**INVITATION TO PREQUALIFY**

**ItP/001/2016**

**For the**

**Construction of the new heating facility/system for the Cantonal Hospital in Bihac, Bosnia and Herzegovina**

**September, 2016**

Date: 30/09/2016

**ItP/001/16**

**Country: BIH**

The United Nations Development Programme (UNDP) in Bosnia and Herzegovina would like to invite registered companies to submit their interest for pre-qualification and possible inclusion in the process of CONSTRUCTION OF THE NEW HEATING FACILITY/SYSTEM FOR THE CANTONAL HOSPITAL IN BIHAC, BOSNIA AND HERZEGOVINA, implemented within the project “Energy Efficiency Project at the Cantonal hospital in Bihac, Bosnia and Herzegovina”.

Registered and interested companies are required to provide the following details:

* Legal status and profile
* Mandate, policies and governance
* Technical capacity
* Managerial capacity
* Administrative capacity
* Financial capacity
* Documents form the eligibility criteria requirements

**Prequalification application process**

All organizations that wish to participate in the process are requested to submit all the required documentation latest by **17th October 2016 (Monday) 12:00 PM CET** at the following address:

United Nations Development Programme (UNDP BiH)

GS Unit

Ref. ItP/001/014

Zmaja od Bosne bb,

71000 Sarajevo

Tel: +387 33 293 400/401

Fax: +387 33 552 330

e-mail: registry.ba@undp.org

The information provided will be used to access your suitability to qualify for above mentioned services. **Please note that only pre-qualified organizations will be contacted.**

**Section I: Instruction to Applicants (ITA)**

1. **Background**

UNDP has worked actively in supporting the rural and regional development sector in Bosnia and Herzegovina through, restoration and rehabilitation works of public buildings.

Within the funds made available by Czech Development Agency in BiH and the Government of Una-Sana Canton, UNDP is planning to construct the new heating facility/system at the Cantonal hospital “Dr. Irfan Ljubijankic” in Bihac, Bosnia and Herzegovina. The overall project will be implemented by UNDP, as the Executing Entity, in close cooperation with counterparts and donors.

By means of this Pre-Qualification Request (hereinafter: PQR) UNDP aims at identifying potential highly qualified and experienced building contractors to implement the detail design plans which have been developed by consulting firms. The contractor shall provide all necessary technical and professional works, skills and advices required to assist UNDP in successfully implementing the civil, electrical and mechanical (HVAC) installation and finishing works and having a complete, functional, operational and environmentally compliant heating facility/system at the Cantonal Hospital in Bihac.

Implementation of works is planned in two phases:

Phase 1: December 2016 – April 2017

Construction of the building

Boiler room works and installations

Phase 2: May 2017 – September 2017

Construction of external heating pipelines

Works at the heating substations

Connections to the boiler room

Testing and commissioning of the whole system

**NOTE:**

Technical drawings are available at:  <http://documents.undp.ba/procurement/BIH-ITP-001-16-Drawings.zip>

This PQR is open to all eligible building contractors singly or in a joint venture or in consortium (hereinafter: Applicant) interested to work on civil, mechanical, electrical and other works on the heating facility/system at the Cantonal Hospital in Bihac.

This PQR is for the sole purpose of establishing a list of highly qualified contractors who are technically, financially and administratively capable of providing excellent construction projects results.

The pre-qualified Applicants will be invited to submit bids for an Invitation to Bid, (hereinafter: the ITB) for the civil, mechanical, electrical and other works, where technical and financial evaluation will be carried out according to UNDP rules and regulations.

ITBs will only be issued to the pre-qualified Applicants. After having received and evaluated bids, UNDP will award a contract for works to the Applicant whose bid will be determined to be substantially responsive to that particular ITB and whose bid attains the first lowest technically responsive bidder.

For each submission of bids to the ITB, pre-qualified Applicants should submit with their bids any information updating their original Statements of Qualification (hereinafter: SOQ) or alternatively confirm in the bids that originally submitted information remain essentially correct as of the date of bid submission.

1. **Eligibility**

All Applicants, whose core area of business is such that they can deliver the envisaged works as outlined in this PQR, are eligible to participate.

All Applicants must commit themselves to comply with UNDP General Terms and Conditions: <http://www.undp.org/procurement/operate.shtml>.

Applicants must not be associated, directly or indirectly, with the consulting firm(s) or any other entity who has been/will be in charge of or assist in the preparing the detailed design for the subject works.

1. **Cost of Submission**

The Applicants shall bear all costs associated with the preparation and submission of their SOQ.

UNDP will in no case be responsible or liable for those costs, regardless of the outcome of the prequalification process.

1. **Language**

The SOQ and all correspondence and documents relating to the SOQ exchanged by the Applicant and the UNDP procuring entity shall be written in the English language only.

Supporting documents (certificates, financial statements, etc.) and any printed literature that are part of the SOQ may be written in other languages, so long as accompanied by an English translation of its pertinent passages in which case, for purpose of interpretation of the SOQ, the English translation shall govern.

1. **Documents Comprising the Application**

The Applicant shall prepare the Application including all requirements mentioned in ITA sections and using the forms set in Section II. All forms must be completed without any alteration to its format. Applications with incomplete submissions shall be disregarded.

**The** ***Applicant shall structure the Application as follows:***

1. Submission Form (**Form 1**);
2. Applicant’s General Information Sheet (**Form 2**);
3. Firm(s) Profile;
4. Applicant’s Specific Experience (**Forms 3, 4, 6, 7 and 8)**;
5. Management and Organization Documents;
6. Quality, Environment, Health & Safety Management System;
7. Financial Capability Situation (**Form 4**);
8. Applicant’s key personnel (**Form 5**);
9. Litigation history (**Form 10**);
10. Bank Account Liquidity Letter (**Form 11**)
11. Any other documents deemed necessary in accordance with the ITA instructions and Forms of Section I & II, such as, but not limited to:
* Certified copies of Registration Documents of legal entity; in case of joint venture or consortium, copies of article of association and/or copy of joint venture/consortium agreement
* Certified copies of licenses for the required construction works, electrical low-current and high-current installation works, mechanical (HVAC) installations and fire-protection systems installations, issued by relevant Ministry(ies) for Applicants registered in BiH or by other authorized government bodies for Applicants registered outside of BiH. **Successful Applicant must obtain licenses applicable in Una-Sana Canton of Bosnia and Herzegovina within two weeks following the receipt of the Letter of Intent**.
* Certified copies of Certificates (professional licensure/ professional exam certificates) to prove the qualification of key personnel
* Equipment ownership titles;
* References on all executed projects for the past five years; and,
* Certified copies of Audited Financial Statements (Balance Sheet and Income Statement)
* Applicant’s statement/List on a company letterhead/memorandum providing names of all the personnel planned for engagement, in case of contract award, indicating names, qualifications, expertise, years of experience.
	1. **Firm(s) Profile**

The Applicant shall provide a brief description of their firm(s) profiles with legal mandates/authorized business activities, year and country of incorporation, core area of specialization, expertise and types of activities undertaken, structure and organization diagram, total full-time employees, type of staff and total professionals in each major category, capability and approximate annual budget and resources to adequately handle the implementation of the required works.

* 1. **Joint Venture**

If the Applicant is a group of legal entities that will form or have formed a joint venture, consortium or association at the time of the submission of the Bid, they shall confirm in their Bid that : (i) they have  designated one party to act as a lead entity, duly vested with authority to legally bind the members of the joint venture jointly and severally, and this shall be duly evidenced by a duly notarized Agreement among the legal entities, which shall be submitted along with the Bid; and (ii) if they are awarded the contract, the contract shall be entered into, by and between UNDP and the designated lead entity, who shall be acting for and on behalf of all entities that comprise the joint venture.

After the bid has been submitted to UNDP, the lead entity identified to represent the joint venture shall not be altered without the prior written consent of UNDP. Furthermore, neither the lead entity nor the member entities of the joint venture can:

1. Submit another Bid, either in its own capacity; nor
2. As a lead entity or a member entity for another joint venture submitting another Bid.

The description of the organization of the joint venture/consortium/association must clearly define the expected role of each of the entity in the joint venture in delivering the requirements of the ITP, both in the bid and in the Joint Venture Agreement.  All entities that comprise the joint venture shall be subject to the eligibility and qualification assessment by UNDP.

Where a joint venture is presenting its track record and experience in a similar undertaking as those required in the ITP, it should present such information in the following manner:

1. Those that were undertaken together by the joint venture; and
2. Those that were undertaken by the individual entities of the joint venture expected to be involved in the performance of the services defined in the ITP.

Previous contracts completed by individual experts working privately but who are permanently or were temporarily associated with any of the member firms cannot be claimed as the experience of the joint venture or those of its members, but should only be claimed by the individual experts themselves in their presentation of their individual credentials.

If the Bid of a joint venture is determined by UNDP as the most responsive Bid that offers the best value for money, UNDP shall award the contract to the joint venture, in the name of its designated lead entity, who shall sign the contract for and on behalf of all the member entities.

* 1. **Relevant Specific Experience**

Applicant shall have at least **5 years of relevant experience** in implementing construction, renovation or rehabilitation projects.

The Applicant shall identify at least **three (3) completed projects** of similar scope and complexity, which demonstrate their specific experience in implementation of the required type of works over the past five (5) years.

* 1. **Management and Organization Documents**

The Applicant should provide a brief narrative description about the management approach and entity organization for the implementation of the civil, mechanical, electrical and other works required. The description and organization chart must clearly identify specific Applicant’s organizational elements and the reporting relationships and functions to be formed by each unit/ work department. The description must include Gantt chart outlining major activities for the project completion **within 10 (ten) months deadline.**

Description should include information about names and positions of the Applicant’s key executives and key management personnel who will have overall responsibility for the implementation of all the required works.

* 1. **Quality, Environmental and Health & Safety Management Systems**

Applicants should attach clear narrative description of a management quality assurance system for the implementation of all the required works. Such a description should include the Applicant’s policy on Quality, Environment, Health & Safety (hereinafter: QEHS) at construction sites.

If the contractor’s management system is certified according to quality management system standards (ISO 9001 or similar), environmental management system standards (ISO 14000 family or similar) or occupational health and safety management system standards (OHSAS 18001 or similar), then copies of all valid certificates should be provided.

If QEHS management systems are not certified in accordance with standards, then Applicant shall clearly describe management systems and provide written statement and clear documentary evidence that they have proven QEHS management systems in place to provide pre-contract and construction supervision services for similar assignments.

* 1. **Financial Documents**

The Applicant should demonstrate proven financial reporting and accounting capability and stability to implement all the required works. Applicants should provide key financial information by filling **Form 4**: Financial Capability Situation.

The Applicant shall provide copies of financial statements (Balance Sheet and Income Statement, Profit and Loss, Cash Flow, notes to the Financial Statements) for the past three (3) fiscal years. The financial statements shall:

1. reflect the financial situation of the Applicant, and not parent or subsidiary firms;
2. be complete, including all notes to the financial statements;
3. correspond to accounting periods already completed (no statements for partial periods shall be requested or accepted).

The financial statements shall be audited by certified auditor.

UNDP reserves the right to require from the Applicant during the evaluation process or at later stage additional evidence (e.g. audited financial balance sheets) to ensure that the financial statements are duly reflecting the financial state of the Applicant.

Applicants should note that performance security and advance payment security bonds may be required by UNDP in the contracting stage.

Key financial data required in **Form 4** has to be expressed in BAM (KM) or USD.

* 1. **Applicant’s Key Personnel**

The Applicant should deliver a statement/List on a company letterhead/memorandum providing names of all the personnel planned for engagement, in case of contract award, indicating names, qualifications, expertise, years of experience.

