or at such earlier time when the Procuring Entity and the Contractor agree that the Plant in question are no longer required for the Facilities.

31.5 Notwithstanding the transfer of ownership of the Plant, the responsibility for care and custody thereof together with the risk of loss or damage there to shall remain with the Contractor pursuant to GCC Clause 32 (Care of Facilities) hereof until Completion of the Facilities or the part thereof in which such Plant are incorporated.

32 Care of Facilities

32.1 The Contractor shall be responsible for the care and custody of the Facilities or any part thereof until the date of Completion of the Facilities pursuant to GCC Clause 24 or, where the Contract provides for Completion of the Facilities in parts, until the date of Completion of the relevant part, and shall make good at its own cost any loss or damage that may occur to the Facilities or the relevant part thereof from any cause whatsoever during such period. The Contractor shall also be responsible for any loss or damage to the Facilities caused by the Contractor or its Subcontractors in the course of any work carried out, pursuant to GCC Clause 27. Notwithstanding the foregoing, the Contractor shall not be liable for any loss or damage to the Facilities or that part thereof caused by reason of any of the matters specified or referred to in paragraphs (a), (b) and (c) of GCC Sub-Clauses 32.2 and 38.1.

32.2 If any loss or damage occurs to the Facilities or any part, thereof or to the Contractor's temporary facilities by reason of

a insofar as they relate to Kenya, nuclear reaction, nuclear radiation, radioactive contamination, pressure wave caused by aircraft or other aerial objects, or any other occurrences that an experienced contractor or could not reasonably foresee, or if reasonably foreseeable could not reasonably make provision for or insure against, in so far as such risks are not normally insurable on the insurance market and are mentioned in the general exclusions of the policy of insurance, including War Risks and Political Risks, taken out under GCC Clause 34 hereof; or

b any use or occupation by the Procuring Entity or any third Party other than a Subcontractor, authorized by the Procuring Entity of any part of the Facilities; or

c any use of or reliance upon any design, data or specification provided or designated by or on behalf of the Procuring Entity, or any such matter for which the Contractor has disclaimed responsibility herein, the Procuring Entity shall pay to the Contractor all sums payable in respect of the Facilities executed, notwithstanding that the same be lost, destroyed or damaged, and will pay to the Contractor the replacement value of all temporary facilities and all parts thereof lost, destroyed or damaged. If the Procuring Entity requests the Contractor in writing to make good any loss or damage to the Facilities thereby occasioned, the Contractor shall make good the same at the cost of the Procuring Entity in accordance with GCC Clause 39. If the Procuring Entity does not request the Contractor in writing to make good any loss or damage to the Facilities thereby occasioned, the Procuring Entity shall either request a change in accordance with GCC Clause 39, excluding the performance of that part of the Facilities there by lost, destroyed or damaged, or, where the loss or damage affects a substantial part of the Facilities, the Procuring Entity shall terminate the Contract pursuant to GCC Sub-Clause 42.1 hereof.

32.3 The Contractor shall be liable for any loss of or damage to any Contractor's Equipment, or any other property of the Contractor used or intended to be used for purposes of the Facilities, except (i) as mentioned in GCC Sub-Clause 32.2 with respect to the Contractor's temporary facilities,

and (ii) where such loss or damage arises by reason of any of the matters specified in GCC Sub-Clauses 32.2 (b) and (c) and 38.1.

32.4 With respect to any loss or damage caused to the Facilities or any part thereof or to the Contractor's Equipment by reason of any of the matters specified in GCC Sub-Clause 38.1, the provisions of GCC Sub-Clause 38.3 shall apply.

33 Loss of or Damage to Property; Accident or Injury to Workers; Indemnification

33.1 Subject to GCC Sub-Clause 33.3, the Contractor shall indemnify and hold harmless the Procuring Entity and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of whatsoever nature, including attorney's fees and expenses, in respect of the death or injury of any person or loss of or damage to any property other than the Facilities whether accepted or not, arising in connection with the supply and installation of the Facilities and by reason of the negligence of the Contractor or its Subcontractors, or their employees, officers or agents, except any injury, death or property damage caused by the negligence of the Procuring Entity, its contractors, employees, officers or agents.

33.2 If any proceedings are brought or any claim is made against the Procuring Entity that might subject the Contractor to liability under GCC Sub-Clause 33.1, the Procuring Entity shall promptly give the Contractor a notice thereof and the Contractor may at its own expense and in the Procuring Entity's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim.

33.8 If the Contractor fails to notify the Procuring Entity within twenty-eight (28) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Procuring Entity shall be free to conduct the same on its own behalf. Unless the Contractor has so failed to notify the Procuring Entity within the twenty-eight (28) day period, the Procuring Entity shall make no admission that may be prejudicial to the defense of any such proceedings or claim.

33.9 The Procuring Entity shall, at the Contractor's request, afford all available assistance to the Contractor in conducting such proceedings or claim, and shall be reimbursed by the Contractor for all reasonable expenses incurred in so doing.

33.10 The Procuring Entity shall indemnify and hold harmless the Contractor and its employees, officers and Subcontractors from any liability for loss of or damage to property of the Procuring Entity, other than the Facilities not yet taken over, that is caused by fire, explosion or any other perils, in excess of the amount recoverable from insurances procured under GCC Clause 34, provided that such fire, explosion or other perils were not caused by any actor failure of the Contractor.

33.11 The Party entitled to the benefit of an indemnity under this GCC Clause 33 shall take all reasonable measures to mitigate any loss or damage which has occurred. If the Party fails to take such measures, the other Party's liabilities shall be correspondingly reduced.

34 Insurance

34.1 To the extent specified in the Appendix to the Contract Agreement titled Insurance Requirements, the Contractor shall at its expense take out and maintain in effect, or cause to be taken out and maintained in effect, during the performance of the Contract, the insurances set forth below in the sums and with the deductibles and other conditions specified in the said Appendix. The identity of the insurers and the form of the policies shall be subject to the approval of the Procuring Entity, who should not unreasonably withhold such approval.

a. Cargo Insurance During Transport

Covering loss or damage occurring while in transit from the Contractor's or Subcontractor's works or stores until arrival at the Site, to the Plant (including spare parts therefor) and to the Contractor's Equipment.

b. Installation All Risks Insurance

Covering physical loss or damage to the Facilities at the Site, occurring prior to Completion of the Facilities, with an extended maintenance coverage for the Contractor's liability in respect of any loss or damage occurring during the Defect Liability Period while the Contractor is on the Site for the purpose of performing its obligations during the Defect Liability Period.

c. Third Party Liability Insurance

Covering bodily injury or death suffered by third Parties including the Procuring Entity's personnel, and loss of or damage to property occurring in connection with the supply and installation of the Facilities.

d. Automobile Liability Insurance

Covering use of all vehicles used by the Contractor or its Subcontractors, whether or not owned by them, in connection with the execution of the Contract.

c. Workers' Compensation

In accordance with the statutory requirements applicable in any country where the Contract or any part thereof is executed.

d. Procuring Entity's Liability

In accordance with the statutory requirements applicable in any country where the Contract or any part thereof is executed.

e. Other Insurances

Such other insurances as may be specifically agreed upon by the Parties here to as listed in the Appendix to the Contract Agreement titled Insurance Requirements.

34.2 The Procuring Entity shall be named as co-insured under all insurance policies taken out by the Contractor pursuant to GCC Sub-Clause 34.1, except for the Third Party Liability, Workers' Compensation and Procuring Entity's Liability Insurances, and the Contractor's Subcontractors shall be named as co-insureds under all insurance policies taken out by the Contractor pursuant to GCC Sub-Clause 34.1 except for the Cargo Insurance During Transport, Workers' Compensation and Procuring Entity's Liability Insurances. All insurer's rights of subrogation against such co-insureds for losses or claims arising out of the performance of the Contract shall be waived under such policies.

34.3 The Contractor shall, in accordance with the provisions of the Appendix to the Contract Agreement titled Insurance Requirements, deliver to the Procuring Entity certificates of insurance or copies of the insurance policies as evidence that the required policies are in full force and effect. The certificates shall provide that no less than twenty-one (21) days' notice shall be given to the Procuring Entity by insurers prior to cancellation or material modification of a policy.

34.4 The Contractor shall ensure that, where applicable, its Subcontractor(s) shall take out and maintain in effect adequate insurance policies for their personnel and vehicles and for work executed by them under the Contract, unless such Subcontractors are covered by the policies taken out by the Contractor.

34.5 The Procuring Entity shall at its expense take out and maintain in effect during the performance of the Contract those insurances specified in the Appendix to the Contract Agreement titled Insurance

Requirements, in the sums and with the deductibles and other conditions specified in the said Appendix. The Contractor and the Contractor's Subcontractors shall be named as co-insureds under all such policies. All insurers' rights of subrogation against such co-insureds for losses or claims arising out of the performance of the Contract shall be waived under such policies. The Procuring Entity shall deliver to the Contractor satisfactory evidence that the required insurances are in full force and effect. The policies shall provide that not less than twenty-one (21) days' notice shall be given to the Contractor by all insurers prior to any cancellation or material modification of the policies. If so requested by the Contractor, the Procuring Entity shall provide copies of the policies taken out by the Procuring Entity under this GCC Sub-Clause 34.5.

34.6 If the Contractor fails to take out and/or maintain in effect the insurances referred to in GCC Sub-Clause 34.1, the Procuring Entity may take out and maintain in effect any such insurances and may from time to time deduct from any amount due the Contractor under the Contract any premium that the Procuring Entity shall have paid to the insurer, or may otherwise recover such amount as a debt due from the Contractor. If the Procuring Entity fails to take out and/or maintain in effect the insurances referred to in GCC 34.5, the Contractor may take out and maintain in effect any such insurances and may from time to time deduct from any amount due the Procuring Entity under the Contract any premium that the Contractor shall have paid to the insurer, or may otherwise recover such amount as a debt due from the Procuring Entity. If the Contractor fails to or is unable to take out and maintain in effect any such insurances, the Contractor shall nevertheless have no liability or responsibility towards the Procuring Entity, and the Contractor shall have full recourse against the Procuring Entity for any and all liabilities of the Procuring Entity herein.

34.7 Unless otherwise provided in the Contract, the Contractor shall prepare and conduct all and any claims made under the policies effected by it pursuant to this GCC Clause 34, and all monies payable by any insurers shall be paid to the Contractor. The Procuring Entity shall give to the Contractor all such reasonable assistance as may be required by the Contractor. With respect to insurance claims in which the Procuring Entity's interest is involved, the Contractor shall not give any release or make any compromise with the insurer without the prior written consent of the Procuring Entity. With respect to insurance claims in which the Contractor's interest is involved, the Procuring Entity shall not give any release or make any compromise with the insurer without the prior written consent of the Contractor.

35. Unforeseen Conditions

35.1 If, during the execution of the Contract, the Contractor shall encounter on the Site any physical conditions other than climatic conditions, or artificial obstructions that could not have been reasonably foreseen prior to the date of the Contract Agreement by an experienced contractor on the basis of reasonable examination of the data relating to the Facilities including any data as to boring tests, provided by the Procuring Entity, and on the basis of information that it could have obtained from a visual inspection of the Site if access thereto was available, or other data readily available to it relating to the Facilities, and if the Contractor determines that it will in consequence of such conditions or obstructions incur additional cost and expense or require additional time to perform its obligations under the Contract that would not have been required if such physical conditions or artificial obstructions had not been encountered, the Contractor shall promptly, and before performing additional work or using additional Plant or Contractor's Equipment, notify the Project Manager in writing of

- a) the physical conditions or artificial obstructions on the Site that could not have been reasonably foreseen;
- c) the additional work and/or Plant and/or Contractor's Equipment required, including the steps which the Contractor will or proposes to take to overcome such conditions or obstructions;

- d) the extent of the anticipated delay; and
- d) the additional cost and expense that the Contractor is likely to incur.