CVs for staff with demonstrated qualifications in areas of specialization relevant to the Scope of Services shall be presented according to **Form 5** at least for the following key engineers and technician foremen staff:

**Key Engineers:**

* **University Graduate Civil Engineer, required be present on site full-time as site manager,** as to act as an overall team leader and a construction site manager with a minimum of 10 years of experience in the field of construction, reconstruction and/or rehabilitation of residential, commercial or public buildings. The team leader must be full-time employed by the Applicant for at least three years.
* **University Graduate Mechanical Engineer, required be present on site full-time,** to act as a heating, air-conditioning, ventilation (HVAC) team leader with a minimum of 10 years of experience in the field of HVAC installations on residential, commercial or public buildings. The engineer must be full-time employed by the Applicant for at least one year period.
* **University Graduate Mechanical Engineer** to act as a heating, air-conditioning, ventilation (HVAC) engineer with a minimum of 7 years of experience in the field of HVAC installations on residential, commercial or public buildings. The engineer must be full-time employed by the Applicant for at least one year period.
* **University Graduate Electrical Engineer** to act as a high-current electric installation team leader with a minimum of 7 years of experience in the field of high-current electric installations on residential, commercial or public buildings. The engineer must be full-time employed by the Applicant for at least one year period.
* **University Graduate Electrical Engineer** to act as a low-current electric installations specialist, for electro-technical/automation systems and installations with a minimum of 7 years of experience in the field of low-current electro-technical installations and particular expertise in PLC/SCADA systems in residential, commercial, public or industrial buildings. The engineer must be either a full-time employee of the Applicant for at least one year period, or a specialist subcontractor.

**Key Technician Foremen:**

* **Two Technicians specialized in civil and construction finishing works** to act as foremen with minimum of 5 years of experience in the field of construction finishing works of residential, commercial or public buildings. The technicians must be full-time employed by the Applicant for at least one year period.
* **Two Technicians specialized in mechanical (HVAC) works** to act as foremen with minimum of 5 years of experience in the field of mechanical (HVAC) installations of residential, commercial or public buildings. The technicians must be full-time employed by the Applicant for at least one year period
* **One Technician specialized in high-current electrical works** to act as foremen with minimum of 5 years of experience in the field of high-current electrical works of residential, commercial or public buildings. The technicians must be full-time employed by the Applicant for at least one year period
* **One Technician specialized in low-current electrical works** to act as foremen with minimum of 5 years of experience in the field of low-current electrical works of residential, commercial or public buildings. The technicians must be full-time employed by the Applicant for at least one year period.
* **One Technician specialized in hydro-technical installations and works** to act as foremen with minimum of 5 years of experience in the field of hydro-technical works of residential, commercial or public buildings. The technicians must be full-time employed by the Applicant for at least one year period.

**Other personnel:**

* **100 (one hundred) full-time employed construction workers**
	1. **Litigation History**

The Applicant should present information regarding any litigation, current or during the last five years, in which the firm(s) is involved, the parties concerned and dispute amount in accordance with **Form 10**.

1. **Request for Clarifications**

Any request for clarification about the contents of the Prequalification Application Document shall be sent via email address at registry.ba@undp.org or by fax (+387 33 552 330), with note: **Inquiry for UNDP/ItP/001/16**. Answers to questions/inquiries will be shared with all interested companies. While UNDP would endeavor to provide response/clarification expeditiously, any delay in providing such information will not be considered a reason for extending the submission date of application for prequalification.

1. **Informational Meeting**

UNDP will organize at its premises at UNDP BiH Country Office an informational meeting on 10th October 2016 at 11 a.m. (CET). Representatives of all interested Applicants are invited to attend. To confirm participation please send an email message to (registry.ba@undp.org). Minutes of the meeting shall be published on the UNDP BiH website on 11th October 2016.

1. **Submission of Applications**

Documents must be submitted in hard copy (by courier or hand delivery) – one printed original, one printed copy, one electronic copy on a cd, dvd, etc.

Applications in hard copy need to be addressed to the following address:

*United Nations Development Programme (UNDP BiH)*

*GS Unit*

*Zmaja od Bosne bb,*

*71000 Sarajevo, Bosnia and Herzegovina*

*Tel: +387 33 293 400/401*

*Fax: +387 33 552 330*

Applications should clearly note: “**ItP/001/16 - Construction of the new heating facility/system for the Cantonal Hospital in Bihac, Bosnia and Herzegovina,** on the envelopes of the submitted hard copies.

The Applicant shall prepare one original set of the documents comprising the Application as described in ITA clause 8 and clearly mark it “ORIGINAL”. The original of the Application shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Applicant.

The Applicant shall also submit one (1) copy of the signed original Application in a separate envelope, and clearly mark it “COPY”. In the event of any discrepancy between the original and the copies, the original shall prevail. Hard copy Application documents should be bound together using plastic or spiral binding.

The Applicant shall enclose the original and the copy of the Application in a sealed envelope that shall:

* 1. Bear the name and address of the Applicant;
	2. Bear the specific reference number of this prequalification process indicated on the document.

The Employer will accept no responsibility for not processing any envelope that was not identified as required.

The Application shall contain no interlineations, erasures, or overwriting except, as necessary to correct errors made by the Applicant, in which case such corrections shall be initialed by the person signing the Application.

The entire Application shall be scanned or otherwise converted into preferably one electronic PDF (Adobe Acrobat) format file and attached on a CD or DVD as part of their Application.

Applications submitted by fax will not be accepted.

**Deadline for Submission of Applications:** **17th October 2016, 12:00 hrs CET.**

1. **Late applications**

Any Application received by UNDP after the deadline of submission of Application prescribed in ITA clause 8 will not be considered eligible for this prequalification exercise.

1. **Confidentiality**

Information relating to the evaluation of applications, and recommendation for qualification, shall not be disclosed to Applicants or any other persons not officially concerned with such process until the notification of prequalification is made to all Applicants.

1. **Evaluation of Applications and Prequalification of Applicants**

The Employer may reject any application which is not responsive to the requirements of the prequalification document.

UNDP will use a set of unified criteria to evaluate the qualifications of Applicants. Prequalification will be based on compliance with all mandatory requirements related to Applicants specific experience, managerial and financial capabilities and staffing experience, as demonstrated by the Applicants in their submitted Applications. The qualification and evaluation criteria are available in Annex I.

Applicants will be assessed in one-stage process for compliance with the requirements set out in the ITP. Each Applicant will be assessed on a “Pass/Fail” basis as to whether each criterion is satisfactorily met as set in Annex I. **An assessment of “Fail” against any criterion shall eliminate the Applicant from further consideration.**

All Applicants that have been able to meet the eligibility and qualification criteria as set in Annex I shall form the list of pre-qualified Applicants that will be invited to participate in the further tender (ITB) process.

To assist in the evaluation of applications, UNDP may, at its discretion, ask any Applicant for a clarification of its Application, which shall be submitted within a stated reasonable period of time.

If necessary, UNDP may arrange personal interviews to examine the experience of the Applicant’s key team members assigned.

1. **Right to Accept or Reject Applications**

UNDP reserves the right to accept or reject any application, and to annul the prequalification process and reject all applications at any time, without thereby incurring any liability to Applicants.

1. **Notification of Prequalification**

Once the UNDP has completed the evaluation of the applications it shall notify by email to all Applicants about the outcome of evaluation.

1. **Invitation to Bid (ITB)**

Shortly after the notification of the results of the ItP, UNDP shall issue an Invitation to Bid (ITB) for which only the pre-qualified Applicants will be invited to submit their technical and financial proposals.

**Section II: Application Forms and Documents**

**Form 1: Submission Form**

**Statement of Qualifications (SOQ) for the Construction of the new heating facility/system for the Cantonal Hospital in Bihac, Bosnia and Herzegovina**

**Date:** *[insert day, month, year]*

To: UNDP

Zmaja od Bosne bb,

71000 Sarajevo

Bosnia and Herzegovina

We, the undersigned, hereby apply to be pre-qualified for [insert: title of services] in accordance with your Prequalification Request dated *[insert: Date]* and our Statements of Qualification. We are hereby submitting our Statements of Qualification in a sealed envelope.

We hereby declare that:

1. All the information and statements made in this SOQ are true and we accept that any misrepresentation contained in it may lead to our disqualification;
2. We are currently not on the removed or suspended vendor list of the UN or other such lists of other UN agencies, nor are we associated with, any company or individual appearing on the 1267/1989 list of the UN Security Council;
3. We have no outstanding bankruptcy or pending litigation or any legal action that could impair our operation as a going concern;
4. We do not employ, nor anticipate employing, any person who is or was recently employed by the UN or UNDP.
5. We have examined and have no reservations to the Prequalification Documents, including any Addendum (or Addenda to same effect), issued by the procuring UNDP entity in accordance with Instructions to Applicants.
6. We are not associated, or have been associated in the past, directly or indirectly, with a firm or any of its affiliates which have been engaged by the Employer to provide consulting services for the preparation of the design specifications, and other documents to be used for the services to be procured.

We undertake, if our SOQ is accepted and we are pre-qualified, to submit bids for the provision of the required works as will be detailed and presented in the ITB not later than the date that will be indicated in the Data Sheet of the ITB.

We understand that UNDP may cancel the prequalification process at any time and that you are neither bound to accept any application that you may receive nor to invite the prequalified applicants to bid for the contract subject of this prequalification, without incurring any liability to the Applicants.

|  |
| --- |
| The following information shall be used by UNDP to notify us: Authorized Signature *[in full and initials]:*Name and Title of Signatory: |
|  |
| Name of the Applicant:Address:  |
| Tel:  |
| Fax: ***[please mark this letter with your corporate seal if available]*** |

**Form 2: Applicant’s General Information Sheet**

**Date:** *[insert day, month, year]*

|  |
| --- |
| Applicant's legal name:*[insert full legal name, please attach documentary evidence]* |
| In case of Consortium/ Joint Venture legal name of each partner:*[insert full legal name of each member, please attach documentary evidence]* |
| Applicant's country of constitution:*[indicate country of registration, please attach documentary evidence]* |
| Applicant's year of constitution:*[indicate year of establishment, please attach documentary evidence]* |
| Applicant’s licenses to perform the required works (must be valid for the location) 1. Construction of high-rise buildings
2. Mechanical (HVAC) installation works
3. Electrical installations
4. Fire- protection systems installations

*[indicate Ministry or other authorized government body which issued licenses and date until the license is valid]* |
| Applicant's legal address: [insert full information]Street:Building name & Floor No.:City:P.O. Box:Tel:Fax:Mobile:Email:Name of Contact person: |
| Applicant's authorized representative information [please attach documentary evidence]Name: *[insert full legal name]*Address: *[insert street/ number/ town or city/country]*Telephone/Fax numbers: *[insert telephone/fax numbers, including country and city codes]*E-mail address: *[indicate e-mail address]* |
| Applicant’s core area of business/activity *[please list core areas of business activity]* |
| Attached are copies of original documents of:1. Submission Form (**Form1**);
2. Applicant General Information Sheet (**Form 2**);
3. Firm(s) Profile;
4. Applicant’s Specific Experience (**Form 3, Form 4, Form 6, Form 7, Form 8**);
5. Management and Organization Documents;
6. Quality, Environment, Health & Safety Management System;
7. Financial Capability Situation (**Form 4**);
8. Applicant’s key personnel (**Form 5**);
9. Litigation history (**Form10**);
10. Bank Credit Letter (**Form 11**)
11. Any other documents deemed necessary in accordance with the ITA instructions and Forms of Section I & III, such as, but not limited to:
* Certified copies of Registration Documents of legal entity; in case of joint venture or consortium, copies of article of association and/or copy of joint venture/consortium agreement
* Certified copies of licenses for the required construction works, electrical low-current and high-current installation works, mechanical (HVAC) installations and fire-protection systems installations, issued by relevant Ministry(ies) for Applicants registered in BiH or by other authorized government bodies for Applicants registered outside of BiH. **Successful Applicant must obtain licenses applicable in Una-Sana Canton of Bosnia and Herzegovina within two weeks following the receipt of the Letter of Intent**.
* Certified copies of Certificates (professional licensure/ professional exam certificates) to prove the qualification of key personnel
* Equipment ownership titles;
* References on all executed projects for the past five years; and,
* Certified copies of Audited Financial Statements (Balance Sheet and Income Statement)
* Applicant’s statement/List on a company letterhead/memorandum providing names of all the personnel planned for engagement, in case of contract award, indicating names, qualifications, expertise, years of experience.