On receiving any notice from the Contractor under this GCC Sub-Clause 35.1, the Project Manager shall promptly consult with the Procuring Entity and Contractor and decide upon the actions to be taken to overcome the physical

35.2 If the Contractor is delayed or impeded in the performance of the Contract because of any such physical conditions or artificial obstructions referred to in GCC Sub-Clause 35.1, the Time for Completion shall be extended in accordance with GCC Clause 40.

36. Change in Laws and Regulations

36.1 If, after the date twenty-eight (28) days prior to the date of Tender submission, in Kenya, any law, regulation, ordinance, order or by-law having the force of law is enacted, promulgated, abrogated or changed which shall be deemed to include any change in interpretation or application by the competent authorities, that subsequently affects the costs and expenses of the Contractor and/or the Time for Completion, the Contract Price shall be correspondingly increased or decreased, and/or the Time for Completion shall be reasonably adjusted to the extent that the Contractor has thereby been affected in the performance of any of its obligations under the Contract. Notwithstanding the foregoing, such additional or reduced costs shall not be separately paid or credited if the same has already been accounted for in the price adjustment provisions where applicable, in accordance with the SCC pursuant to GCC Sub-Clause 11.2.

37. Force Majeure

37.1 "Force Majeure" shall mean any event beyond the reasonable control of the Procuring Entity or of the Contractor, as the case may be, and which is unavoidable notwithstanding the reasonable care of the Party affected, and shall include, without limitation, the following:

- a) war, hostilities or warlike operations whether a state of war be declared or not, invasion, act of foreign enemy and civil war
- b) rebellion, revolution, insurrection, mutiny, usurpation of civil or military government, conspiracy, riot, civil commotion and terrorist acts
- c) confiscation, nationalization, mobilization, commandeering or requisition by or under the order of any government or de jure or de facto authority or ruler or any other act or failure to act of any local state or national government authority
- d) strike, sabotage, lockout, embargo, import restriction, port congestion, lack of usual means of public transportation and communication, industrial dispute, shipwreck, shortage or restriction of power supply, epidemics, quarantine and plague
- e) earthquake, landslide, volcanic activity, fire, flood or inundation, tidal wave, typhoon or cyclone, hurricane, storm, lightning, or other inclement weather condition, nuclear and pressure waves or other natural or physical disaster
- f) shortage of labor, materials or utilities where caused by circumstances that are themselves Force Majeure.

37.2 If either Party is prevented, hindered or delayed from or in performing any of its obligations under the Contract by an event of Force Majeure, then it shall notify the other in writing of the occurrence of such event and the circumstances thereof within fourteen (14) days after the occurrence of such event.

37.3 The Party who has given such notice shall be excused from the performance or punctual performance of its obligations under the Contract for so long as the relevant event of Force Majeure continues and to the extent that such Party's performance is prevented, hindered or delayed. The Time for Completion shall be extended in accordance with GCC Clause 40.

37.4 The Party or Parties affected by the event of Force Majeure shall use reasonable efforts to mitigate the effect thereof upon its or their performance of the Contract and to fulfill its or their obligations under the Contract, but without prejudice to either Party's right to terminate the Contract under GCC Sub-Clauses 37.6 and 38.5.

37.5 No delay or nonperformance by either Party hereto caused by the occurrence of any event of Force Majeure shall

- a) constitute a default or breach of the Contract, or
- b) give rise to any claim for damages or additional cost or expense occasioned thereby, subject to GCC Sub-Clauses 32.2, 38.3 and 38.4

If and to the extent that such delay or nonperformance is caused by the occurrence of an event of Force Majeure.

37.6 If the performance of the Contract is substantially prevented, hindered or delayed for a single period of more than sixty (60) days or an aggregate period of more than one hundred and twenty (120) days on account of one or more events of Force Majeure during the currency of the Contract, the Parties will attempt to develop a mutually satisfactory solution, failing which either Party may terminate the Contract by giving a notice to the other, but without prejudice to either Party's right to terminate the Contract under GCC Sub-Clause 38.5.

37.7 In the event of termination pursuant to GCC Sub-Clause 37.6, the rights and obligations of the Procuring Entity and the Contractor shall be as specified in GCC Sub-Clauses 42.1.2 and 42.1.3.

37.8 Notwithstanding GCC Sub-Clause 37.5, Force Majeure shall not apply to any obligation of the Procuring Entity to make payments to the Contractor herein.

38. War Risks

38.1 "War Risks" shall mean any event specified in paragraphs (a) and (b) of GCC Sub-Clause 37.1 and any explosion or impact of any mine, bomb, shell, grenade or other projectile, missile, munitions or explosive of war, occurring or existing in or near the country (or countries) where the Site is located.

38.2 Notwithstanding anything contained in the Contract, the Contractor shall have no liability whatsoever for or with respect to

- a) Destruction of or damage to Facilities, Plant, or any part thereof;
- b) Destruction of or damage to property of the Procuring Entity or any third Party; or
- c) Injury or loss of life

if such destruction, damage, injury or loss of life is caused by any War Risks, and the Procuring Entity shall indemnify and hold the Contractor harmless from and against any and all claims, liabilities, actions, lawsuits, damages, costs, charges or expenses arising in consequence of or in connection with the same.

38.3 If the Facilities or any Plant or Contractor's Equipment or any other property of the Contractor used or intended to be used for the purposes of the Facilities shall sustain destruction or damage by reason of any War Risks, the Procuring Entity shall pay the Contractor for

- a) Any part of the Facilities or the Plant so destroyed or damaged to the extent not already paid for by the Procuring Entity and so far as may be required by the Procuring Entity, and as may be necessary for completion of the Facilities
- b) Replacing or making good any Contractor's Equipment or other property of the Contractor so destroyed or damaged
- c) Replacing or making good any such destruction or damage to the Facilities or the Plant or any part thereof.

If the Procuring Entity does not require the Contractor to replace or make good any such destruction or damage to the Facilities, the Procuring Entity shall either request a change in accordance with GCC Clause 39, excluding the performance of that part of the Facilities thereby destroyed or damaged or, where the loss, destruction or damage affects a substantial part of the Facilities, shall terminate the Contract, pursuant to GCC Sub-Clause 42.1.

If the Procuring Entity requires the Contractor to replace or make good on any such destruction or damage to the Facilities, the Time for Completion shall be extended in accordance with GCC 40.

38.4 Notwithstanding anything contained in the Contract, the Procuring Entity shall pay the Contractor for any increased costs or incidentals to the execution of the Contract that are in any way attributable to, consequent on, resulting from, or in any way connected with any War Risks, provided that the Contractor shall as soon as practicable notify the Procuring Entity in writing of any such increased cost.

38.5 If during the performance of the Contract any War Risks shall occur that financially or otherwise materially affect the execution of the Contract by the Contractor, the Contractor shall use its reasonable efforts to execute the Contract with due and proper consideration given to the safety of its and its Subcontractors' personnel engaged in the work on the Facilities, provided, however, that if the execution of the work on the Facilities becomes impossible or is substantially prevented for a single period of more than sixty (60) days or an aggregate period of more than one hundred and twenty (120) days on account of any War Risks, the Parties will attempt to develop a mutually satisfactory solution, failing which either Party may terminate the Contract by giving a notice to the other.

38.6 In the event of termination pursuant to GCC Sub-Clauses 38.3 or 38.5, the rights and obligations of the Procuring Entity and the Contractor shall be specified in GCC Sub-Clauses 42.1.2 and 42.1.3. A. Change in Contract Elements.

A. Change in Contract Elements

39. Change in the Facilities

39.1 Introducing a Change

39.1.1 Subject to GCC Sub-Clauses 39.2.5 and 39.2.7, the Procuring Entity shall have the right to propose, and subsequently require, that the Project Manager order the Contractor from time to time during the performance of the Contract to make any change, modification, addition or deletion to, in or from the Facilities here in after called "Change", provided that such Change falls within the general scope of the Facilities and does not constitute unrelated work and that it is technically practicable, taking into account both the state of advancement of the Facilities and the technical compatibility of the Change envisaged with the nature of the Facilities as specified in the Contract.

39.1.2 Value Engineering: The Contractor may prepare, at its own cost, a value engineering proposal at any time during the performance of the contract. The value engineering proposal shall,

at a minimum, include the following;

- a) The proposed change (s), and a description of the difference to the existing contract requirements;
- b) a full cost/benefit analysis of the proposed change(s) including a description and estimate of costs (including life cycle costs) the Procuring Entity may incur in implementing the value engineering proposal; and
- c) a description of any effect (s) of the change on performance/ functionality.

The Procuring Entity may accept the value engineering proposal if the proposal demonstrates benefits that:

- a) accelerates the delivery period; or
- b) reduces the Contract Price or the life cycle costs to the Procuring Entity; or
- c) improves the quality, efficiency, safety or sustain ability of the Facilities; or
- d) Yields any other benefits to the Procuring Entity, without compromising the necessary functions of the Facilities.

If the value engineering proposal is approved by the Procuring Entity and results in:

- (a) a reduction of the Contract Price; the amount to be paid to the Contractor shall be the percentage specified in the SCC of the reduction in the Contract Price; or
- (b) an increase in the Contract Price; but results in a reduction in life cycle costs due to any benefit described in (a) to (d) above, the amount to be paid to the Contractor shall be the full increase in the Contract Price.

39.1.3 Notwithstanding GCC Sub-Clauses 39.1.1 and 39.1.2, no change made necessary because of any default of the Contractor in the performance of its obligations under the Contract shall be deemed to be a Change, and such change shall not result in any adjustment of the Contract Price or the Time for Completion.

39.1.4 The procedure on how to proceed with and execute Changes is specified in GCC Sub-Clauses 39.2 and 39.3, and further details and forms are provided in the Procuring Entity's Requirements (Forms and Procedures).

39.2 Changes Originating from Procuring Entity

39.2.1 If the Procuring Entity proposes a Change pursuant to GCC Sub-Clause 39.1.1, it shall send to the Contractor a "Request for Change Proposal," requiring the Contractor to prepare and furnish to the Project Manager as soon as reasonably practicable a "Change Proposal," which shall include the following:

- a) Brief description of the Change
- b) Effect on the Time for Completion
- c) Estimated cost of the Change
- d) Effect on Functional Guarantees (if any)
- e) Effect on the Facilities
- f) Effect on any other provisions of the Contract.

39.2.2 Prior to preparing and submitting the "Change Proposal," the Contractor shall submit to the Project Manager an "Estimate for Change Proposal," which shall be an estimate of the cost of preparing and submitting the Change Proposal.

Upon receipt of the Contractor's Estimate for Change Proposal, the Procuring Entity shall do one of the following:

- Accept the Contractor's estimate with instructions to the Contractor to proceed with the preparation of the Change Proposal
- Advise the Contractor of any part of its Estimate for Change Proposal that is unacceptable and request the Contractor to review its estimate

- Advise the Contractor that the Procuring Entity does not intend to proceed with the Change.