***Note: Any application form that does not include any of the above mentioned attachments will {(void) the application} not be considered*** |
| I, the owner of the above mentioned firm, certify that the above information is complete and true, and I understand that any discrepancy in the above mentioned information will entitle the UNDP to reject my application. |
| Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Stamp: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**Form 3: Applicant’s Establishment**

**Applicant’s Legal Name:** *[insert full name]*

**Date:** *[insert day, month, year]*

1. How many years has your organization been in business as a contractor under your present Business name?
2. How many years of experience in contracting/ work has your organization had:
3. As a Sole contractor \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Years.
4. As a Sub-Contractor \_\_\_\_\_\_\_\_\_\_\_\_\_\_Years.
5. The Contractor normally performs \_\_\_\_\_\_\_\_\_\_% of the work using own resources (human resources & equipment).

The Contractor normally subcontracts the following Works/Services:

|  |
| --- |
|  |
|  |
|  |

1. List of subcontracts and firms contracted:

|  |  |  |  |
| --- | --- | --- | --- |
| Sections of the works | Percentage Value of subcontract | Subcontractor(Name and address) | Experience in similar works |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

1. Have you ever failed to complete any work awarded to you? \_\_\_\_\_\_\_\_\_\_

If so, note where and why? \_\_\_\_\_\_\_\_**Form 4: Financial Capability Situation**

**Applicant’s Legal Name:** *[insert full name]*

**Date:** *[insert day, month, year]*

*Summarize actual assets and liabilities in BAM (Bosnian Convertible Mark) or US dollars equivalent for the previous three recent years:*

|  |  |
| --- | --- |
| **Financial Information in BAM or USD** | **Historic Information for previous 3 years in BAM or USD** |
|  | Year 1 | Year 2 | Year 3 |
| **Information from Balance Sheet** |
| Total Assets (TA) |  |  |  |
| Total Liabilities (TL) |  |  |  |
| Current Assets (CA) |  |  |  |
| Inventory (IN) |  |  |  |
| Cash and cash equivalents |  |  |  |
| Account Receivables (AR) |  |  |  |
| Current Liabilities (CL) |  |  |  |
| **Information from Income Statement** |
| Annual Turnover |  |  |  |
| Profits Before Taxes (PBT) |  |  |  |
| Current Ratio (CR)[[1]](#footnote-1), calculated as QR=(Cash + AR + IN)/ CL | [Insert QR] | [Insert QR] | [Insert QR] |

Attached audited financial reports for the most recent three years.

*Use the following table to complete bank information.*

|  |  |  |  |
| --- | --- | --- | --- |
| Name of Bank | Address | Name & Title of Contact | Tel/ Fax No. |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

*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 cash flow demands of the subject contract or contracts as indicated. Attach copies of support document.*

|  |  |
| --- | --- |
| Source of financing | Amount (BAM or US $ equivalent) |
| 1. |  |
| 2. |  |
| 3. |  |
| 4. |  |

*Attach audited financial statements—including, as a minimum, profit and loss account, balance sheet, and explanatory notes—for the period of last three calendar years. (for the individual Applicant or each partner of a joint venture).***Form 5: Key Personnel Capabilities**

**Applicant’s Legal Name:** *[insert full name]*

**Date:** *[insert day, month, year]*

*[List the names and CVs for the following full-time employed key staff proposed for the administration and execution of the conservation and rehabilitation works]*

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Name | Occupation | Min. Years of Experience |
| 1. |  | Graduate Civil Engineer(Team Leader) | 10 |
| 2. |  | Graduate Mechanic Eng. (HVAC specialist, leader) | 10 |
| 3. |  | Graduate Mechanic Engineer (HVAC specialist) | 7 |
| 4. |  | Graduate Electric Engineer (high- current specialist) | 7 |
| 5. |  | Graduate Electric Engineer (PLC/SCADA specialist) | 7 |
| 6. |  | Technicians Foreman (civil) | 5 |
| 7. |  | Technicians Foreman (civil) | 5 |
| 7. |  | Technicians Foreman (HVAC)) | 5 |
| 8. |  | Technicians Foreman (HVAC) | 5 |
| 9. |  | Technicians Foreman (high- current electrical) | 5 |
| 10. |  | Technicians Foreman (low- current electrical) | 5 |
| 11. |  | Technicians Foreman (hydro technical) | 5 |
| 12. |  |  |  |
| 13. |  |  |  |
| 14. |  |  |  |

**Applicant’s Legal Name:** *[insert full name]*

**Date:** *[insert day, month, year]*

*[Biography of each Engineer and Technician shall be presented utilizing the following table]*

|  |  |
| --- | --- |
| **Name:** |  |
| **Position for this assignment:** |  |
| **Contact Information:** |  |
| **Years of Experience** |  |
| **Educational and Other Qualifications:** |  |
| **Summary of Experience:** *highlight experience in the region and on similar projects* |
| **Relevant Experience** (from the most recent): |
| **Period: From – To** | **Name of activity/ Project/ funding organization if applicable** | **Job Title and Activities undertaken/ Description of actual role performed** |
|  |  |  |
|  |  |  |
|  |  |  |
| **Reference No. 1 (of the minimum of 3)** | NameDesignationOrganizationContact information – Address; Phone, Email, etc. |
| **Reference No. 2** | NameDesignationOrganizationContact information – Address; Phone, Email, etc. |
| **Reference No. 3** | NameDesignationOrganizationContact information – Address; Phone, Email, etc. |
| **Declaration:**I confirm my intention to serve in the stated position and present availability to serve for the terms of the proposed contract. I also understand that any willful misstatement described above may lead to my disqualification, before or during my engagement.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Signature of the Nominated Staff Date Signed |

**Form 6: Particular experience record of works of similar type, scope and complexity**

**Applicant’s Legal Name:** *[insert full name]*

**Date:** *[insert day, month, year]*

*Provide the following information regarding corporate experience within the last five (5) years related or relevant to those required for this PQR for various entities including international NGOs.*

*List projects chronologically, according to their commencement (starting) dates.*

*The Applicant is requested to list contracts of a similar nature, complexity, and requiring similar construction technology to the contract or contracts for which the Applicant wishes to qualify, and which the Applicant has undertaken during the period, and of the number, stated in the letter of invitation. Each partner of a joint venture should provide details of similar contracts on which they have experienced. The contract value should be based on the payment currencies of the contracts converted into U.S. dollars, at the date of substantial completion, or for ongoing contracts at the time of award. The information is to be summarized, using Form (3A), for each contract completed or under execution, by the Applicant or by each partner of a joint venture.*

*Where the Applicant proposes to use named subcontractors for highly specialized elements of the Works, the information in the following forms should also be supplied for each subcontractor (or alternate, if any).*

*The applicant should pay a specific attention when filling thin form, in regard to the particular experience and criteria required.*

*It includes in particular experience in execution of projects and works of similar nature, scope and complexity (construction, mechanical, electrical)*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Project name | Client | Contract Value in US$ | Period of activity | Construction Activities Undertaken | Status and date of completion | References Contact Details (Name, Phone, Email) |
| Civil works | Mechanical (HVAC) works | Electrical works |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
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|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  | Total | Total | total |  |  |

**Form 7: Details of Contract of Similar Nature and Complexity**

**Applicant’s Legal Name:** *[insert full name]*

**Date:** *[insert day, month, year]*

*[Use a separate sheet for each contract]*

|  |  |
| --- | --- |
| 1. | Number of Contract |
| Name of Contract |
| Country |
| 2. | Name of Employer |
| Employer Address |
| 3.  | Nature of works and features relevant to the contract for which the Applicant wishes to prequalify |
| 4. | Contract role (check one)🞎Prime Contractor 🞎Management Contractor 🞎Subcontractor 🞏Partner in a Joint Venture |
| 5. | Amount of the total contract/subcontract/partner share (in specified currencies at completion, or at date of award for ongoing contracts) |
| 6. | Equivalent amount in BAM or US$Total contract: $\_\_\_\_\_\_\_\_\_\_\_ ; Subcontract:$\_\_\_\_\_\_\_\_\_\_; Partner share:$\_\_\_\_\_\_\_\_ |
| 7. | Date of award/ completion |
| 8. | Contract was completed \_\_\_\_\_\_months ahead/behind original schedule (if behind, pls. provide explanation) |
| 9 | Contract was completed BAM or US$\_\_\_\_\_\_\_\_\_ equivalent under/over original contract amount (if over, provide explanation) |
| 10. | Special contractual/ constructional requirements, including monthly/annual production rates of the key construction activities. |
| 11. | Indicate approximate percent of total contract value (and US$ amount) undertaken by subcontract if any, and the nature of such work |

**Form 8: Current Contract Commitments/ Works in Progress**

**Applicant’s Legal Name:** *[insert full name]*

**Date:** *[insert day, month, year]*

*Applicants should provide information on their current commitments on all contracts that have been awarded, or for which a letter 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.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Contract name | Employer, contact address/ tel/ fax | Value of outstanding work (current BAM or US $ equivalent) | Estimated/ contracted completion date | Average monthly invoicing over last six months (BAM or US $/month) |
| 1. |  |  |  |  |
| 2. |  |  |  |  |
| 3. |  |  |  |  |
| 4. |  |  |  |  |
| 5. |  |  |  |  |
|  |  |  |  |  |

**Form 9: Schedule of Owned Construction Plant & Equipment**

**Applicant’s Legal Name:** *[insert full name]*

**Date:** *[insert day, month, year]*

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Description of Equipment** | **Model** | **Estimated Value in BAM or US $** |
|  |  |  |  |
|  |  |  |  |
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|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  | **TOTAL** |  |

**Form 10: Litigation History**

**Applicant’s Legal Name:** *[insert full name]*

**Date:** *[insert day, month, year]*

*Information regarding any litigation, current or during the last five years in which the firm(s) has been involved, the parties concerned and dispute amount.*

|  |  |  |  |
| --- | --- | --- | --- |
| **Year** | **Award FOR or AGAINST Applicant** | **Name of Client, cause of litigation and matter in dispute** | **Disputed amount (current value in BAM or US $ equivalent)** |
|  |  |  |  |
|  |  |  |  |
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**Form 11: Sample Bank Account Liquidity Letter**

Name of Bank: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Address: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Subject: Pre-qualification of Contractors to perform Construction of the new heating facility/system for the Cantonal Hospital in Bihac, Bosnia and Herzegovina,

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ authorized employee of the Bank:

Certifies that the transactional account of our client is liquid

According to the account of the legal entity \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ based in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_--, opened in the Bank \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ account number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_- has no outstanding liabilities at the date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

We affirm that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ account was not blocked in the bank \_\_\_\_\_\_\_\_\_\_\_\_\_\_ during last 6 (six) months.

The certificate is issued for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and for other purposes cannot be used.