39.2.3 Upon receipt of the Procuring Entity's instruction to proceed under GCC Sub-Clause 39.2.2 (a), the Contractor shall, with proper expedition, proceed with the preparation of the Change Proposal, in accordance with GCC Sub-Clause 39.2.1.

39.2.4 The pricing of any Change shall, as far as practicable, be calculated in accordance with the rates and prices included in the Contract. If such rates and prices are inequitable, the Parties there to shall agree on specific rates for the valuation of the Change.

39.1.5 If before or during the preparation of the Change Proposal it becomes apparent that the aggregate effect of compliance there with and with all other Change Orders that have already become binding upon the Contractor under this GCC Clause 39 would be to increase or decrease the Contract Price as originally set for thin Article 2 (Contract Price) of the Contract Agreement by more than fifteen percent (15%), the Contractor may give a written notice of objection there to prior to furnishing the Change Proposal as aforesaid. If the Procuring Entity accepts the Contractor's objection, the Procuring Entity shall withdraw the proposed Change and shall notify the Contractor in writing thereof.

The Contractor's failure to so object shall neither affect its right to object to any subsequent requested Changes or Change Orders here in, nor affect its right to take in to account, when making such subsequent objection, the percentage increase or decrease in the Contract Price that any Change not objected to by the Contractor represents.

39.1.6 Upon receipt of the Change Proposal, the Procuring Entity and the Contractor shall mutually agree upon all matters therein contained. Within fourteen (14) days after such agreement, the Procuring Entity shall, if it intends to proceed with the Change, issue the Contractor with a Change Order.

If the Procuring Entity is unable to reach a decision within fourteen (14) days, it shall notify the Contractor with details of when the Contractor can expect a decision.

If the Procuring Entity decides not to proceed with the Change for whatever reason, it shall, within the said period of fourteen (14) days, notify the Contractor accordingly. Under such circumstances, the Contractor shall be entitled to reimbursement of all costs reasonably incurred by it in the preparation of the Change Proposal, provided that these do not exceed the amount given by the Contractor in its Estimate for Change Proposal submitted in accordance with GCC Sub-Clause 39.2.2.

39.1.7 If the Procuring Entity and the Contractor cannot reach agreement on the price for the Change, an equitable adjustment to the Time for Completion, or any other matters identified in the Change Proposal, the Procuring Entity may nevertheless instruct the Contractor to proceed with the Change by issue of a "Pending Agreement Change Order."

Upon receipt of a Pending Agreement Change Order, the Contractor shall immediately proceed with effecting the Changes covered by such Order. The Parties shall there after attempt to reach agreement on the outstanding issues under the Change Proposal.

If the Parties cannot reach agreement within sixty (60) days from the date of issue of the Pending Agreement Change Order, then the matter may be referred to the Dispute Board in accordance with the provisions of GCC Sub-Clause 46.1.

39.1.8 Changes Originating from Contractor

39.1.9 If the Contractor proposes a Change pursuant to GCC Sub-Clause 39.1.2, the Contractor shall submit to the Project Manager a written "Application for Change Proposal," giving

reasons for the proposed Change and including the information specified in GCC Sub-Clause 39.1.2.

39.1.10 Upon receipt of the Application for Change Proposal, the Parties shall follow the procedures outlined in GCC Sub-Clauses 39.2.6 and 39.2.7. However, the Contractor shall not be entitled to recover the costs of preparing the Application for Change Proposal.

40. Extension of Time for Completion

40.1 The Time(s) for Completion specified in the SCC pursuant to GCC Sub-Clause 8.2 shall be extended if the Contractor is delayed or impeded in the performance of any of its obligations under the Contract by reason of any of the following:

- a) Any Change in the Facilities as provided in GCC Clause 39
- b) Any occurrence of Force Majeure as provided in GCC Clause 37, unforeseen conditions as provided in GCC Clause 35, or other occurrence of any of the matters specified or referred to in paragraphs (a), (b) and (c) of GCC Sub-Clause 32.2
- c) Any suspension order given by the Procuring Entity under GCC Clause 41 here of or reduction in the rate of progress pursuant to GCC Sub-Clause 41.2 or
 - Any changes in laws and regulations as provided in GCC Clause 36 or
 - Any default or breach of the Contract by the Procuring Entity, Appendix to the Contract Agreement titled, or any activity, actor omission of the Procuring Entity, or the Project Manager, or any other contractors employed by the Procuring Entity, or
 - Any delay on the part of a Subcontractor, provided such delay is due to a cause for which the Contractor himself would have been entitled to an extension of time under this sub-clause, or
 - Delays attributable to the Procuring Entity or caused by customs, or
- h) Any other matter specifically mentioned in the Contract by such period as shall be fair and reasonable in all the circumstances and as shall fairly reflect the delay or impediment sustained by the Contractor.

40.2 Except where otherwise specifically provided in the Contract, the Contractor shall submit to the Project Manager a notice of a claim for an extension of the Time for Completion, together with particulars of the event or circumstance justifying such extension as soon as reasonably practicable after the commencement of such event or circumstance. As soon as reasonably practicable after receipt of such notice and supporting particulars of the claim, the Procuring Entity and the Contractor shall agree upon the period of such extension. In the event that the Contractor does not accept the Procuring Entity's estimate of a fair and reasonable time extension, the Contractor shall be entitled to refer the matter to a Dispute Board, pursuant to GCC Sub-Clause 46.1.

40.3 The Contractor shall at all times use its reasonable efforts to minimize any delay in the performance of its obligations under the Contract.

40.4 In all cases where the Contractor has given a notice of a claim for an extension of time under GCC 40.2, the Contractor shall consult with the Project Manager in order to determine the steps (if any) which can be taken to overcome or minimize the actual or anticipated delay. The Contractor shall there after comply with all reasonable instructions which the Project Manager shall give in order to minimize such delay. If compliance with such instructions shall cause the Contractor to incur extra costs and the Contractor is entitled to an extension of time under GCC 40.1, the amount of such extra costs shall be added to the Contract Price.

41 Suspension

41.1 Procuring Entity may request the Project Manager, by notice to the Contractor, to order the Contractor to suspend performance of any or all of its obligations under the Contract. Such notice shall specify the obligation of which performance is to be suspended, the effective date of the suspension and the reasons therefor. The Contractor shall thereupon suspend performance of such obligation, except those obligations necessary for the care or preservation of the Facilities, until ordered in writing to resume such performance by the Project Manager.

If, by virtue of a suspension order given by the Project Manager, other than by reason of the Contractor's default or breach of the Contract, the Contractor's performance of any of its obligations is suspended for an aggregate period of more than ninety (90) days, then at any time there after and provided that at that time such performance is still suspended, the Contractor may give a notice to the Project Manager requiring that the Procuring Entity shall, within twenty-eight (28) days of receipt of the notice, order the resumption of such performance or request and subsequently order a change in accordance with GCC Clause 39, excluding the performance of the suspended obligations from the Contract.

41.2 If the Procuring Entity fails to do so within such period, the Contractor may, by a further notice to the Project Manager, elect to treat the suspension, where it affects part only of the Facilities, as a deletion of such part in accordance with GCC Clause 39 or, where it affects the whole of the Facilities, as termination of the Contract under GCC Sub-Clause.

41.3 If

a. Procuring Entity has failed to pay the Contractor any sum due under the Contract within the specified period, has failed to approve any invoice or supporting documents without just cause pursuant to the Appendix to the Contract Agreement titled Terms and Procedures of Payment, or commits a substantial breach of the Contract, the Contractor may give a notice to the Procuring Entity that requires payment of such sum, with interest there on as stipulated in GCC Sub-Clause 12.3, requires approval of such invoice or supporting documents, or specifies the breach and requires the Procuring Entity to remedy the same, as the case may be. If the Procuring Entity fails to pay such sum together with such interest, fails to approve such invoice or supporting documents or give its reasons for withholding such approval, or fails to remedy the breach or take steps to remedy the breach within fourteen (14) days after receipt of the Contractor's notice or

b. The Contractor is unable to carry out any of its obligations under the Contract for any reason attributable to the Procuring Entity, including but not limited to the Procuring Entity's failure to provide possession of or access to the Site or other areas in accordance with GCC Sub-Clause 10.2, or failure to obtain any governmental permit necessary for the execution and/or completion of the Facilities, then the Contractor may by fourteen (14) days' notice to the Procuring Entity suspend performance of all or any of its obligations under the Contract, or reduce the rate of progress.

41.3 If the Contractor's performance of its obligations is suspended or the rate of progress is reduced pursuant to this GCC Clause 41, then the Time for Completion shall be extended in accordance with GCC Sub-Clause 40.1, and any and all additional costs or expenses incurred by the Contractor as a result of such suspension or reduction shall be paid by the Procuring Entity to the Contractor in addition to the Contract Price, except in the case of suspension order or reduction in the rate of progress by reason of the Contractor's default or breach of the Contract.

41.4 During the period of suspension, the Contractor shall not remove from the Site any Plant, any part of the Facilities or any Contractor's Equipment, without the prior written consent of the Procuring Entity.

42 Termination

42.1 Termination for Procuring Entity's Convenience

42.1.1 The Procuring Entity may at any time terminate the Contract for any reason by giving the Contractor a notice of termination that refers to this GCC Sub-Clause 42.1.

42.1.2 Upon receipt of the notice of termination under GCC Sub-Clause 42.1.1, the Contractor shall either immediately or upon the date specified in the notice of termination

- a) cease all further work, except for such work as the Procuring Entity may specify in the notice of termination for the sole purpose of protecting that part of the Facilities already executed, or any work required to leave the Site in a clean and safe condition,
- b) Terminate all subcontracts, except those to be assigned to the Procuring Entity pursuant to paragraph (d) (ii) below,
- c) Remove all Contractor's Equipment from the Site, repatriate the Contractor's and its Subcontractors' personnel from the Site, remove from the Site any wreckage, rubbish and debris of any kind, and leave the whole of the Site in a clean and safe condition, and
- d) subject to the payment specified in GCC Sub-Clause 42.1.3,
 - i. Deliver to the Procuring Entity the parts of the Facilities executed by the Contractor up to the date of termination
 - ii. To the extent legally possible, assign to the Procuring Entity all right, title and benefit of the Contractor to the Facilities and to the Plant as of the date of termination, and, as may be required by the Procuring Entity, in any subcontracts concluded between the Contractor and its Subcontractors; and
 - iii. Deliver to the Procuring Entity all non-proprietary drawings, specifications and other documents prepared by the Contractor or its Subcontractors as at the date of termination in connection with the Facilities.

42.1.3 In the event of termination of the Contract under GCC Sub-Clause 42.1.1, the Procuring Entity shall pay to the Contractor the following amounts:

- a The Contract Price, properly attributable to the parts of the Facilities executed by the Contractor as of the date of termination,
- b the costs reasonably incurred by the Contractor in the removal of the Contractor's Equipment from the Site and in the repatriation of the Contractor's and its Subcontractors' personnel, any amounts to be paid by the Contractor to its Subcontractors in connection with the termination of any subcontracts, including any cancellation charges,
- d costs incurred by the Contractor in protecting the Facilities and leaving the Site in a clean and safe condition pursuant to paragraph (a) of GCC Sub-Clause 42.1.2
- e the cost of satisfying all other obligations, commitments and claims that the Contractor may in good faith have under taken with third Parties in connection with the Contract and that are not covered by paragraphs (a) through (d) above.