\_\_\_\_\_\_\_\_

(Name of the Bank)

**Annex I: Qualification Criteria and Requirements**

|  |  |  |
| --- | --- | --- |
| **Eligibility and Qualification Criteria** | **Compliance Requirements** | **Reference** |
| No. | **Subject** | **Criterion** |  |  |
| * **Submittal Requirements**
 |
| 1.1 | Provision of Application | Application submitted: 1 printed original and 1 printed copy provided:* In sealed envelope
* Properly marked
 | Must meet requirement | ITA Section I, Clause 8 |
| 1.2 | Format of Application | Original and copy of Application are:* Bounded separately, and
* Duly marked
 | Must meet requirement | ITA Section I, Clause 8 |
| 1.3 | Signatures | Original Application is:* Duly signed by
* Authorized Applicant
 | Must meet requirement | ITA Section I, Clause 8 |
| 1.4 | Electronic copy | Application converted into PDF format and attached on a CD or DVD as part of Application | Must meet requirement | ITA Section I, Clause 8 |
| 1.5 | Correctness | Application contains no interlineations, erasures or overwriting except as necessary to correct errors made by the Applicant | Must meet requirement | ITA Section I, Clause 8 |
| 1.6 | Language | Application written in English;English translation of pertinent passages of other languages documents provided | Must meet requirement | ITA Section I, Clause 4 |
| 1.7 | Submission Form | Submission form is:* Presented,
* Complete,
* Duly signed
 | Must meet requirement | Section II, Form 1 |
| 1.8 | Information about Applicant | Applicant’s General Information Sheet is:* Presented;
* Complete and
* Duly signed
 | Must meet requirement | Section II, Form 2 |
| 1.9 | Documents of Registration | Certified copies of Registration Documents are provided for:* Applicant
 | Must meet requirement | ITA Section I, Clause 5 &Section IIForm 2, Form 3 |
| 1.10 | Documents of Required Licenses of a Legal Entity | Certified copies of Licenses to perform required works are provided for:* Applicant
 | Must meet requirement | ITA Section I, Clause 5 &Section IIForm 2, Form 3 |
| 1.11 | CVs of the Key Personnel | CVs of the key personnel:* Presented for every required key personnel;
* Complete;
* Copies of diplomas and personal professional licensure/exam certificates to prove the qualifications provided for every required key personnel
 | Must meet requirement | ITA Section I, Clause 5.6 &Section IIForm 6 |
| 1.12 | Documents for registered full-time employees | Original Certificates issued by Tax Administration (for Applicants registered in BiH) or by other authorized body for Applicants registered outside BiH, confirming paid contribution for all registered full-time employed personnel, issued within the last 30 days and including the complete list of personnel.  | Must meet requirement | ITA Section I, Clause 5.6 |
| 1.13 | Management and organization | Narrative description of management approach and entity organization presented including organization chart | Must meet requirement | ITA Section I, Clause 5.3 |
| 1.14 | Management and organization | Narrative description of management quality assurance system presented including providing relevant QHES certificates | Must meet requirement | ITA Section I, Clause 5.4 |
| 1.15 | Financial Capability | Submission of key financial data:* Form 4 is completed
 | Must meet requirement | ITA Section II, Form 4 |
| 1.16 | Financial Statements | Submission of endorsed/ certified Financial statements for the last three recent fiscal years | Must meet requirement | ITA Section I, Clause 5.5 |
| 1.17 | Bank Credit Letter | Submission of Bank Credit Letter:* Form 11 is completed
 | Must meet requirement | ITA Section II, Form 11 |
| 1.18 | Litigation history | Submission of complete information according to requirements and history of litigation or arbitration against Applicant | Must meet requirement | ITA Section II, Form 10 |
| * **Eligibility Requirements**
 |
| 2.1 | General Eligibility | Not on the removed or suspended vendor list of the UN or other such lists of other UN agencies, nor associated with, any company or individual appearing on the 1267/1989 list of the UN Security Council. | Must meet requirement | Section II, Form 1 |
| 2.2 | Association with consulting firms | Applicant must not be associated, directly or indirectly, with the consulting firm(s) or any other entity in charge of or assisting in preparing conceptual or detailed designs of the works to be executed. | Must meet requirement | ITA Section I, Clause 2 |
| 2.3 | UNDP General Terms and Conditions | Commitment to UNDP General Terms and Conditions | Must meet requirement | ITA Section I, Clause 2, Section II, Form 1 |
| * **Specific Experience Requirements**
 |
| 3.1 | **Past Specific Experience of Performing similar assignments as a Prime Contractor** | Applicant shall have at least five (5) years of relevant experience in implementing construction, renovation or rehabilitation projects.The Applicant shall identify at least three (3) completed projects which demonstrate their specific experience in implementing projects of similar nature and complexity in the past five (5) years. | Must meet requirement | Section II, Forms 3, 6, 7 and 8 |
| 3.2 | **Minimum Required Project Volume of Works in the field of construction of buildings as a Prime Contractor** | Minimum project volume of implemented works during the last five (5) years in the following types of interventions:1) Civil works, construction of buildings: Project volume minimum BAM 2,000,000 or equivalent in US dollars2) Mechanical (HVAC) works, installation of biomass heating systems: Project volume minimum BAM 2,000,000 or equivalent in US dollars 3) Electrical works, high- and low-current installations: Project volume minimum BAM 250,000 or equivalent in US dollars | Must meet requirement | Section II, Forms 3, 6, 7 and 8 |
| * **Specific Personnel Requirements**
 |
| 4.1 | **Minimum required key personnel proposed for the supervision and management of the project, which should be provided for the contract duration** | Applicant shall employ on full-time basis a minimum of:* 5 graduate licensed engineers:

-Civil engineering (1) -Mechanical HVAC (2) -High-current electric (1) -Low-current electric (1), electro-technical engineer/automation, with specific expertise in PLC applications and SCADA systems (full-time or subcontracted)* 7 technicians/foremen:

Civil engineering (2) Mechanical HVAC installations (2) High-current electric (1) Low-current electric (1) Hydro technical works (1) | Must meet requirement | Section I, Clause 5.6, Section II, Form 5 |
| 4.2 | **Minimum required other worker, which should be provided for the contract duration** | Applicant shall employ on full-time basis a minimum of:* 100 construction workers in addition to the required key personnel
 | Must meet requirement | Section I, Clause 5.6, Section II, Form 5 |
| * **Financial Eligibility Requirements**
 |
| 5.1 | Liquidity | Current (liquidity) ratios must not be lower than 1.0 | Must meet requirement | Section II, Form 4 |
| 5.2 | Average annual turnover for consortium leader | An average annual turnover equal to four million BAM or equivalent in US dollars over the last three years. | Must meet requirement | Section II, Form 4 |

**ANNEX II – TECHNICAL DESCRIPTION SUMMARY**

|  |
| --- |
| **Construction of the new heating facility/system for the Cantonal Hospital in Bihac, Bosnia and Herzegovina**The project concerns construction of a new heating facility/system including the following:* Constrution of a new building consisting of: boiler rooms, primary and secondary warehouse for biomass, tehnical staff rooms, storage and workshops.
* Construction of a new external heating pipeline (heat distribution pipeline)
* Rennovation of the existing heating substations in Cantonal Hospital buildings

Implementation of works is planned in two phases:Phase 1: December 2016 – April 2017 Including: Construction of the building  Boiler room works and installationsPhase 2: May 2017 – September 2017 Including: Construction of external heating pipelines Works at the heating substations Connections to the boiler room Testing and commissioning of the whole system**1.3. PURPOSE AND DISPOSITIONS OF PLANNED FACILITIES****1.3.1. Layout of the land plot** The facility on the land plot is free-standing which is in conformity to the investor’s requests, but also in conformity to the capacities of the said site; the facility’s dimensions are 72.00 m x 18.80 m, and the planned number of floors is P (ground floor).**1.3.2. Layout of the facility** The purpose of the facility is to serve as an energy and utilities block. A character of the facility is permanent. The facility has a ground floor with a different height (from 5,1 m to 11,9 m).The boiler room consists of the following functional units: heating oil boiler room, biomass boiler room, primary and secondary warehouse.The technical part contains the design of the following: generator room, sprinkler room, technical equipment room, workshop, office of the head of technical service, toilets, cloakroom with a toilet and air-condition chamber.The areas of heating oil and biomass boiler rooms have an access from the outside of the facility as well (economic entrances). The said areas are connected with one another by double and single doors. A part of the bio mass boiler room contains a platform with a control room with a view of having the best possible visibility in both boiler rooms. The control room is accessed by way of industrial steel stairs. There are two biomass warehouses (primary and secondary) next to the boiler room which are accessed from a handling platform located on the north-eastern side of the facility. **TECHNICAL CARACTERISTICS****THE BUILDING STRUCTURE**Each of these two units is designed as a constructively single unit with constructive dilatations. Constructive dilatations are adopted due to different elevations and directions of the said units and also in view of relatively poor ground for the engineering foundation of facilities.Construction of the facility belongs to the skeleton construction system and is consisted of reinforced concrete pillars with beams with the foundation on reinforced concrete spot footings which are interconnected with over-base beams and in that way they make unique assemblies. All floor tiles in the facility are reinforced concrete tiles that are 15 to 80 cm thick. A roof structure is made of main steel truss leaned on both sides onto main reinforced concrete pillars. Main loadbearing pillars have the following dimensions: 100x50, 50x40 and 50x50 cm and they are laid out on the boundaries of the facilities. Main loadbearing pillars are about 3,80 and 10,45 m tall. Main loadbearing pillars are connected with boundary reinforced concrete beams in two bases. The facility is designed as a single hall, with the 15,70 m gauge.A canopy is leaned on AB beam of the facility. Roof trusses are connected with binding rafters HOP140x80x3.5 or IPB (HEA) 140 depending on the costing and the item. Binding rafters are at a span of 1,49 m. A roof structure is safeguarded by traverse and longitudinal wind bracing. The entire design of the facility construction, along with the plan of casing and reinforcement, specification of reinforcement within AB structure, drafts of steel structure, and specification of materials for steel structure can be found in the part of the structure design. Hydro insulation is done partly on AB slab, and partly under AB slab at the 10 cm thick sub-floor. Hydro insulation is rendered by a protective coat of concrete which is 4 to 5 cm thick. A compacted layer of gravel which is at least 20 cm thick is rendered under the sub-floor. Polyethylene film is rendered over the floor thermal insulation and 8 cm thick thermal insulation is rendered as well as 4 cm thick cement screed.A finishing floor cladding in all rooms is consisted of anti-sliding tiles of the 1st class in glue. A finishing floor cladding in the boiler room is made of ferroconcrete while AB slabs are used in warehouses. **THE ARCHITECTURAL MATERIALIZATION** Exterior walls of technical rooms will be built by 25 cm thick hollow pot, and covered by contact thermal insulation façade (mineral stone wool) d=10 cm with final processing. Finishing facade of the technical rooms to be covered by finishing touch of paint RAL 1003-229-190-001, #E5BE01 Signal yellow as recommended or similar shade in relation to the said RAL.Exterior walls of the boiler room are made of facade thermal insulation sandwich panels d=10 cm, that are hanged on steel sub-structure that is placed under pillars and beams. The panel is colored by RAL 7043, 078-084-082, #4E5452, Traffic grey B or similar shade in relation to the said RAL.The finishing coat of the warehouse exterior walls is made of concrete.The positions shown in the drawings area rendered by façade mesh – made of elongated aluminum sheet in the 150x70cm modulus, with 5x2.5mm shafts, plasticized in RAL 7043 color, along with the relevant stainless aluminum sub-structure with INOX anchors. **THE ROOF TREATMENT**The roof tops are planned to be covered by thermal insulation panels with stone wool filling in RAL 9006 color or similar. Panel thickness d= 8 cm; panels are placed on the roof truss over the sub-structure. The final treatment of the canopy in the zone of economic entrances contains 6 mm thick profile plasticized sheet with all supporting lining elements, declining by 17 º, hanged on a steel structure. **TREATMENT OF THE FLOORS, CEILINGS AND WALLS**Interior walls are made of gypsum-cardboard baseboards while masonry wall is made of hollow pot. The total thickness of gypsum-cardboard baseboard walls is 10 and 15 cm, and masonry walls are made of 20 and 25 cm thick hollow pot.Masonry walls are plastered and painted by half-dispersive color as selected by the structural designer. The surface of interior walls must be smooth.Interior walls of each office room and in the hallways and belonging surfaces are painted by half-dispersive colors (white color).All wall and floor tiles are in grey color with minimum allowed dimensions of 30/30 cm or larger.Floors in the facility are treated in the following way:Floors in the ground floor – in technical room part (grey colored ceramics), are covered by anti-slip ceramics with minimum allowed dimensions 30/30 cm or larger ones with a plinth. All wall tiles are white in color with minimum allowed dimensions of 30/30 cm or larger.Office floors are covered by grey ceramic tiles, with minimum allowed dimensions of 30/30 cm or larger with a 10 cm plinth. Floors in offices and corridors are covered by grey ceramic tiles, with minimum allowed dimensions of 30/30cm or larger with a plinth. Floors in the boiler room have the finishing layer made of ferro-concrete, while the floors in the warehouses are not treated - they are made of reinforced concrete slab. All ceilings in the facility, save for the boiler room and warehouses, are lofty ceilings – monolith or modular, made of gypsum-cardboard baseboards or a combination of modular and monolith. The rooms susceptible to moisture are covered by moisture resistant boards. Monolith ceilings are painted by half-dispersive colors. Modular lofty ceilings are placed in corridors, office rooms and guard’s booth, with 60x60 cm grid.The modulus of boards must be selected in consultation with the structural designer. A monolith lofty ceiling is placed in the sprinkler system room and generator room, made of gypsum-cardboard baseboards 2 h fire resistant, at an appropriate steel sub-construction.**DOORS AND WINDOWS**All exterior window positions are made of highly resistant hard PVC six-chamber profiles, in color and details according to the description given in the joinery scheme. Windows are glazed with low-emission-three-layer glass (4low-e+16arg+4+16arg+4low-e), with a total coefficient of Ug<0.8 W/m2K. All PVC windows should have a possibility for natural air flow with fully closed window sash. Windows are provided with a mechanism for opening and closing of a sash around a vertical and horizontal shaft on the positions where they exist – in accordance with the joinery schemes. The price should include a high-quality gasket material (two-component putty, polyurethane foam and the like), cover battens at the joint of façade joinery/metalwork and construction which guarantee full protection from moisture penetration and draught. All exterior door positions are made of aluminum profiles with thermal suspension. A frame is made of improved aluminum profile with thermal suspension, eloxed, in color and details as provided in joinery scheme. Sashes are filled with three-layer glass (4low-e+16arg+4+16arg+4low-e), with the total coefficient of Ug<0.8 W/m2K. A solid part of a sash is filled with thermal panel filled with 5,00 cm thick stone mineral wool. The doors are installed to the built opening by the dry installation method. The item includes all lining battens eloxed in color of the door profile, cylinder with a lock and three keys, as well as an opening mechanism and a pump to get back in a closed position.All interior doors (save for fire door) should be made of aluminum profile RAL 9006 with no thermal suspension, with 50 mm installation depth, and 36 mm minimum visible width of framed ground. A solid part of a sash contains a thermal panel filled with 5,00 cm thick stone mineral wool. The doors are installed in a built opening by a dry installation method. The item should include all lining battens eloxed in color of the door profile cylinder with a lock and three keys, as well as an opening mechanism and a pump to get back in a closed position. Doors can be solid or glazed depending on the item in line with the joinery schemes. The attached graphs include specially marked fire doors which must be made fully in line with the producer’s specifications. All fire and anti-smoke doors must be tested by a relevant authority in BIH.All metalwork items such as canopy, sun shield, platforms, staircase and the like are mentioned in the metalwork schemes and described in the bill of quantities. **THERMAL AND SOUNDPROOF INSULATION**Thermal and soundproof protection of the facility is provided by a contact thermal insulation façade made of mineral stone wool d=10 cm and façade sandwich panels (d=10cm), and thermal insulating glass towards exterior surfaces, or roof sandwich panels (d = 8 cm) and thermal insulation above the ceiling made of 15 cm thick mineral wool. Thermal protection in the zones between the structure floors is provided by thermal insulation boards d=8 cm.**HYDRO INSULATION**Protection of the facility from moisture and water is provided by horizontal and vertical hydro insulation in layers. Horizontal hydro insulation in sanitary plumbing is provided by impermeable coat.Gutters on the facility are horizontal and vertical. Gutter verticals are made of galvanized sheet. Gutter jointing is made by special rubber elements in order to eliminate unavoidable unwanted effects which are the result of dilating of long horizontal gutter positions. Collection lines of gutter verticals are described in a hydro technical section of the design. **INSTALATIONS**The building will be connected to infrastructure facilities such as water supply, sewerage, precipitation, low voltage electrical and telephone networks within the Cantonal Hospital “Dr. Irfan Ljubijankić” in Bihać. A new heating system pipeline network will be made for the purpose of supplying other facilities with heat energy from the biomass boiler room. **PLUMBING (HYDRO-INSTALATION)**The hospital compound has the water supply and sewerage network connected to the existing facilities and the new building is planned to be connected thereto. Hydro technical infrastructure at the given site contains the following:* Ø90 mm profile water supply system on the north-west from the given site
* Combined collector on the north-east

**Exterior water supply** **The site where the given facility is going to be built meets the requirements to provide water supply from the water supply system in the hospital compound. Ø90 mm profile pipeline is on the north-west and it will provide the facilities with sanitary and hydrant water.** **Water supply installation in the facility** The newly designed EE building has separated water supply installation for sanitary water from the installation for fire hydrant water (interior hydrant network in the facility). Supply with hot water will be provided locally at the spot by way of an electrode boiler. Water installations are mainly kept in the ground floor ceiling, while one part (toilets) are kept within walls at 20,0 cm elevation from the floor elevation – cold water and 30,0 cm above the floor elevation – hot water. Ceiling water supply installations (cold and hot water and circulation) are kept parallel to one another most frequently in the communication rooms– corridors.**Water supply installations for fire extinguishing (hydrant network)**The design foresees the interior hydrant installation. The hydrant network in the facility is made of steel galvanized pipes and special elements in accordance with the attached graphs. The hydrant network is separated from sanitary water installations. The hydrant network is designed in line with the Rules on technical norms for exterior and interior hydrant network for fire extinguishing. ("Official Gazette of the Federation of BIH", Vol 64/09). For the purpose of fire extinguishing, wall hydrant cabinets made of sheet are planned for the facility along with associated equipment (hydrant oblique valve ∅ 50, 15 meters of hydrant hose ∅ 50, hydrant jet nozzle with a valve ∅ 50/12 mm).**ELECTRICAL INSTALLATIONS**The design documentation includes high- and low-current electrical installations of the new building. The building is a ground floor building divided into two functional units. The first unit contains a boiler room with ancillary rooms and the second unit contains auxiliary rooms of technical service. **Electric energy supply for the facility** There will be two functional units in the new building, that is, a boiler room and technical service rooms and it is foreseen to supply them with electric energy from RO-boiler room. The cabinet is supplied with electricity by cables of proper type and section directly from the existing substation. Supply cables for the said distribution cabinet are not subject to this technical documentation and they are included in the exterior planning design. Measuring the electrical power consumption is centralized in substations of the compound and is not subject to this technical documentation. According to the design specifications, a reserve supply source (generator) is foreseen for a number of priority consumers (boiler cabinet, pumps, fire alarm system, rack cabinet, control center positions and part of the light system). An automatic generator and cabinet are placed in the room next to the technical room which holds a distribution cabinet of a boiler room. **Energy distribution**Separate distribution cabinets are foreseen for each functional unit in the facility in order to provide for the electric energy distribution. It is foreseen that the boiler room accommodates air condition cabinets for the chamber, boiler and pumps. The distribution cabinet of air condition for the chamber is supplied with electric energy from the network bus bar (it is not carried out at this stage of construction) while the boiler and pumps cabinets are supplied from the generator bus bar as shown in the electric energy distribution scheme. Supply cables are laid from the distribution cabinets to the end consumers vertically from the distribution cabinet to the lofty ceiling, then through perforated cable canals installed in the lofty ceiling area onto the structure of the building, structure of the boiler room facility, in self-extinguishing PVC pipes, into the wall under the plaster, through gypsum-cardboard wall or floor distribution in protective PVC pipes of a proper section, or on the wall in protective self-extinguishing pipes in the boiler room.**Low-current electricity installations** A telephone system in the facility should provide for telephone communications within the facility and the town telephone network and it should provide for the usage of modern communication methods. Digital telephone switchboard is not the subject to this design and it will be defined subsequently by the investor depending on his needs and possibilities of getting connected to a telecom operator subject to consultation with the relevant telecom operators. Connecting the facility to the TT network (public network) is foreseen in RACK cabinet, which is placed in a technical room. **Fire alarm system**The design foresees a modern analogous-addressable fire alarm system with a lot of functional possibilities while the human factor still plays an important role in carrying out measures of fire protection. Addressable systems provide a lot more precise information on the status of each sensor, and so the address lets us know a precise location of every sensor and it provides for a successful recognition of real and false alarms. The precise location of initial fire speeds up the operator’s reaction, and therefore a possible damage is lower. A fire warning is signaled by a sound of alarm sirens. Signalization of the condition and activation of all detectors, as well as management of the fire signalization system is possible only from the control panel. The design includes a microprocessor addressable control panel for fire signalization of Global Fire make. **HEATING, VENTILATION AND AIR-CONDITIONING (HVAC) OF EE BUILDING**A substation is designed for the respective facility with planned reserve outgoes for possible future extension of the facility. Reserve outgoes are planned for air condition supply for plants in extended part of the facility which will accommodate a kitchen and laundry room. The need for heat energy in this facility (at this stage of construction) amounts to 30 kW. Heat energy is provided in a sub-station by way of a plate heat exchanger which is connected by its primary side on the central heating network (90/70oC) through a pipeline NO80 (Ø88,9 x 3,2 mm) and has the following working requirements:* primary:
	+ working medium: hot water 90/70oC – supply from the central boiler room by way of a heating network
	+ working pressure: 3 bars
* secondary:
	+ working medium: hot water 80/60oC
	+ working pressure: 2 bars

For the purpose of adjusting a flow of primary side hot water and sliding conduction of the initial hot water temperature of the secondary in relation to the exterior temperature, a regulation circuit of automation with an electric motor regulatory valve, microprocessor steering unit and proper exterior temperature sensors and liquid sensors is selected. For the purpose of supplying the sub-station, regulation of the necessary flow at the primary side of the heating system pipeline is done via balancing valve NO 65 NP16 with sockets where a differential manometer can be connected for the purpose of reading and adjusting the flow. A pipe network in the heating sub-station is made of black steel seamless pipes. Suspension of the pipeline is cantilever and suspension droppers in order to prevent the pipeline and working medium to exert any load on the equipment by their weight. All transition pieces of the pipeline due to section changes will be done by proper concentric diminishing pieces. The connection of branches will be made by cut half-elbows. Jointing of the pipeline will be done by welding in the TIG, REL or AGV procedure.Working reinforcement (spherical taps, impurity catchers, cover flaps) is foreseen for nominal pressures NP16. The entire reinforcement is in the flange joint and foreseen to work up to 120oC temperature in the primary and secondary part. Sealing will be done by Klinger gaskets of appropriate thickness (2 to 3 mm). The pressure control will be done by installed manometers Ø100, R 1/2“with a +/- 0,1 bar precision. Manometers are connected according to the scheme for reading of a pressure at characteristic sections of the network. This allows for a proper keeping and monitoring of obstructions in the work of the system caused by dirty equipment (impurity catchers, alternator and the like). For the purpose of measuring the temperature at the characteristic sections of the installation, thermometers are installed in a yellow brass sleeve R1/2“with the measurement range from 0 to 120oC. The entire pipeline in the sub-station (primary and part of the secondary part to the distributor) is insulated by 40 mm thick mineral wool in 0,7 mm thick aluminum sheet lining. The issue of water expansion as a result of heating and protection of the system from exceeding the pressure is solved by a closed membrane expansion vessels of appropriate quantity in line with the strength of the sub-station and accumulated water in the system. The alternator and part of the equipment are protected by safety valves adjusted to the opening pressure of 3 bars. The secondary (users) side of the heating sub-station contains separate circulation circles for the following:* radiator circle of heating in the EE facility
* heating pipeline heater of the air condition in the kitchen chamber and
* heating pipeline heater of the air condition in the laundry room chambers.