42.2 Termination by the Contractor

42.2.1 The Procuring Entity, without prejudice to any other rights or remedies it may possess,

may terminate the Contract forth within the following circumstances by giving a notice of termination and its reasons there for to the Contractor, referring to this GCC Sub-Clause 42.2:

a If the Contractor becomes bankrupt or in solvent, has a receiving order issued against it, compounds with its creditors, or, if the Contractor is a corporation, a resolution is passed or order is made for its winding up, other than a voluntary liquidation for the purposes of amalgamation or reconstruction, a receiver is appointed over any part of its undertaking or assets, or if the Contractor takes or suffers any other analogous action in consequence of debt

b if the Contractor assigns or transfers the Contract or any right or interest therein in violation of the provision of GCC Clause 43.

c If the Contractor, in the judgment of the Procuring Entity has engaged in Fraud and Corruption, as defined in paragraph 2.2a. of Appendix B to the GCC, in competing for or in executing the Contract.

42.2.2 If the Contractor

a Has abandoned or repudiated the Contract

b Has without valid reason failed to commence work on the Facilities promptly or has suspended, other than pursuant to GCC Sub-Clause 41.2, the progress of Contract performance for more than twenty-eight (28) days after receiving a written instruction from the Procuring Entity to proceed

c Persistently fails to execute the Contract in accordance with the Contract or the Contractor persistently neglects to carry out its obligations under the Contract without just cause

d Refuses or is unable to provide sufficient materials, services or labor to execute and complete the Facilities in the manner specified in the program furnished under GCC Sub-Clause 18.2 at rates of progress that give reasonable assurance to the Procuring Entity that the Contractor can attain Completion of the Facilities by the Time for Completion as extended, then the Procuring Entity may, without prejudice to any other rights it may possess under the Contract, give a notice to the Contractor stating the nature of the default and requiring the Contractor to remedy the same. If the Contractor fails to remedy or to take steps to remedy the same within fourteen (14) days of its receipt of such notice, then the Procuring Entity may terminate the Contract forth with by giving a notice of termination to the Contractor that refers to this GCC Sub-Clause 42.2.

42.2.3 Upon receipt of the notice of termination under GCC Sub-Clauses 42.2.1 or 42.2.2, the Contractor shall, either immediately or upon such date as is specified in the notice of termination,

a Cease all further work, except for such work as the Procuring Entity may specify in the notice of termination for the sole purpose of protecting that part of the Facilities already executed, or any work required to leave the Site in a clean and safe condition.

b Terminate all subcontracts, except those to be assigned to the Procuring Entity pursuant to paragraph (d) below,

c deliver to the Procuring Entity the parts of the Facilities executed by the Contractor up to the date of termination,

d To the extent legally possible, assign to the Procuring Entity all right, title and benefit of the Contractor to the Facilities and to the Plant as of the date of termination, and, as may be required by the Procuring Entity, in any subcontracts concluded between the Contractor and its Subcontractors,

e Deliver to the Procuring Entity all drawings, specifications and other documents prepared by the Contractor or its Subcontractors as of the date of termination in connection with the Facilities.

42.2.4 The Procuring Entity may enter upon the Site, expel the Contractor, and complete the Facilities itself or by employing any third Party. The Procuring Entity may, to the exclusion of any right of the Contractor over the same, take over and use with the payment of a fair rental rate to the Contractor, with all the maintenance costs to the account of the Procuring Entity and with an indemnification by the Procuring Entity for all liability including damage or injury to persons arising out of the Procuring Entity's use of such equipment, any Contractor's Equipment owned by the Contractor and on the Site in connection with the Facilities for such reasonable period as the Procuring Entity considers expedient for the supply and installation of the Facilities.

42.2.5 Upon completion of the Facilities or at such earlier date as the Procuring Entity thinks appropriate, the Procuring Entity shall give notice to the Contractor that such Contractor's Equipment will be returned to the Contractor at or near the Site and shall return such Contractor's Equipment to the Contractor in accordance with such notice. The Contractor shall thereafter without delay and at its cost remove or arrange removal of the same from the Site.

42.2.6 Subject to GCC Sub-Clause 42.2.6, the Contractor shall be entitled to be paid the Contract Price attributable to the Facilities executed as of the date of termination, the value of any unused or partially used Plant on the Site, and the costs, if any, incurred in protecting the Facilities and in leaving the Site in a clean and safe condition pursuant to paragraph (a) of GCC Sub-Clause 42.2.3. Any sums due the Procuring Entity from the Contractor accruing prior to the date of termination shall be deducted from the amount to be paid to the Contractor under this Contract.

42.2.7 If the Procuring Entity completes the Facilities, the cost of completing the Facilities by the Procuring Entity shall be determined.

42.2.8 If the sum that the Contractor is entitled to be paid, pursuant to GCC Sub-Clause 42.2.5, plus the reasonable costs incurred by the Procuring Entity in completing the Facilities, exceeds the Contract Price, the Contractor shall be liable for such excess.

42.2.9 If such excess is greater than the sums due the Contractor under GCC Sub-Clause 42.2.5, the Contractor shall pay the balance to the Procuring Entity, and if such excess is less than the sums due the Contractor under GCC Sub-Clause 42.2.5, the Procuring Entity shall pay the balance to the Contractor. The Procuring Entity and the Contractor shall agree, in writing, on the computation described above and the manner in which any sums shall be paid.

42.3 Termination by the Contractor

42.3.1 If

a) The Procuring Entity has failed to pay the Contractor any sum due under the Contract within the specified period, has failed to approve any invoice or supporting documents without just cause pursuant to the Appendix to the Contract Agreement titled Terms and Procedures of Payment, or commits a substantial breach of the Contract, the Contractor may give a notice to the Procuring Entity that requires payment of such sum, with interest there on as stipulated in GCC Sub-Clause 12.3, requires approval of such invoice or supporting documents, or specifies the breach and requires the Procuring Entity to remedy the same, as the case may be. If the Procuring Entity fails to pay such sum together with such interest, fails to approve such invoice or supporting documents or give its reasons for withholding such approval, fails to remedy the breach or take steps to remedy the breach within fourteen (14) days after receipt of the Contractor's notice, or

b) The Contractor is unable to carry out any of its obligations under the Contract for any reason attributable to the Procuring Entity, including but not limited to the Procuring Entity's failure to

provide possession of or access to the Site or other areas or failure to obtain any governmental permit necessary for the execution and/or completion of the Facilities, then the Contractor may give a notice to the Procuring Entity thereof, and if the Procuring Entity has failed to pay the outstanding sum, to approve the invoice or supporting documents, to give its reasons for withholding such approval, or to remedy the breach within twenty-eight (28) days of such notice, or if the Contractor is still unable to carry out any of its obligations under the Contract for any reason attributable to the Procuring Entity within twenty-eight (28) days of the said notice, the Contractor may by a further notice to the Procuring Entity referring to this GCC Sub-Clause 42.3.1, forth with terminate the Contract.

42.3.2 The Contractor may terminate the Contract forth with by giving a notice to the Procuring Entity to that effect, referring to this GCC Sub-Clause 42.3.2, if the Procuring Entity becomes bankrupt or insolvent, has a receiving order issued against it, compounds with its creditors, or, being a corporation, if a resolution is passed or order is made for its winding up (other than a voluntary liquidation for the purposes of amalgamation or reconstruction), a receiver is appointed over any part of its undertaking or assets, or if the Procuring Entity takes or suffers any other analogous action in consequence of debt.

42.3.3 If the Contract is terminated under GCC Sub-Clauses 42.3.1 or 42.3.2, then the Contractor shall immediately

- a) Cease all further work, except for such work as may be necessary for the purpose of protecting that part of the Facilities already executed, or any work required to leave the Site in a clean and safe condition
- b) Terminate all subcontracts, except those to be assigned to the Procuring Entity pursuant to paragraph (d) (ii)
- c) Remove all Contractor's Equipment from the Site and repatriate the Contractor's and its Subcontractors' personnel from the Site, and
- d) subject to the payment specified in GCC Sub-Clause 42.3.4,
 - i) Deliver to the Procuring Entity the parts of the Facilities executed by the Contractor up to the date of termination
 - ii) To the extent legally possible, assign to the Procuring Entity all right, title and benefit of the Contractor to the Facilities and to the Plant as of the date of termination, and, as may be required by the Procuring Entity, in any subcontracts concluded between the Contractor and its Subcontractors, and
 - iii) Deliver to the Procuring Entity all drawings, specifications and other documents prepared by the Contractor or its Subcontractors as of the date of termination in connection with the Facilities.

42.3.4 If the Contract is terminated under GCC Sub-Clauses 42.3.1 or 42.3.2, the Procuring Entity shall pay to the Contractor all payments specified in GCC Sub-Clause 42.1.3, and reasonable compensation for all loss, except for loss of profit, or damage sustained by the Contractor arising out of, in connection with or in consequence of such termination.

42.3.5 Termination by the Contractor pursuant to this GCC Sub-Clause 42.3 is without prejudice to any other rights or remedies of the Contractor that may be exercised in lieu of or in addition to rights conferred by GCC Sub-Clause 42.3.

42.4 In this GCC Clause 42, the expression "Facilities executed" shall include all work executed, Installation Services provided, and all Plant acquired, or subject to a legally binding obligation to

purchase, by the Contractor and used or intended to be used for the purpose of the Facilities, up to and including the date of termination.

42.5 In this GCC Clause 42, in calculating any monies due from the Procuring Entity to the Contractor, account shall be taken of any sum previously paid by the Procuring Entity to the Contractor under the Contract, including any advance payment paid pursuant to the Appendix to the Contract Agreement titled Terms and Procedures of Payment.

43. Assignment

43.1 Neither the Procuring Entity nor the Contractor shall, without the express prior written consent of the other Party, which consent shall not be unreasonably withheld, assign to any third Party the Contract or any part thereof, or any right, benefit, obligation or interest therein or thereunder, except that the Contractor shall be entitled to assign either absolutely or by way of charge any monies due and payable to it or that may become due and payable to it under the Contract.

44. Export Restrictions

44.1 Notwithstanding any obligation under the Contract to complete all export formalities, any export restrictions attributable to the Procuring Entity, to Kenya or to the use of the Plant and Installation Services to be supplied which arise from trade regulations from a country supplying those Plant and Installation Services, and which substantially impede the Contractor from meeting its obligations under the Contract, shall release the Contractor from the obligation to provide deliveries or services, always provided, however, that the Contractor can demonstrate to the satisfaction of the Procuring Entity and of the Bank that it has completed all formalities in a timely manner, including applying for permits, authorizations and licenses necessary for the export of the Plant and Installation Services under the terms of the Contract. Termination of the Contract on this basis shall be for the Procuring Entity's convenience pursuant to Sub-Clause 42.1.

B. Claims, Disputes and Arbitration

45. Contractor's Claims

45.1 If the Contractor considers himself to be entitled to any extension of the Time for Completion and/or any additional payment, under any Clause of these Conditions or otherwise in connection with the Contract, the Contractor shall submit a notice to the Project Manager, describing the event or circumstance giving rise to the claim. The notice shall be given as soon as practicable, and not later than 28 days after the Contractor became aware, or should have become aware, of the event or circumstance.

45.2 If the Contractor fails to give notice of a claim within such period of 28 days, the Time for Completion shall not be extended, the Contractor shall not be entitled to additional payment, and the Procuring Entity shall be discharged from all liability in connection with the claim. Otherwise, the following provisions of this Sub-Clause shall apply.

(a) The Contractor shall also submit any other notices which are required by the Contract, and supporting particulars for the claim, all as relevant to such event or circumstance.

(b) The Contractor shall keep such contemporary records as may be necessary to substantiate any claim, either on the Site or at another location acceptable to the Project Manager. Without admitting the Procuring Entity's liability, the Project Manager may, after receiving any notice under this Sub-Clause, monitor the record-keeping and/or instruct the Contractor to keep further contemporary records. The Contractor shall permit the Project Manager to inspect all these records, and shall (if instructed) submit copies to the Project

Manager.

45.3 Within 42 days after the Contractor became aware (or should have become aware) of the event or circumstance giving rise to the claim, or within such other period as may be proposed by the Contractor and approved by the Project Manager, the Contractor shall send to the Project Manager a fully detailed claim which includes full supporting particulars of the basis of the claim and of the extension of time and/or additional payment claimed. If the event or circumstance giving rise to the claim has a continuing effect:

- a) This fully detailed claim shall be considered as interim;
- b) The Contractor shall send further interim claims at monthly intervals, giving the accumulated delay and/or amount claimed, and such further particulars as the Project Manager may reasonably require; and
- c) The Contractor shall send a final claim within 28 days after the end of the effects resulting from the event or circumstance, or within such other period as may be proposed by the Contractor and approved by the Project Manager.

45.4 Within 42 days after receiving a claim or any further particulars supporting a previous claim, or within such other period as may be proposed by the Project Manager and approved by the Contractor, the Project Manager shall respond with approval, or with disapproval and detailed comments. He may also request any necessary further particulars, but shall nevertheless give his response on the principles of the claim within such time.

45.5 Each Payment Certificate shall include such amounts for any claim as have been reasonably substantiated as due under the relevant provision of the Contract. Unless and until the particulars supplied are sufficient to substantiate the whole of the claim, the Contractor shall only be entitled to payment for such part of the claim as he has been able to substantiate.

45.6 The Project Manager shall agree with the Contractor or estimate: (i) the extension (if any) of the Time for Completion (before or after its expiry) in accordance with GCC Clause 40, and/or (ii) the additional payment (if any) to which the Contractor is entitled under the Contract.

45.7 The requirements of this Sub-Clause are in addition to those of any other Sub-Clause which may apply to a claim. If the Contractor fails to comply with this or another Sub-Clause in relation to any claim, any extension of time and/or additional payment shall take account of the extent (if any) to which the failure has prevented or prejudiced proper investigation of the claim, unless the claim is excluded under the second paragraph of this Sub-Clause.

45.8 In the event that the Contractor and the Procuring Entity cannot agree on any matter relating to a claim, either Party may refer the matter to the Dispute Board pursuant to GCC 46 hereof.

46. Claims, Disputes and Arbitration

46.1 Contractor's Claims

46.1.1 If the Contractor considers himself to be entitled to any extension of the Time for Completion and/or any additional payment, under any Clause of these Conditions or otherwise in connection with the Contract, the Contractor shall give notice to the Project Manager, describing the event or circumstance giving rise to the claim. The notice shall be given as soon as practicable, and not later than 28 days after the Contractor became aware, or should have become aware, of the event or circumstance.

46.1.2 If the Contractor fails to give notice of a claim within such period of 28 days, the Time for Completion shall not be extended, the Contractor shall not be entitled to additional payment, and the Procuring Entity shall be discharged from all liability in connection with the claim. Otherwise, the following provisions of this Sub-Clause shall apply. The Contractor shall also submit any other notices which are required by the Contract, and supporting particulars for the claim, all as relevant to such event or circumstance.

46.1.3 The Contractor shall keep such contemporary records as may be necessary to substantiate any claim, either on the Site or at another location acceptable to the Project Manager. Without admitting the Procuring Entity's liability, the Project Manager may, after receiving any notice under this Sub-Clause, monitor the record-keeping and/or instruct the Contractor to keep further contemporary records. The Contractor shall permit the Project Manager to inspect all these records, and shall (if instructed) submit copies to the Project Manager.

46.1.4 Within 42 days after the Contractor became aware (or should have become aware) of the event or circumstance giving rise to the claim, or within such other period as may be proposed by the Contractor and approved by the Project Manager, the Contractor shall send to the Project Manager a fully detailed claim which includes full supporting particulars of the basis of the claim and of the extension of time and/or additional payment claimed. If the event or circumstance giving rise to the claim has a continuing effect:

- a) This fully detailed claim shall be considered as interim;
- b) The Contractor shall send further interim claims at monthly intervals, giving the accumulated delay and/or amount claimed, and such further particulars as the Project Manager may reasonably require; and
- c) The Contractor shall send a final claim within 28 days after the end of the effects resulting from the event or circumstance, or within such other period as may be proposed by the Contractor and approved by the Project Manager.

46.1.5 Within 42 days after receiving a claim or any further particulars supporting a previous claim, or within such other period as may be proposed by the Project Manager and approved by the Contractor, the Project Manager shall respond with approval, or with disapproval and detailed comments. He may also request any necessary further particulars, but shall nevertheless give his response on the principles of the claim within the above defined time period.

46.1.6 Within the above defined period of 42 days, the Project Manager shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine (i) the extension (if any) of the Time for Completion (before or after its expiry) in accordance with Sub-Clause 8.4 [Extension of Time for Completion], and/or (ii) the additional payment (if any) to which the Contractor is entitled under the Contract.

46.1.7 Each Payment Certificate shall include such additional payment for any claim as has been reasonably substantiated as due under the relevant provision of the Contract. Unless and until the particulars supplied are sufficient to substantiate the whole of the claim, the Contractor shall only be entitled to payment for such part of the claim as he has been able to substantiate.

46.1.8 If the Project Manager does not respond within the timeframe defined in this Clause, either Party may consider that the claim is rejected by the Project Manager and any of the Parties may refer the matter to Arbitration in accordance with Sub-Clause 46.4.

46.1.9 The requirements of this Sub-Clause are in addition to those of any other Sub-Clause which may apply to a claim. If the Contractor fails to comply with this or another Sub-Clause in relation to any claim, any extension of time and/or additional payment shall take account of the

extent (if any) to which the failure has prevented or prejudiced proper investigation of the claim, unless the claim is excluded under the second paragraph of this Sub-Clause.

46.2 Issuing a Notice of Dissatisfaction

If a dispute (of any kind whatsoever) arises between the Parties in connection with, or arising out of, the Contract or the execution of the Works, including any dispute as to any certificate, determination, instruction, opinion or valuation of the Project Manager, either Party may refer the dispute in writing to the Project Manager by issuing a Notice of Dissatisfaction and requesting the matter be referred to Arbitration.

46.3 Amicable Settlement

Where a Notice of Dissatisfaction has been given, both Parties shall attempt to settle the dispute amicably before the commencement of arbitration. However, unless both Parties agree otherwise, the Party giving a Notice of Dissatisfaction should move to commence arbitration after the fifty-sixth day from the day on which a Notice of Dissatisfaction was given, even if no attempt at an amicable settlement has been made.

46.4 Arbitration

46.4.1 Any dispute between the Parties arising out of or in connection with the Contract not settled amicably in accordance with Sub-Clause 46.3 above shall be finally settled by arbitration. Arbitration shall be conducted as follows:

- a) If the contract is with foreign contractors, the dispute shall be referred to international arbitration either:
 - i) With proceedings administered by the arbitration institution designated in the Special Conditions of Contract, and conducted under the rules of arbitration of such institution; or, if so specified in the Special Conditions of Contract, or
 - ii) International arbitration in accordance with the arbitration rules of the United Nations Commission on International Trade Law (UNCITRAL), unless specified otherwise in the SCC;
- b) If the Contract is with domestic contractors, arbitration with proceedings conducted in accordance with the Arbitration Laws of Kenya.

46.4.2 The place of arbitration shall be the neutral location specified in the Special Conditions of Contract; and the arbitration shall be conducted in the English Language for all communications.

46.4.3 The arbitrators shall have full power to open up, review and revise any certificate, determination, instruction, opinion or valuation of the Project Manager. Nothing shall disqualify representatives of the Parties and the Project Manager from being called as a witness and giving evidence before the arbitrators on any matter whatsoever relevant to the dispute.

46.4.4 Neither Party shall be limited in the proceedings before the arbitrators to the evidence to obtain its decision, or to the reasons for dissatisfaction given in its Notice of Dissatisfaction.

46.4.5 Arbitration may be commenced prior to or after completion of the Works. The obligations of the Parties and the Project Manager shall not be altered by reason of any arbitration being conducted during the progress of the Works.

46.4.6 The Decision of the Arbitration proceedings will be final and binding on both parties.

SECTION IX - SPECIAL CONDITIONS OF CONTRACT

The following Special Conditions of Contract shall supplement the General Conditions of Contract in Section VIII. Whenever there is a conflict, the provisions herein shall prevail over those in the General Conditions.

Special Conditions of Contract (SCC)

The following Special Conditions (SCC) shall supplement the General Conditions (GCC). Whenever there is a conflict, the provisions here in shall prevail over those in the GCC. The clause number of the SCC is the corresponding clause number of the GCC.

Table 70: Special Conditions

SCC 1.	The procuring Entity: is Kenya Forestry Research Institute The project Manager is Head of ICT Country of Origin is Kenya
SCC 5. Law and Language	SCC 5.1 the contract shall be interpreted in accordance with laws of Kenya The ruling language is English The language of communication is English
SCC 7. Scope of facilities (Spare parts) (GCC clause &)	SCC 7.3 the contractor agrees to supply spare parts for a period of Two (2) years
SCC 8 Time for commencing and Completion	SCC 8.1 the contractor shall commence work on the facilities immediately from the effective date from for determining time for completion as specified in the contract agreement SCC 8.2 The time for completion of the whole of facilities shall be Three (3) from the effective date as specified in the contract
SCC 9. Contractor responsibility	
SCC 11. Contract price	The contract shall be adjusted accordance with the provisions of contract agreement titled
SCC 13 securities	SCC 13.1.1 The bidder shall furnish the institute with a performance security of 10% of the contract price SCC 13.1.2 The performance security shall be inform of a performance bond SCC 13.1.3 The performance date shall not be reduced on the date of operation
SCC 22 Installation	SCC 22.2.5 Normal working hours 8;00am to 5:00pm SCC 22.2.8 Funeral arrangements 7 days
SCC 25 commissioning and Operational assistance	SCC 22.2.2 the guarantee test facility shall be successfully complete within one month from the date of completion
SCC 26 completion time guarantee	SCC 26 applicable rate for liquidated damages is Maximum amount for liquidated damage is SCC 26.3 no bonus will be given for earlier completion of facility or part thereof
SCC 27. Defect Liability	SCC 27.10 The critical components to be covered under defect liability are: Floor, Fire suppression and

	Builder's works for a period of six months.
SCC 30. Limitation of Liability	SCC 30.1 (b)
SCC 39 Value Engineering	SCC 39.1.2 No value engineering
SCC 46.4 (a) (ii) Arbitration	N/A

SECTION X - CONTRACT FORMS

Notification of Award - Form of Acceptance

Contract Agreement

Appendix 1. Terms and Procedures of Payment

Appendix 2. Price Adjustment

Appendix 3. Insurance Requirements

Appendix 4. Time Schedule

Appendix 5. List of Major Items of Plant and Installation Services and List of Approved Subcontractors

Appendix 6. Scope of Works and Supply by the Procuring Entity

Appendix 7. List of Documents for Approval or

Review Appendix 8. Functional Guarantees

Performance Security Form OPTION 1 – Demand Bank

Guarantee Performance Security Form OPTION 2 –

Performance Bond Advance Payment Security- Demand Bank

Guarantee

NOTIFICATION OF INTENTION TO AWARD

[This Notification of Intention to Award shall be sent to each Tenderer that submitted a Tender.]