For the purpose of hot water circulation, the installation of highly efficient, frequency-regulated circulation pumps is planned for every circle, connected to the secondary hot water distributor in the sub-station in full conformity to the scheme shown in the attached graph. The distributor and collector of hot water are equipped with proper outlets in the flange joint, outlets for measuring reinforcement, outfall, with appropriate thermal insulation by 50 mm thick mineral wool in aluminum sheet lining. After the pipeline network is successfully installed, the sub-station installation will be examined in terms of impermeability during 8 hours under the pressure 1,5 times higher than a working pressure. Following a successful examination, a record should be made on a carried out cold hydraulic test which must be verified by the supervisory body and contractor. Following the examination, the installation should be washed with cold water until clean water starts to come out of the installation. **Radiator heating** A so-called two-pipe heating system was selected with a forcible circulation of the temperature regime 80/60oC. Aluminum panel radiators are chosen as heating appliances with the dimensions and size described in the graph section of the design. All heating appliances are equipped with radiator valves for two-pipe heating system (100% flow) with an ascending pipe and thermostat with a head for regulation of room temperature. Distribution of water from the sub-station to distribution cabinets is done by black steel seamless pipes beneath the ceiling in full conformity to the attached graphs. Heating appliances (aluminum panel radiators) are charged with Ø16 x 2 mm Pex-al-pex pipes in the floor glaze from distribution cabinets placed in walls. Cabinets are equipped with a distributor, collector, lock gate and regulatory reinforcement, depletion tap and automatic deaerator. The position and details of distribution cabinets are given in the graph section of the design. Deaeration of the system is based on deaerators placed at the highest installation spots, at the ends of verticals. Also, deaeration is foreseen in distribution cabinets by way of automatic deareators and by manual deaeration taps on radiators. A complete depletion of the installation in a new part of the facility is at the lowest installation spot, in the sub-station. The entire pipeline of black steel pipes through a new part of the facility needs to be coated with a primer in two coats after it is cleaned from grease. After that, the pipeline needs to be coated with a white varnish resistant to up to 120oC temperature and that pipeline does not get insulated. The sub-station pipeline (with no heating) needs to be insulated with a coat of 40 mm thick mineral wool in the lining of 0,7 mm thick aluminum sheet. **BOILER ROOM**The compound of hospital facilities is currently supplied with heating from the light heating oil boiler room which is located in the existing “Foča” building. Distribution of hot water, which carries the heat from the boiler room to the existing pumping stations, which are placed in the facilities seated in heated areas, is carried out in surface (mainly in the facilities) and underground heating pipelines. The existing system functions directly, so that hot water reaches every heating appliance in the compound facilities. The existing boiler room has the following boilers:* steel heating low-temperature light heating oil boiler, produced by »VIESSMANN«, make TURBOMAT-R 2300, power 2300 kW, pieces 2;
* low-pressure steam bolier, produced by »VIESSMANN«, make PAROMAT ND, Q=1160 to 1325 Kw, piece 1.

The equipment for central preparation of heating pipeline for the entire compound is installed in “Foča” building. Water is partly heated with solar collectors placed on the facility roof and heat exchangers steam/water. Distribution of heating is done by underground pipeline reaching every facility. The design specifications and conceptual design foresee the construction of a new building which will include a biomass and heating oil bolier room. An inidrect connection of the facilities to the heating network is foreseen. In that case, the consumer takes the heating energy from the primary part of the heating network by way of a heat exchanger. This way, hydraulic work regime of the consumers and primary part of the network are completely separated which sigificantly simplifies the work of the entire system and increases its reliability; the facilities as consumers are protected from changes of hydraulic regime of the network primary part, while the network primary part is protected from breakdowns on the consumers (facilities) installations. A 90/70ºC temperature work regime of the heating network primary part is adopted. At the increase of outside temperature, the temperature of water goes down in the starting and returning line and at the same time,the difference between starting and returning water decreases and is relevant for the delivery of heating energy to consumers. Bearing in mind that the same starting line of primary network is connected with heating systems and sanitary water, at certain periods the water temperature in the starting line cannot go below 70ºC so that sanitary water can warm to the temperature of 65ºC, as required by the sanitary regulations. This is why at certain periods, the area of central regulation is limited to a certain outside temperature while at higher outside temperatures a quantity local regulation is done at heating stations. Installation of proper boilers for the preparation of heated water is planned to be made in every heating station. Heating of water will be possible by way of heating system heaters directly connected to the heating pipeline. **Boiler room**The boiler is planned to accommodate: Installation of two new biomass (wood chips) boilers (2x1,2MW) is planned for the boiler room, the existing heating oil boiler produced by »VIESSMANN«, make TURBOMAT-R 2300, power 2300 kW and the existing low-pressure steam boiler produced by »VIESSMANN«, make PAROMAT ND, Q=1160 to 1325 kW, which are now installed in the existing boiler room. Two biomass boilers (2x1,2MW) will serve as the basic source of heat while the heating oil boiler (2,3 MW) will be used as an alternative source of heat, or as peak source if needed. The boiler room facility is divided into three separate units:* an area to accommodate biomass with a primary and secondary warehouse along with supporting equipment for the delivery of biomass towards boilers;
* an area to accommodate two biomass boilers (2x1,2MW) along with supporting equipment (inter-silos for the delivery of biomass, 2 multi-cyclons, 2 bag filters, pressure automatic control system, water preparation system, ash cleaning conveyor ...);
* area to accommodate a boiler TURBOMAT-R 2300, power 2300 kW, low-pressure steam boiler of make PAROMAT ND, Q=1160 to 1325 kW, 2 storage batteries (2x30m3), expansion modulus, distributor and collector, circulation pumps and heating stations PS 7 for heating of the new biulding.

Equipment in the boiler room is connected to primary and secodnary circulation circle which together with heating pipeline distribution from the boiler room to heating stations and primary part of heating stations make a primary circle of heating system. Circulation in primary circles (boilers – heating storage batteries) will be done by a new frequency-regulated circulation pumps, one working and one reserve pump per each boiler. Water circulation in secondary circles (heat storage batteries – heating stations) will be done by frequency-regulated energy efficient circulation pumps per each arm (working + reserve for each of 4 arms). Installation of one new expansion modulus is foreseen, and transfer of the existing expansion modulus, make TG 2000.2 Transfer (Pneumatex), from the existing to a new boiler room along with elements for the maintenance of designated pressure in the system and addition of water into the system. Installation of an automatic device for water softening, of 4 m3/h softening capacity, is foreseen for the preparation of water in the entire system. The boiler room is connected to secondary and primary warehouse for biomass (wood chips). The primary warehouse dimensions are about 7x12 meters with a movable floor. The system consist of a series of mobile and immobile prisms which force biomass onto the conveyor belt. Their activation is hydraulic, and the system is controlled by PLC boiler based on the levl of biomass in the auxilliary silos which provides charging to both boilers. The conveyor belt is 16 meters long with electro motor activation. Biomass is delivered by the conveyor belt to the auxilliary silos. The auxilliary silos has the usage capacity of 25m3 made of steel tin and profile. A mobile arm of changing shape with electro motor activation is installed on the silos floor and it put biomass on the warm conveyor.**E-management and SCADA visualization**SCADA/PLC system is planned for the boiler room with 1TB data logging capacity. Capability of remote access and maintenance/after-sales support is required. Energy and management cabinet are separatly organized but they are connected with necessary signals into one unit. The plant should be monitored by SCADA in the control room computer. The equipment mentioned below is foreseen within the management and visualization part. The system is installed as a CS supervisory computer with a terminal. The system is seen on the screen of CNS computer. A simple click allows for every element in the basic picture to be representated in a sub-picture for the purpose of manipulation. All technological characteristics of elements and comments are taken over in the systematic scheme. For the purpose of more easy manipulation, special functions of group inclusion of elements is necessary. Installation of alarm function at three levels A, B and C is planned in the system. Depending on a type of error, the operator needs to reach the boiler in the time frame depending on the alarm level. Otherwise, the function of terminating the boiler will be on. CNS has a diagram for monitoring of technological parameters. Besides CNS system, there is also a terminal which can refer to parameters just like CNS. This is doubling of supervision / operators system when PC system is out of function. CNS is made on the basis of numerous efficient applications and it is favorable to make a change by a minimum numebr of operations such as with changes of activation regime or drastic change of fuel. The parts of the facility where CNS supervision cannot be carried out need to have video supervision system (primary and secondary warehouse for biomass, ash containers etc.) so that the operator can have an insight into the status of equipment at all times and so that he can timely notice any obstacles and problems.**HEAT DISTRIBUTION PIPELINE NETWORK**Pursuant to the design specifications, urban planning and technical requirements and in line with the regulations, a heating pipeline network is designed between the central boiler room and heating sub-stations in the facilities of Cantonal Hospital “dr Irfan Ljubijankić“ in Bihać. Three separate arms of heating pipeline from the central boiler room are foreseen, as follows:* arm 1 – DN100 for the facilities „KASINDOL“ and „ZARAZNO“/contagious diseases ward/
* arm 2 – DN125 for the facility „FOČA“
* arm 3 – DN 100 for the facilities „DIJALIZA“/dialisis/ i „PSIHIJATRIJA“/psychiatric ward/

designed temperature regime of the heating network:* water temperature in the starting/returning part of the pipeline: 90°C/70°C

The design prescribed steel pre insulated pipes according to ISO norms made of St.37 material according to EN253. The exterior protection pipe is made of hard polyetilen PEHD according to EN253, and heating insulation is of hard polyurethan foam according to DIN50049-3.1.b. Pipes are laid in the ground with a layer of sand in line with the producer’s recommendations about a safe laying of pipes. The producer’s instruction must be followed when assembling the delivered pipes. Installation of rubber rings to allow the pipeline through the wall must be planned for the entrance to manholes and facilities. Expansion of the pipeline is solved by self-expansion by way of installing expansion cushions made of mineral wool. A warning tape will be placed above the pipeline in the ground, at least 300 mm above the top edge of every pipe. **HEATING SUBSTATIONS– PRIMARY PART**For the purpose of heating the facilities in the compound of Cantonal Hospital *dr Irfan Ljubijankić* in Bihać, a heating substation will be installed in every facility which will be connected to the existing installations of radiator heating and hot water preparation. The following requirements are foreseen for the work of substations:* primary:
	+ working medium: hot water 90/70oC – supply from the central boiler room through heating pipeline network
	+ working pressure: 3 bars
* secondary:
	+ working medium: hot water 80/60oC
	+ working pressure: 2 bars