[Send this Notification to the Tenderer's Authorized Representative named in the Tenderer Information Form]

For the attention of Tenderer's Authorized Representative Name:*[insert Authorized Representative's name]*

Address: *[Insert Authorized Representative's Address]*

Telephone/Fax numbers: *[Insert Authorized Representative's telephone /fax numbers]*

Email Address: *[Insert Authorized Representative's email address]*

[IMPORTANT: insert the date that this Notification is transmitted to Tenderers. The Notification must be sent to all Tenderers simultaneously. This means on the same date and as close to the same time as possible.]

DATE OF TRANSMISSION: This Notification is sent by: *[email/fax]* on *[date]* (local time)

Notification of Intention to Award

Procuring Entity: *[Insert the name of the Procuring Entity]*

Project: *[Insert name of project]*

Contract title: *[Insert the name of the contract]*

ITT No: *[Insert ITT reference number from Procurement Plan]*

This Notification of Intention to Award (Notification) notifies you of our decision to award the above contract. The transmission of this Notification begins the Standstill Period. During the Standstill Period, you may:

- a) Request a debriefing in relation to the evaluation of your Tender, and/or
- b) Submit a Procurement-related Complaint in relation to the decision to award the contract.

1. Table 71: The successful Tenderer

	<i>[Insert name of successful Tenderer]</i>
	<i>[Insert address of the successful Tenderer]</i>
Contract price:	<i>[Insert contract price of the successful Tenderer]</i>

- 2 Other Tenderers *[INSTRUCTIONS: insert names of all Tenderers that submitted a Tender. If the Tender's price was evaluated include the evaluated price as well as the Tender price as read out.]*

Table 72: Other Tenderers

	Tender price	Evaluated Tender Cost
<i>[Insert name]</i>	<i>[Insert tender price]</i>	<i>[Insert evaluated cost]</i>
<i>[Insert name]</i>	<i>[Insert tender price]</i>	<i>[Insert evaluated cost]</i>
<i>[Insert name]</i>	<i>[Insert tender price]</i>	<i>[Insert evaluated cost]</i>
<i>[Insert name]</i>	<i>[Insert tender price]</i>	<i>[Insert evaluated cost]</i>
<i>[Insert name]</i>	<i>[Insert tender price]</i>	<i>[Insert evaluated cost]</i>

3 Reason/s why your Tender was unsuccessful

[INSTRUCTIONS: State the reason/s why this Tenderer's Tender was not successful. Do NOT include:
(a) a point by point comparison with another Tenderer's Tender or
(b) Information that is marked confidential by the Tenderer in its Tender.]

4 How to request a debriefing?

DEADLINE: *The deadline to request a debriefing expires at midnight on [insert date] (local time).*
You may request a debriefing in relation to the results of the evaluation of your Tender. If you decide to request a debriefing, your written request must be made within three (3) Business Days of receipt of this Notification of Intention to Award.
Provide the contract name, reference number, name of the Tenderer, contact details; and address the request for debriefing as follows:
Attention:[insert full name of person, if applicable]
Title/position:[insert title/position]
Agency:[insert name of
Procuring Entity] Email address:
.....[insert email address]
Fax number:[insert fax number] delete if not used
If your request for a debriefing is received within the 3 Business Days deadline, we will provide the debriefing within five (5) Business Days of receipt of your request. If we are unable to provide the debriefing within this period, the Standstill Period shall be extended by five (5) Business Days after the date that the debriefing is provided. If this happens, we will notify you and confirm the date that the extended Standstill Period will end.
The debriefing may be in writing, by phone, video conference call or in person. We shall promptly advise you in writing how the debriefing will take place and confirm the date and time.
If the deadline to request a debriefing has expired, you may still request a debriefing.

In this case, we will provide the debriefing as soon as practicable, as and normally no later than fifteen (15) Business Days from the date of publication of the Contract Award Notice.

5. How to make a complaint?

Period: Procurement-related Complaint challenging the decision to award shall be submitted by midnight, [insert date] (local time).

Provide the contract name, reference number, name of the Tenderer, contact details; and address the Procurement- related Complaint as follows:

Attention:[insert full name of person, if applicable]

Title/position:[insert title/position]

Agency:[insert name of Procuring Entity]

Email address:[insert email address]

Fax number:[insert fax number] delete if not used

At this point in the procurement process, you may submit a Procurement-related Complaint challenging the decision to award the contract. You do not need to have requested, or received, a debriefing before making this complaint. Your complaint must be submitted within the Standstill Period and received by us before the Standstill Period ends.

Further information:

Further information: For more information refer to the Public Procurement and Disposals Act 2015 and its Regulations available from the Website: info@ppra.go.ke or complaints@ppra.go.ke.

In summary, there are four essential requirements:

- 1. You must be an 'interested party'. In this case, that means a Tenderer who submitted a Tender in this*

Tendering process, and is the recipient of a Notification of Intention to Award.

- 2. The complaint can only challenge the decision to award the contract.*
- 3. You must submit the complaint within the period stated above.*
- 4. You must include, in your complaint, all of the information required by the Procurement Regulations (as described in Annex III).*

6. Standstill Period

DEADLINE: *The Standstill Period is due to end at midnight on [insert date] (local time). The Standstill Period lasts ten (10) Business Days after the date of transmission of this Notification of Intention to Award.*

The Standstill Period may be extended as stated in Section 4 above.

If you have any questions regarding this Notification please do not hesitate to contact us. On behalf of the Procuring Entity:

Signature: _____

Name: _____

Title/position: _____

Telephone: _____

Email: _____

NOTIFICATION OF AWARD - FORM OF ACCEPTANCE

To: _____

This is to notify you that your Tender dated _____ for execution of the _____ for the Contract Price in the aggregate of _____, as corrected and modified in accordance with the Instructions to Tenderers is hereby accepted by our Agency.

You are requested to furnish the Performance Security within 28 days in accordance with the Conditions of Contract, using for that purpose one of the Performance Security Forms included in Section X, - Contract Forms, of the Tendering document.

Authorized Signature:

Name and Title of Signatory:

Name of Agency:

Attachment: Contract Agreement:

CONTRACT AGREEMENT

THIS AGREEMENT is made the _____ day of _____, _____,
BETWEEN

- 1)a corporation incorporated under the laws of _____ and having its principal Place of business at (Hereinafter called “the Procuring Entity”), and (2) _____, a corporation incorporated under the laws of _____ and having its principal place of business at _____ (herein after called “the Contractor”).

WHEREAS the Procuring Entity desires to engage the Contractor to design, manufacture, test, deliver, install, complete and commission certain Facilities, viz. _____ (“the Facilities”), and the Contractor has agreed to such engagement upon and subject to the terms and conditions herein after appearing.

NOW IT IS HEREBY AGREED as follows:

Article 1. Contract Documents

1.1 Contract Documents (Reference GCC Clause2)

The following documents shall constitute the Contract between the Procuring Entity and the Contractor, and each shall be read and construed as an integral part of the Contract:

- a) This Contract Agreement and the Appendices hereto
- b) Form of Tender and Price Schedules submitted by the Contractor
- c) Special Conditions of Contract
- d) General Conditions of Contract
- e) Specification
- f) Drawings
- g) Other completed Tendering forms submitted with the Tender
- h) Any other documents forming part of the Procuring Entity's Requirements
- i) Any other documents shall be added here

1.2 Order of Precedence (Reference GCC Clause2)

In the event of any ambiguity or conflict between the Contract Documents listed above, the order of precedence shall be the order in which the Contract Documents are listed in Article 1.1 (Contract Documents) above.

1.3 Definitions (Reference GCC Clause1)

Capitalized words and phrases used here in shall have the same meanings as ascribed to them in the General Conditions.

Article 2. Contract Price and Terms of Payment

2.1 Contract Price (Reference GCC Clause11)

The Procuring Entity hereby agrees to pay to the Contractor the Contract Price in consideration of the performance by the Contractor of its obligations hereunder. The Contract Price shall be the aggregate of:

.....as specified in Price Schedule No 5 (Grand Summary),

And _____, _____, or such other sums as may be determined in accordance with the terms and conditions of the Contract.

2.2 Terms of Payment (Reference GCC Clause 12)

The terms and procedures of payment according to which the Procuring Entity will reimburse the Contractor are given in the Appendix (Terms and Procedures of Payment) hereto.

The Procuring Entity may instruct its bank to issue an irrevocable confirmed documentary credit made available to the Contractor in a bank in the country of the Contractor. The credit shall be for an amount of

_____ ; And shall be subject to the Uniform Customs and Practice for Documentary Credits 2007 Revision, ICC Publication No.600.

In the event that the amount payable under Schedule No.1 is adjusted in accordance with GCC 11.2 or with any of the other terms of the Contract, the Procuring Entity shall arrange for the documentary credit to be amended accordingly.

Article 3. Effective Date

3.1 Effective Date (Reference GCC Clause1)

The Effective Date from which the Time for Completion of the Facilities shall be counted is the date when all of the following conditions have been fulfilled:

- a) This Contract Agreement has been duly executed for and on behalf of the Procuring Entity and the Contractor;
- b) The Contractor has submitted to the Procuring Entity the Performance Security and the advance payment guarantee;
- c) The Procuring Entity has paid the Contractor the advance payment
- d) The Contractor has been advised that the documentary credit referred to in Article 2.2 above has been issued in its favor.

Each party shall use its best efforts to fulfill the above conditions for which it is responsible as soon as practicable.

- 3.2 If the conditions listed under 3.1 are not fulfilled within two (2) months from the date of this Contract notification because of reasons not attributable to the Contractor, the Parties shall discuss and agree on an equitable adjustment to the Contract Price and the Time for Completion and/or other relevant conditions of the Contract.

Article 4. Communications

4.1 The address of the Procuring Entity for notice purposes, pursuant to GCC 4.1is:_____.

4.2 The address of the Contractor for notice purposes, pursuant to GCC 4.1is:_____.

Article 5. Appendices

5.1The Appendices listed in the attached List of Appendices shall be deemed to form an integral part of this Contract Agreement.

5.2 Reference in the Contract to any Appendix shall mean the Appendices attached here to, and the Contract shall be read and construed accordingly.

IN WITNESS WHEREOF the Procuring Entity and the Contractor have caused this Agreement to be duly executed by their duly authorized representatives the day and year first above written.

Signed by, for and on behalf of the Procuring Entity

..... *[Signature]*

..... *[Title]*

In the presence of

Signed by, for and on behalf of the Contractor

..... *[Signature]*

..... *[Title]*

in the presence of

APPENDIX 1: TERMS AND PROCEDURES OF PAYMENT

In accordance with the provisions of GCC Clause12 (Terms of Payment), the Procuring Entity shall pay the Contractor in the following manner and at the following times, on the basis of the Price Break down given in the section on Price Schedules. Payments will be made in the currencies quoted by the Tenderer unless otherwise agreed between the Parties. Applications for payment in respect of part deliveries may be made by the Contractor as work proceeds.

TERMS OF PAYMENT

Schedule No. 1. Plant and Equipment Supplied from Abroad

In respect of plant and equipment supplied from abroad, the following payments shall be made:

Ten percent (10%) of the total CIP amount as an advance payment against receipt of invoice and an irrevocable advance payment security for the equivalent amount made out in favor of the Procuring Entity. The advance payment security may be reduced in proportion to the value of the plant and equipment delivered to the site, as evidenced by shipping and delivery documents.

Eighty percent (80%) of the total or pro rata CIP amount upon Incoterm "CIP", upon delivery to the carrier within forty- five (45) days after receipt of documents.

Five percent (5%) of the total or pro rata CIP amount upon issue of the Completion Certificate, within forty-five (45) days after receipt of invoice.

Five percent (5%) of the total or pro rata CIP amount upon issue of the Operational Acceptance Certificate, within forty- five (45) days after receipt of invoice.

Schedule No. 2. Plant and Equipment Supplied from within Kenya

In respect of plant and equipment supplied from Kenya, the following payments shall be made:

Ten percent (10%) of the total EXW amount as an advance payment against receipt of invoice, and an irrevocable advance payment security for the equivalent amount made out in favor of the Procuring Entity. The advance payment security may be reduced in proportion to the value of the plant and equipment delivered to the site, as evidenced by shipping and delivery documents.

Eighty percent (80%) of the total or pro rata EXW amount upon Incoterm "Ex-Works," upon delivery to the carrier within forty-five (45) days after receipt of invoice and documents.

Five percent (5%) of the total or pro rata EXW amount upon issue of the Completion Certificate, within forty-five (45) days after receipt of invoice.

Five percent (5%) of the total or pro rata EXW amount upon issue of the Operational Acceptance Certificate, within forty-five (45) days after receipt of invoice.

Schedule No. 3. Design Services

In respect of design services for both the foreign currency and the local currency portions, the following payments shall be made:

Ten percent (10%) of the total design services amount as an advance payment against receipt of invoice, and an irrevocable advance payment security for the equivalent amount made out in favor of the Procuring Entity.

Ninety percent (90%) of the total or pro rata design services amount upon acceptance of design in accordance with GCC Clause 20 by the Project Manager within forty-five (45) days after receipt of invoice.

Schedule No. 4. Installation Services

In respect of installation services for both the foreign and local currency portions, the following payments shall be made:

Ten percent (10%) of the total installation services amount as an advance payment against receipt of invoice, and an irrevocable advance payment security for the equivalent amount made out in favor of the Procuring Entity. The advance payment security may be reduced in proportion to the value of work performed by the Contractor as evidenced by the invoices for installation services.

Eighty percent (80%) of the measured value of work performed by the Contractor, as identified in the said Program of Performance, during the preceding month, as evidenced by the Procuring Entity's authorization of the Contractor's application, will be made monthly within forty-five (45) days after receipt of invoice.

Five percent (5%) of the total or pro rata value of installation services performed by the Contractor as evidenced by the Procuring Entity's authorization of the Contractor's monthly applications, upon issue of the Completion Certificate, within forty-five (45) days after receipt of invoice.

Five percent (5%) of the total or pro rata value of installation services performed by the Contractor as evidenced by the Procuring Entity's authorization of the Contractor's monthly applications, upon issue of the Operational Acceptance Certificate, within forty-five (45) days after receipt of invoice.

In the event that the Procuring Entity fails to make any payment on its respective due date, the Procuring Entity shall pay to the Contractor interest on the amount of such delayed payment at the rate of _____
_____] percent (%) per month for period of delay until payment has been made in full.

PAYMENT PROCEDURES

The procedures to be followed in applying for certification and making payments shall be as follows: _____

APPENDIX 2. PRICE ADJUSTMENT

Where the Contract Period (excluding the Defects Liability Period) exceeds eighteen (18) months, it is normal procedure that prices payable to the Contractor shall be subject to adjustment during the performance of the Contract to reflect changes occurring in the cost of labor and material components. In such cases the Tendering document shall include in this Appendix 2 a formula of the following general type, pursuant to GCC Sub-Clause 11.2.

Where Contracts are of a shorter duration than eighteen (18) months or in cases where there is to be no Price Adjustment, the following provision shall not be included. Instead, it shall be indicated under this Appendix 2 that the prices are to remain firm and fixed for the duration of the Contract.

Sample Price Adjustment Formula

If in accordance with GCC 11.2, prices shall be adjustable, the following method shall be used to calculate the price adjustment:

Prices payable to the Contractor, in accordance with the Contract, shall be subject to adjustment during performance of the Contract to reflect changes in the cost of labor and material components, in accordance with the following formula:

$$P_1 = P_0 \left(a + b \frac{L_1}{L_0} + c \frac{M_1}{M_0} \right)$$

$$L_0 M_0$$

IN which: P_1 = adjustment amount payable to the Contractor

P_0 = Contract price (base price)

a = percentage of fixed element in Contract price (a = %)

b = percentage of labor component in Contract price (b = %)

c = percentage of material and equipment component in Contract price (c = %)

L_0 , L_1 , M_0 , M_1 = labor indices applicable to the appropriate industry in the country of origin on the base date and the date for adjustment, respectively.

= material and equipment indices in the country of origin on the base date and the date for adjustment, respectively.

N.B. $a+b+c= 100\%$.

Conditions Applicable to Price Adjustment

The Tenderer shall indicate the source of labor and materials indices, source of exchange rates and the base date indices in its Tender.

Item Source of Indices Used Base Date Indices

The base date shall be the date twenty-eight (28) days prior to the Tender closing date.

The date of adjustment shall be the mid-point of the period of manufacture or installation of component or Plant.

The following conditions shall apply:

- a) No price increase will be allowed beyond the original delivery date unless covered by an extension of time awarded by the Procuring Entity under the terms of the Contract. No price increase will be allowed for periods of delay for which the Contractor is responsible. The Procuring Entity will, however, be entitled to any price decrease occurring during such periods of delay.
- b) If the currency in which the Contract price, P_0 , is expressed is different from the currency of the country of origin of the labor and/or materials indices, a correction factor will be applied to avoid incorrect adjustments of the Contract price. The correction factor shall be: Z_0/Z_1 , where,
 Z_0 = the number of units of currency of the origin of the indices which equal to one unit of the currency of the Contract Price P_0 on the Base date, and
 Z_1 = the number of units of currency of the origin of the indices which equal to one unit of the currency of the Contract Price P_0 on the Date of Adjustment.
- c) No price adjustment shall be payable on the portion of the Contract price paid to the Contractor as an advance payment.

APPENDIX 3. INSURANCE REQUIREMENTS

Insurances to be Taken Out by the Contractor

In accordance with the provisions of GCC Clause 34, the Contractor shall at its expense take out and maintain in effect, or cause to be taken out and maintained in effect, during the performance of the Contract, the insurances set forth below in the sums and with the deductibles and other conditions specified. The identity of the insurers and the form of the policies shall be subject to the approval of the Procuring Entity, such approval not to be unreasonably withheld.

a) Cargo Insurance

Covering loss or damage occurring, while in transit from the suppliers or manufacturer's works or stores until arrival at the Site, to the Facilities (including spare parts therefor) and to the construction equipment to be provided by the Contractor or its Subcontractors.

Amount Deductible Limits Parties insured from to

b) Installation All Risks Insurance

Covering physical loss or damage to the Facilities at the Site, occurring prior to completion of the Facilities, with an extended maintenance coverage for the Contractor's liability in respect of any loss or damage occurring during the defect liability period while the Contractor is on the Site for the purpose of performing its obligations during the defect liability period.

Amount Deductible Limits Parties insured from to

c) Third Party Liability Insurance

Covering bodily injury or death suffered by third parties (including the Procuring Entity's personnel) and loss of or damage to property (including the Procuring Entity's property and any parts of the Facilities that have been accepted by the Procuring Entity) occurring in connection with the supply and installation of the Facilities.

Amount Deductible Limits Parties insured from To

d) Automobile Liability Insurance

Covering use of all vehicles used by the Contractor or its Subcontractors (whether or not owned by them) in connection with the supply and installation of the Facilities. Comprehensive insurance in accordance with statutory requirements.

e) Workers' Compensation

In accordance with the statutory requirements applicable in any country where the Facilities or any part thereof is executed.

f) Procuring Entity's Liability

In accordance with the statutory requirements applicable in any country where the Facilities or any part thereof is executed.

g) Other Insurances

The Contractor is also required to take out and maintain at its own cost the following insurances:

Details:

Amount	Deductible Limits	Parties insured	from	To
--------	-------------------	-----------------	------	----

The Procuring Entity shall be named as co-insured under all insurance policies taken out by the Contractor pursuant to GCC Sub-Clause 34.1, except for the Third-Party Liability, Workers' Compensation and Procuring Entity's Liability Insurances, and the Contractor's Subcontractors shall be named as co-insureds under all insurance policies taken out by the Contractor pursuant to GCC Sub-Clause 34.1, except for the Cargo, Workers' Compensation and Procuring Entity's Liability Insurances. All insurer's rights of subrogation against such co-insureds for losses or claims arising out of the performance of the Contract shall be waived under such policies.

Insurances to Be Taken Out by The Procuring Entity

The Procuring Entity shall at its expense take out and maintain in effect during the performance of the Contract the following insurances.

Details:

Amount	Deductible Limits	Parties insured	from	To
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APPENDIX 4. TIME SCHEDULE

APPENDIX 5. LIST OF MAJOR ITEMS OF PLANT AND INSTALLATION SERVICES AND LIST OF APPROVED SUBCONTRACTORS

A list of major items of Plant and Installation Services is provided below.

The following Subcontractors and/or manufacturers are approved for carrying out the items of the Facilities indicated below. Where more than one Subcontractor is listed, the Contractor is free to choose between them, but it must notify the Procuring Entity of its choice in good time prior to appointing any selected Subcontractor. In accordance with GCC Sub-Clause 19.1, the Contractor is free to submit proposals for Subcontractors for additional items from time to time. No Subcontracts shall be placed with any such Subcontractors for additional items until the Subcontractors have been approved in writing by the Procuring Entity and their names have been added to this list of Approved Subcontractors.

Table 72:

Major Items of Plant and Installation Services	Approved Subcontractors/Manufacturers	Nationality

APPENDIX 6. SCOPE OF WORKS AND SUPPLY BY THE PROCURING ENTITY

The following personnel, facilities, works and supplies will be provided/supplied by the Procuring Entity, and the provisions of GCC Clauses 10, 21 and 24 shall apply as appropriate.

All personnel, facilities, works and supplies will be provided by the Procuring Entity in good time so as not to delay the performance of the Contractor, in accordance with the approved Time Schedule and Program of Performance pursuant to GCC Sub-Clause 18.2.

Unless otherwise indicated, all personnel, facilities, works and supplies will be provided free of charge to the Contractor.