An alternating heating substation is planned as a source of heating energy to supply the facilities with heating as shown in graphs for each substation respectively. Primary part of the heating station is connected to the central heating network (90/70oC) by a pipeline of adequate diameter. For the purpose of adjusting a flow of primary side hot water and sliding conduction of the initial hot water temperature of the secondary in relation to the exterior temperature, a regulation circuit of automation with an electric motor regulatory valve, microprocessor steering unit and proper exterior temperature sensors and liquid sensors is selected. For the purpose of supplying the sub-station, regulation of the necessary flow at the primary side of the heating system pipeline is done via balancing valve NO 65 NP16 with sockets where a differential manometer can be connected for the purpose of reading and adjusting the flow. A pipe network in the heating sub-station is made of black steel seamless pipes. Suspension of the pipeline is cantilever and suspension droppers in order to prevent the pipeline and working medium to exert any load on the equipment by their weight. All transition pieces of the pipeline due to section changes will be done by proper concentric diminishing pieces. The connection of branches will be made by cut half-elbows. Jointing of the pipeline will be done by welding in the TIG, REL or AGV procedure.Working reinforcement (spherical taps, impurity catchers, cover flaps) is foreseen for nominal pressures NP16. The entire reinforcement is in the flange joint and foreseen to work up to 120oC temperature in the primary and secondary part. Sealing will be done by Klinger gaskets of appropriate thickness (2 to 3 mm). The pressure control will be done by installed manometers Ø100, R 1/2“with a +/- 0,1 bar precision. Manometers are connected according to the scheme for reading of a pressure at characteristic sections of the network. This allows for a proper keeping and monitoring of obstructions in the work of the system caused by dirty equipment (impurity catchers, alternator and the like). For the purpose of measuring the temperature at the characteristic sections of the installation, thermometers are installed in a yellow brass sleeve R1/2“with the measurement range from 0 to 120oC. The entire pipeline in the sub-station (primary and part of the secondary part to the distributor) is insulated by 40 mm thick mineral wool in 0,7 mm thick aluminum sheet lining. The existing pipeline with the distributor and collector is not insulated at this stage of works.The issue of water expansion as a result of heating and protection of the system from exceeding the pressure is solved by some closed membrane expansion vessels. The alternator and part of the equipment are protected by safety valves adjusted to the opening pressure of 3 bars. This design prescribed joining of the secondary side of alternating station with the existing heat distributor and collector in the area of substation. The entire distributor network of the facility secondary along with the entire supporting equipment (distributor, collector, circulation pumps, measurement, regulatory and lock gate reinforcement, and supporting pipelines) is not subject to this design and so the existing one will be kept. **NOTE:**Technical drawings are available at:  <http://documents.undp.ba/procurement/BIH-ITP-001-16-Drawings.zip>ANNEX IIIGENERAL CONDITIONS OF CONTRACT FOR CIVIL WORKS 1. Definitions  2. Singular and Plural  3. Headings or Notes  4. Legal Relationships  5. General Duties/Powers of Engineer  6. Contractor's General Obligations/Responsibilities  7. Assignment and Subcontracting  8. Drawings  9. Work Book  10. Performance Security  11. Inspection of Site  12. Sufficiency of Tender  13. Programme of Work to be Furnished  14. Weekly Site Meeting  15. Change Orders  16. Contractor's Superintendence  17. Contractor's Employees  18. Setting-Out  19. Watching and Lighting  20. Care of Works  21. Insurance of Works, Etc.  22. Damage to Persons and Property  23. Liability Insurance  24. Accident or Injury to Workmen  25. Remedy on Contractor's Failure to Insure  26. Compliance with Statutes, Regulations, Etc.  27. Fossils, Etc.  28. Copyright, Patents and Other Proprietary Rights, and Royalties  29. Interference With Traffic and Adjoining Properties  30. Extraordinary Traffic and Special Loads  31. Opportunities for Other Contractors  32. Contractor to Keep Site Clean  33. Clearance of Site on Substantial Completion  34. Labour  35. Returns of Labour, Plant, Etc.  36. Materials, Workmanship and Testing  37. Access to Site  38. Examination of Work Before Covering Up  39. Removal of Improper Work and Materials  40. Suspension of Work  41. Possession of Site  42. Time for Completion  43. Extension of Time for Completion  44. Rate of Progress  45. Liquidated Damages for Delay  46. Certificate of Substantial Completion  47. Defects Liability  48. Alterations, Additions and Omissions  49. Plant, Temporary Works and Materials  50. Approval of Materials, Etc., Not Implied  51. Measurement of Works  52. Liability of the Parties  53. Authorities  54. Urgent Repairs  55. Increase and Decrease of Costs  56. Taxation  57. Blasting  58. Machinery  59. Temporary Works and Reinstatement  60. Photographs and Advertising  61. Prevention of Corruption  62. Date Falling on Holiday  63. Notices  64. Language, Weights and Measures  65. Records, Accounts, Information and Audit  66. Force Majeure  67. Suspension by the UNDP  68. Termination by the UNDP  69. Termination by the Contractor  70. Rights and Remedies of the UNDP  71. Settlement of Disputes  72. Privileges and Immunities  Appendix I: Formats of Performance Security  Performance Bank Guarantee  Performance Bond  **DEFINITIONS** For the purpose of the Contract Documents the words and expressions below shall have the following meanings: 1. "Employer" means the United Nations Development Programme (UNDP).
2. "Contractor" means the person whose tender has been accepted and with whom the Contract has been entered into.
3. "Engineer" means the person whose services have been engaged by UNDP to administer the Contract as provided therein, as will be notified in writing to the Contractor.
4. "Contract" means the written agreement between the Employer and the Contractor, to which these General Conditions are annexed.
5. "The Works" means the works to be executed and completed under the Contract.
6. "Temporary Works" shall include items to be constructed which are not intended to be permanent and form part of the Works.
7. "Drawings" and "Specifications" mean the Drawings and Specifications referred to in the Contract and any modification thereof or addition thereto furnished by the Engineer or submitted by the Contractor and approved in writing by the Engineer in accordance with the Contract.
8. "Bill of Quantities" is the document in which the Contractor indicates the cost of the Works, on the basis of the foreseen quantities of items of work and the fixed unit prices applicable to them.
9. "Contract Price" means the sum agreed in the Contract as payable to the Contractor for the execution and completion of the Works and for remedying of any defects therein in accordance with the Contract.
10. "Site" means the land and other places on, under, in or through which the Works or Temporary Works are to be constructed.

**SINGULAR AND PLURAL** Words importing persons or parties shall include firms or companies and words importing the singular only shall also include the plural and vice versa where the context requires. **HEADINGS OR NOTES** The headings or notes in the Contract Documents shall not be deemed to be part thereof or be taken into consideration in their interpretation. **LEGAL RELATIONSHIPS** The Contractor and the sub-contractor(s), if any, shall have the status of an independent contractor vis-à-vis the Employer. The Contract Documents shall not be construed to create any contractual relationship of any kind between the Engineer and the Contractor, but the Engineer shall, in the exercise of his duties and powers under the Contract, be entitled to performance by the Contractor of its obligations, and to enforcement thereof. Nothing contained in the Contract Documents shall create any contractual relationship between the Employer or the Engineer and any subcontractor(s) of the Contractor. **GENERAL DUTIES/POWERS OF ENGINEER** 1. The Engineer shall provide administration of Contract as provided in the Contract Documents. In particular, he shall perform the functions hereinafter described.
2. The Engineer shall be the Employer's representative vis-à-vis the Contractor during construction and until final payment is due. The Engineer shall advise and consult with the Employer. The Employer's instructions to the Contractor shall be forwarded through the Engineer. The Engineer shall have authority to act on behalf of the Employer only to the extent provided in the Contract Documents as they may be amended in writing in accordance with the Contract. The duties, responsibilities and limitations of authority of the Engineer as the Employer's representative during construction as set forth in the Contract shall not be modified or extended without the written consent of the Employer, the Contractor and the Engineer.
3. The Engineer shall visit the Site at intervals appropriate to the stage of construction to familiarize himself generally with the progress and quality of the Works and to determine in general if the Works are proceeding in accordance with the Contract Documents. On the basis of his on-site observations as an Engineer, he shall keep the Employer informed of the progress of the Works.
4. The Engineer shall not be responsible for and will not have control or charge of construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Works or the Temporary Works. The Engineer shall not be responsible for or have control or charge over the acts or omissions of the Contractor (including the Contractor's failure to carry out the Works in accordance with the Contract) and of Sub-contractors or any of their agents or employees, or any other persons performing services for the Works, except if such acts or omissions are caused by the Engineer's failure to perform his functions in accordance with the contract between the Employer and the Engineer.
5. The Engineer shall at all times have access to the Works wherever and whether in preparation or progress. The Contractor shall provide facilities for such access so that the Engineer may perform his functions under the Contract.
6. Based on the Engineer's observations and an evaluation of the documentation submitted by the Contractor together with the invoices, the Engineer shall determine the amounts owed to the Contractor and shall issue Certificates for Payment as appropriate.
7. The Engineer shall review and approve or take other appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for conformity with the design concept of the Works and with the provisions of the Contract Documents. Such action shall be taken with reasonable promptness so as to cause no delay. The Engineer's approval of a specific item shall not indicate approval of an assembly of which the item is a component.
8. The Engineer shall interpret the requirements of the Contract Documents and judge the performance thereunder by the Contractor. All interpretations and orders of the Engineer shall be consistent with the intent of and reasonably inferable from the Contract Documents and shall be in writing or in the form of drawings. Either party may make a written request to the Engineer for such interpretation. The Engineer shall render the interpretation necessary for the proper execution of the Works with reasonable promptness and in accordance with any time limit agreed upon. Any claim or dispute arising from the interpretation of the Contract Documents by the Engineer or relating to the execution or progress of the Works shall be settled as provided in Clause 71 of these General Conditions.
9. Except as otherwise provided in the Contract, the Engineer shall have no authority to relieve the Contractor of any of his obligations under the Contract nor to order any work involving delay in completion of the Works or any extra payment to the Contractor by the Employer, or to make any variations to the Works.
10. In the event of termination of the employment of the Engineer, the Employer shall appoint another suitable professional to perform the Engineer's duties.
11. The Engineer shall have authority to reject work which does not conform to the Contract Documents. Whenever, in his opinion, he considers it necessary or advisable for the implementation of the intent of the Contract Documents, he will have authority to require special inspection or testing of the work whether or not such work be then fabricated, installed or completed. However, neither the Engineer's authority to act nor any reasonable decision made by him in good faith either to exercise or not to exercise such authority shall give rise to any duty or responsibility of the Engineer to the Contractor, any subcontractor, any of their agents or employees, or any other person performing services for the Works.
12. The Engineer shall conduct inspections to determine the dates of Substantial Completion and Final Completion, shall receive and forward to the Employer for the Employer's review written warranties and related documents required by the Contract and assembled by the Contractor, and shall issue a final Certificate for Payment upon compliance with the requirements of Clause 47 hereof and in accordance with the Contract.
13. If the Employer and Engineer so agree, the Engineer shall provide one or more Engineer's Representative(s) to assist the Engineer in carrying out his responsibilities at the site. The Engineer shall notify in writing to the Contractor and the Employer the duties, responsibilities and limitations of authority of any such Engineer's Representative(s).

**CONTRACTOR'S GENERAL OBLIGATIONS/RESPONSIBILITIES** 1. **Obligation to Perform in Accordance with Contract**

The Contractor shall execute and complete the Works and remedy any defects therein in strict accordance with the Contract, with due care and diligence and to the satisfaction of the Engineer, and shall provide all labor, including the supervision thereof, materials, Constructional Plant and all other things, whether of a temporary or permanent nature, required in and for such execution, completion and remedying of defects, as far as the necessity for providing the same is specified in or is reasonably to be inferred from the Contract. The Contractor shall comply with and adhere strictly to the Engineer's instructions and directions on any matter, touching or concerning the Works. **6.2 Responsibility for Site Operations** The Contractor shall take full responsibility for the adequacy, stability and safety of all site operations and methods of construction, provided that the Contractor shall not be responsible, except as may be expressly provided in the Contract, for the design or specification of the Permanent Works or of any Temporary Works prepared by the Engineer. 1. **Responsibility for Employees**

The Contractor shall be responsible for the professional and technical competence of his employees and will select for work under this Contract, reliable individuals who will perform effectively in the implementation of the Contract, respect local customs and conform to a high standard of moral and ethical conduct. 1. **Source of Instructions**

The Contractor shall neither seek nor accept instructions from any authority external to the Employer, the Engineer or their authorized representatives in connection with the performance of his services under this Contract. The Contractor shall refrain from any action which may adversely affect the Employer and shall fulfill his commitments with fullest regard for the interest of the Employer. 1. **Officials Not to Benefit**

The Contractor warrants that no official of the Employer has been or shall be admitted by the Contractor to any direct or indirect benefit arising from this Contract or the award thereof. The Contractor agrees that breach of this provision is a breach of an essential term of the Contract.1. **Use of Name, Emblem or Official Seal of UNDP or the United Nations**