Personnel Charge to Contractor (if any)

Facilities Charge to Contractor (if any)

Works Charge to Contractor (if any)

Supplies Charge to Contractor (if any)

APPENDIX 7. LIST OF DOCUMENTS FOR APPROVAL OR REVIEW

Pursuant to GCC Sub-Clause 20.3.1, the Contractor shall prepare, or cause its Subcontractor to prepare, and present to the Project Manager in accordance with the requirements of GCC Sub-Clause 18.2 (Program of Performance), the following documents for

a) Approval

- 1.
- 2.
- 3.

b) Review

- 1.
- 2.
- 3.

APPENDIX 8. FUNCTIONAL GUARANTEES

1. General

This Appendix sets out

- a) The functional guarantees referred to in GCC Clause 28 (Functional Guarantees)
- b) The pre-conditions to the validity of the functional guarantees, either in production and/or consumption, set forth below
- c) The minimum level of the functional guarantees
- d) The formula for calculation of liquidated damages for failure to attain the functional guarantees.

2. Preconditions

The Contractor gives the functional guarantees (specified herein) for the facilities, subject to the following preconditions being fully satisfied:

3. Functional Guarantees

Subject to compliance with the foregoing preconditions, the Contractor guarantees as follows:

3.1 Production Capacity

and/or

3.2 Raw Materials and Utilities Consumption

4. Failure in Guarantees and Liquidated Damages

4.1 Failure to Attain Guaranteed Production Capacity

If the production capacity of the facilities attained in the guarantee test, pursuant to GCC Sub-Clause 25.2, is less than the guaranteed figure specified in para. 3.1 above, but the actual production capacity attained in the guarantee test is not less than the minimum level specified in para. 4.3 below, and the Contractor elects to pay liquidated damages to the Procuring Entity in lieu of making changes, modifications and/or additions to the Facilities, pursuant to GCC Sub-Clause 28.3, then the Contractor shall pay liquidated damages at the rate of..... for every complete one percent (1%) of the deficiency in the production capacity of the Facilities, or at a proportionately reduced rate for any deficiency, or part thereof, of less than a complete one percent (1%).

4.2 Raw Materials and Utilities Consumption in Excess of Guaranteed Level _____

If the actual measured figure of specified raw materials and utilities consumed per unit (or their average total cost of consumption) exceeds the guaranteed figure specified in para.3.2 above (or their specified average total cost of consumption), but the actual consumption attained in the guarantee test, pursuant to GCC Sub-Clause 25.2, is not more than the maximum level specified in para. 4.3 below, and the Contractor elects to pay liquidated damages to the Procuring Entity in lieu of making changes, modifications and/or additions to the Facilities pursuant to GCC Sub-Clause 28.3, then the Contractor shall pay liquidated damages at the rate of [amount in the contract

currency] for every complete one percent (1%) of the excess consumption of the Facilities, or part thereof, of less than a complete one percent (1%).

4.3 Minimum Levels

Notwithstanding the provisions of this paragraph, if as a result of the guarantee test(s), the following minimum levels of performance guarantees (and consumption guarantees) are not attained by the Contractor, the Contractor shall at its own cost make good any deficiencies until the Facilities reach any of such minimum performance levels, pursuant to GCC Sub-Clause 28.2:

- a) Production capacity of the Facilities attained in the guarantee test: ninety-five percent (95%) of the guaranteed production capacity (the values offered by the Contractor in its Tender for functional guarantees represents 100%).

and/or

- b) Average total cost of consumption of all the raw materials and utilities of the Facilities: one hundred and five percent (105%) of the guaranteed figures (the figures offered by the Contractor in its Tender for functional guarantees represents 100%).

4.4 Limitation of Liability

Subject to para.4.3 above, the Contractor's aggregate liability to pay liquidated damages for failure to attain the functional guarantees shall not exceed _____percent (_%) of the Contract price.

PERFORMANCE SECURITY FORM

OPTION 1 – Demand Bank Guarantee

[Guarantor Form head or SWIFT identifier code]

Beneficiary: _____ *[insert name and Address of Procuring Entity]*

Date: _____ *[Insert date of issue]*

PERFORMANCE GUARANTEE No.: _____ *[Insert guarantee reference number]*

Guarantor: _____ *[Insert name and address of place of issue, unless indicated in the Form head]*

We have been informed that _____ (herein after called “the Applicant”) has entered into Contract No. _____ dated _____ with the Beneficiary, for the execution of _____ (herein after called “the Contract”).

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Applicant, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of ____ (_____) ¹, such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation (s) under the Contract, without the Beneficiary needing to prove or to show grounds for your demand or the sum specified there in.

This guarantee shall be reduced by half upon our receipt of:

- a) A copy of the Operational Acceptance Certificate; or
- b) a registered Form from the Applicant (i) attaching a copy of its notice requesting issuance of the Operational Acceptance Certificate and (ii) stating that the Project Manager has failed to issue such Certificate within the time required or provide in writing justifiable reasons why such Certificate has not been issued, so that Operational Acceptance is deemed to have occurred.

This guarantee shall expire no later than the earlier of: ²

- a) twelve months after our receipt of either (a) or (b) above; or
- b) eighteen months after our receipt of:
 - i) a copy of the Completion Certificate; or
 - ii) a registered Form from the Applicant, attaching a copy of the notice to the Project Manager that the Facilities are ready for commissioning, and stating that fourteen days have elapsed from receipt of such notice (or seven days have elapsed if the notice was a repeated notice) and the Project Manager has failed to issue a Completion Certificate or in form the Applicant in writing of any defects or deficiencies; or
 - iii) a registered Form from the Applicant stating that no Completion Certificate has been issued but the Procuring Entity is making use of the Facilities; or
- c) the ____ day of ____, 2____. ³

Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

¹*The Guarantor shall insert an amount representing the percentage of the Contract Price specified in the Contract and denominated either in the currency*

(ies) of the

Contract or a freely convertible currency acceptable to the Procuring Entity.

²*This text shall be revised as and where necessary to take into account (i) partial acceptance of the Facilities in accordance with Sub-Clause 25.4 of the GCC; and*

(ii) Extension of the Performance Security when the Contractor is liable for an extended warranty obligation pursuant to Sub-Clause 27.10 of the GCC (although in this latter case the Procuring Entity might want to consider an extended warranty security in lieu of the extension of the Performance Security).

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No.758, except that the supporting statement under Article15 (a) is hereby excluded.

[signature(s)]

Note: *All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.*

³*Insert the date twenty-eight days after the expected expiration date of the Defect Liability Period. The Procuring Entity should note that in the event of an extension of the time for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Procuring Entity might consider adding the following text to the form, at the end of the pen ultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months] [one year], in response to the Procuring Entity's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."*

PERFORMANCE SECURITY OPTION 2 – (Performance Bond)

[Note: Procuring Entities are advised to use Performance Security–Unconditional Demand Bank Guarantee instead of Performance Bond due to difficulties involved in calling Bond holder to action]

[Guarantor Form head or SWIFT identifier code]

Beneficiary: _____ *[insert name and Address of Procuring Entity]*

Date: _____ *[Insert date of issue]*

PERFORMANCE BOND No.: _____

Guarantor: _____ *[Insert name and address of place of issue, unless indicated in the Form head]*

1. By this Bond _____ as Principal (herein after called “the Contractor”) and _____] as Surety (herein after called “the Surety”), are held and firmly bound unto _____] as Obligated (herein after called “the Procuring Entity”) in the amount of __ for the payment of which sum well and truly to be made in the types and proportions of currencies in which the Contract Price is payable, the Contractor and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.
2. WHEREAS the Contractor has entered in to a written Agreement with the Procuring Entity dated the day of, 20, for _____ in accordance with the documents, plans, specifications, and amendments there to, which to the extent herein provided for, are by reference m a depart here of and are herein after referred to as the Contract.
3. NOW, THEREFORE, the Condition of this Obligation is such that, if the Contractor shall promptly and faithfully perform the said Contract (including any amendments there to), then this obligation shall be null and void; otherwise, it shall remain in full force and effect. Whenever the Contractor shall be, and declared by the Procuring Entity to be, in default under the Contract, the Procuring Entity having performed the Procuring Entity's obligations there under, the Surety may promptly remedy the default, or shall promptly:
 - 1) Complete the Contract in accordance with its terms and conditions; or
 - 2) Obtain a tender or tenders from qualified tenderers for submission to the Procuring Entity for completing the Contract in accordance with its terms and conditions, and upon determination by the Procuring Entity and the Surety of the lowest responsive Tenderers, arrange for a Contract between such Tenderer, and Procuring Entity and make available as work progresses (even though there should be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the Balance of the Contract Price; but not exceeding, including other costs and damages for which the Surety may be liable here under, the amount set for thin the first paragraph hereof. The term “Balance of the Contract Price,” as used in this paragraph, shall mean the total amount payable by Procuring Entity to Contractor under the Contract, less the amount properly paid by Procuring Entity to Contractor; or
 - 3) Pay the Procuring Entity the amount required by Procuring Entity to complete the Contract in accordance with its terms and conditions up to a total not exceeding the amount of this Bond.

4. The Surety shall not be liable for a greater sum than the specified penalty of this Bond.
5. Any suit under this Bond must be instituted before the expiration of one year from the date of the issuing of the Taking-Over Certificate. No right of action shall accrue on this Bond to or for the use of any person or corporation other than the Procuring Entity named here in or the heirs, executors, administrators, successors, and assigns of the Procuring Entity.
6. In testimony whereof, the Contractor has hereunto set his hand and affixed his seal, and the Surety has caused these presents to be sealed with his corporate seal duly attested by the signature of his legal representative, this day_of _____20____.

SIGNED ON _____on behalf of

By _____in the capacity

of in the presence of

SIGNED ON _____on behalf of

By _____in the capacity

of in the presence of

ADVANCE PAYMENT SECURITY - Demand Bank Guarantee

[Guarantor Form head or SWIFT identifier code]

Beneficiary: _____ *[Name and Address of Procuring Entity]*

Date: _____ *[Insert date of issue]*

Advance Payment Guarantee No.: _____ *[Insert guarantee reference number]*

Guarantor: _____ *[Insert name and address of place of issue, unless indicated in the Form head]*

We have been informed that _____ (herein after called "the Applicant") has entered into Contract No. _____ dated _____ with the Beneficiary, for the execution of, _____ (herein after called "the Contract").

Furthermore, we understand that, according to the Conditions of the Contract, an advance payment in the sum _____ (_____) is to be made against an advance payment guarantee.

At the request of the Applicant, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of ()⁴ upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating either that the applicant:

- a) Has used the advance payment for purposes other than the costs of mobilization in respect of the Facilities; or
- b) Has failed to repay the advance payment in accordance with the Contract conditions, specifying the amount which the Applicant has failed to repay.

A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the advance payment referred to above has been credited to the Applicant on its account number _____ at _____.

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Applicant as indicated in copies of interim statements or payment certificates which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of documentation indicating full repayment by the Applicant of the amount of the advance payment, or on the ___ day of _____, _____⁵, whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15 (a) is hereby excluded.

[signature(s)]

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

⁴The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency(ies) of the advance payment as specified in the Contract, or in a freely convertible currency acceptable to the Procuring Entity.

⁵Insert the expected expiration date of the Time for Completion. The Procuring Entity should note that in the event of an extension of the time for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Procuring Entity might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."