The Contractor shall not advertise or otherwise make public the fact that he is performing, or has performed services for the Employer or use the name, emblem or official seal of the Employer or the United Nations or any abbreviation of the name of the Employer or the United Nations for advertising purposes or any other purposes.1. **Confidential Nature of Documents**

All maps, drawings, photographs, mosaics, plans, reports, recommendations, estimates, documents and all other data compiled by or received by the Contractor under the Contract shall be the property of the Employer, shall be treated as confidential and shall be delivered only to the duly authorized representative of the Employer on completion of the Works; their contents shall not be made known by the Contractor to any person other than the personnel of the Contractor performing services under this Contract without the prior written consent of the Employer. **ASSIGNMENT AND SUBCONTRACTING** 1. Assignment of Contract

The Contractor shall not, except after obtaining the prior written approval of the Employer, assign, transfer, pledge or make other disposition of the Contract or any part thereof or of any of the Contractor's rights, claims or obligations under the Contract. 1. **Subcontracting**

In the event the Contractor requires the services of subcontractors, the Contractor shall obtain the prior written approval of the Employer for all such subcontractors. The approval of the Employer shall not relieve the Contractor of any of his obligations under the Contract, and the terms of any subcontract shall be subject toand be in conformity with the provisions of the Contract. 1. **Assignment of Subcontractor's Obligations**

In the event of a subcontractor having undertaken towards the Contractor in respect of the work executed or the goods, materials, Plant or services supplied by such subcontractor for the Works, any continuing obligation extending for a period exceeding that of the Defects Liability Period under the Contract, the Contractor shall at any time after the expiration of such Period, assign to the Employer, at the Employer's request and cost, the benefit of such obligation for the unexpired duration thereof. **DRAWINGS** 1. **Custody of drawings**

The drawings shall remain in the sole custody of the Employer but two (2) copies thereof shall be furnished to the Contractor free of cost. The Contractor shall provide and make at his own expense any further copies required by him. At the completion of the Works, the Contractor shall return to the Employer all drawings provided under the Contract. 1. **One copy of Drawings to be kept on Site**

One copy of the Drawings furnished to the Contractor as aforesaid shall be kept by the Contractor on the Site and the same shall at all reasonable times be available for inspection and use by the Engineer and by any other person authorized in writing by the Engineer. 1. **Disruption of Progress**

The Contractor shall give written notice to the Engineer whenever planning or progress of the Works is likely to be delayed or disrupted unless any further drawing or order, including a direction, instruction or approval, is issued by the Engineer within a reasonable time. The notice shall include details of drawing or order required and of why and by when it is required and of any delay or disruption likely to be suffered if it is late. **WORK BOOK** The Contractor shall maintain a Work Book at the Site with numbered pages, in one original and two copies. The Engineer shall have full authority to issue new orders, drawings and instructions to the Contractor, from time to time and as required for the correct execution of the Works. The Contractor shall be bound to follow such orders, drawings and instructions. Every order shall be dated and signed by the Engineer and the Contractor, in order to account for its receipt. Should the Contractor want to refuse an order in the Work Book, he shall so inform the Employer, through the Engineer, by means of an annotation in the Work Book made within three (3) days from the date of the order that the Contractor intends to refuse. Failure by the Contractor to adhere to this procedure shall result in the order being deemed accepted with no further possibility of refusal. The original of the Work Book shall be delivered to the Employer at the time of Final Acceptance of the Works. A copy shall be kept by the Engineer and another copy by the Contractor. **PERFORMANCE SECURITY** 1. As guarantee for his proper and efficient performance of the Contract, the Contractor shall on signature of the Contract furnish the Employer with a Performance Security issued for the benefit of the Employer. The amount and character of such security (bond or guarantee) shall be as indicated in the Contract.
2. The Performance Bond or Bank Guarantee must be issued by an acceptable insurance company or accredited bank, in the format included in Appendix I to these General Conditions, and must be valid up to twenty-eight days after issuance by the Engineer of the Certificate of Final Completion. The Performance Bond or Bank Guarantee shall be returned to the Contractor within twenty-eight days after the issuance by the Engineer of the Certificate of Final Completion, provided that the Contractor shall have paid all money owed to the Employer under the Contract.
3. If the surety of the Performance Bond or Bank Guarantee is declared bankrupt or becomes insolvent or its right to do business in the country of execution of the Works is terminated, the Contractor shall within five (5) days thereafter substitute another bond or guarantee and surety, both of which must be acceptable to the Employer.

**INSPECTION OF SITE** The Contractor shall be deemed to have inspected and examined the site and its surroundings and to have satisfied himself before submitting his Tender and signing the Contract as to all matters relative to the nature of the land and subsoil, the form and nature of the Site, details and levels of existing pipe lines, conduits, sewers, drains, cables or other existing services, the quantities and nature of the work and materials necessary for the completion of the Works, the means of access to the Site, and the accommodation he may require, and in general to have himself obtained all necessary information as to risk contingencies, climatic, hydrological and natural conditions and other circumstances which may influence or affect his Tender, and no claims will be entertained in this connection against the Employer. **SUFFICIENCY OF TENDER** The Contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his Tender for the construction of the Works and of the rates and prices, which rates and prices shall, except in so far as it is otherwise provided in the Contract, cover all his obligations under the Contract and all matters and things necessary for the proper execution and completion of the Works. **PROGRAMME OF WORK TO BE FURNISHED** Within the time limit specified in the Contract, the Contractor shall submit to the Engineer for his consent a detailed Programme of Work showing the order of procedure and the method in which he proposes to carry out the Works. In preparing his Programme of Work the Contractor shall pay due regard to the priority required by certain works. Should the Engineer, during the progress of work, require further modifications to the Programme of Work, the Contractor shall review the said program. The Contractor shall also whenever required by the Engineer submit particulars in writing of the Contractor's arrangements for carrying out the Works and of the Constructional Plant and Temporary Works which the Contractor intends to supply, use or construct as the case may be. The submission of such program, or any modifications thereto, or the particulars required by the Engineer, shall not relieve the Contractor of any of his duties or obligations under the Contract nor shall the incorporation of any modification to the Programme of Work either at the commencement of the contract or during its course entitle the Contractor to any additional payments in consequence thereof. **WEEKLY SITE MEETING** A weekly site meeting shall be held between the UNDP Project Coordinator or engineer, if any, the representative of the Contractor and the Engineer or the Engineer's Representative, in order to verify that the Works are progressing normally and are executed in accordance with the Contract. **CHANGE ORDERS** 1. The Engineer may instruct the Contractor, with the approval of the Employer and by means of Change Orders, all variations in quantity or quality of the Works, in whole or in part, that are deemed necessary by the Engineer.
2. Processing of change orders shall be governed by clause 48 of these General Conditions.

**CONTRACTOR'S SUPERINTENDENCE** The Contractor shall provide all necessary superintendence during the execution of the Works and as long thereafter as the Engineer may consider necessary for the proper fulfillment of the Contractor's obligations under the Contract. The Contractor or a competent and authorized agent or representative of the Contractor approved in writing by the Engineer, which approval may at any time be withdrawn, shall be constantly on the site and shall devote his entire time to the superintendence of the Works. Such authorized agent or representative shall receive on behalf of the Contractor directions and instructions from the Engineer. If the approval of such agent or representative shall be withdrawn by the Engineer, as provided in Clause 17(2) hereinafter, or if the removal of such agent or representative shall be requested by the Employer under Clause 17(3) hereinafter, the Contractor shall as soon as it is practicable after receiving notice of such withdrawal remove the agent or representative from the Site, and replace him by another agent or representative approved by the Engineer. Notwithstanding the provision of Clause 17(2) hereinafter, the Contractor shall not thereafter employ, in any capacity whatsoever, a removed agent or representative again on the Site. **CONTRACTOR'S EMPLOYEES** 1. The Contractor shall provide and employ on the Site in connection with the execution and completion of the Works and the remedying of any defects therein:
2. Only such technical assistants as are skilled and experienced in their respective callings and such sub-agent foremen and leading hands as are competent to give proper supervision to the work they are required to supervise, and
3. Such skilled, semi-skilled, and unskilled labour as is necessary for the proper and timely execution and completion of the Works.
4. The Engineer shall be at liberty to object to and require the Contractor to remove forthwith from the Works any person employed by the Contractor in or about the execution or completion of the Works, who in the opinion of the Engineer is misconducting himself, or is incompetent or negligent in the proper performance of his duties, or whose employment is otherwise considered reasonably by the Engineer to be undesirable, and such person shall not be again employed on the Site without the written permission of the Engineer. Any person so removed from the Works shall be replaced as soon as reasonably possible by a competent substitute approved by the Engineer.
5. Upon written request by the Employer, the Contractor shall withdraw or replace from the Site any agent, representative or other personnel who does not conform to the standards set forth in paragraph (1) of this Clause. Such request for withdrawal or replacement shall not be considered as termination in part or in whole of this Contract. All costs and additional expenses resulting from any withdrawal or replacement for whatever reason of any of the Contractor's personnel shall be at the Contractor's expense.

**SETTING-OUT** The Contractor shall be responsible for the true and proper setting out of the Works in relation to original points, lines and levels of reference given by the Engineer in writing and for the correctness of the position, levels, dimensions and alignment of all parts of the Works and for the provision of all necessary instruments, appliances and labor in connection therewith. If, at any time during the progress of the Works, any error shall appear or arise in the position, levels, dimensions or alignment of any part of the Works, the Contractor, on being required so to do by the Engineer, shall, at his own cost, rectify such error to the satisfaction of the Engineer. **WATCHING AND LIGHTING** The Contractor shall in connection with the Works provide and maintain at his own cost all lights, guards, fencing and watching when and where necessary or required by the Engineer or by any duly constituted authority for the protection of the Works and the materials and equipment utilized therefor or for the safety and convenience of the public or others. **CARE OF WORKS** 1. From the commencement date of the Works to the date of substantial completion as stated in the Certificate of Substantial Completion, the Contractor shall take full responsibility for the care thereof and of all Temporary Works. In the event that any damage or loss should happen to the Works or to any part thereof or to any Temporary Works from any cause whatsoever (save and except as shall be due to Force Majeure as defined in Clause 66 of these General Conditions), the Contractor shall at his own cost repair and make good the same so that, at completion, the Works shall be in good order and condition and in conformity in every respect with the requirements of the Contract and the Engineer's instructions. The Contractor shall also be liable for any damage to the Works occasioned by him in the course of any operations carried out by him for the purpose of complying with his obligations Clause 47 hereof.
2. The Contractor shall be fully responsible for the review of the Engineering design and details of the Works and shall inform the Employer of any mistakes or incorrectness in such design and details which would affect the Works.

**INSURANCE OF WORKS, ETC.** Without limiting his obligations and responsibilities under Clause 20 hereof, the Contractor shall insure immediately following signature of this Contract, in the joint names of the Employer and the Contractor (a) for the period stipulated in Clause 20(1) hereof, against all loss or damage from whatever cause arising, other than cause of Force majeure as defined in clause 66 of these General Conditions, and (b) against loss or damage for which the Contractor is responsible, in such manner that the Employer and the Contractor are covered for the period stipulated in Clause 20 (1) hereof and are also covered during the Defects Liability Period for loss or damage arising from a cause occurring prior to the commencement of the Defects Liability Period and for any loss or damage occasioned by the Contractor in the course of any operations carried out by him for the purpose of complying with his obligations under Clause 47 hereof: 1. The Works, together with the materials and Plant for incorporation therein, to their full replacement cost, plus an additional sum of ten (10) per cent of such replacement cost, to cover any additional costs of and incidental to the rectification of loss or damage including professional fees and the cost of demolishing and removing any part of the Works and of removing debris of whatsoever nature;
2. The Contractor's equipment and other things brought on to the Site by the Contractor to the replacement value of such equipment and other things;
3. An insurance to cover the liabilities and warranties of Section 52(4);

Such insurance shall be effected with an insurer and in terms approved by the Employer, which approval shall not be unreasonably withheld, and the Contractor shall, whenever required, produce to the Engineer the policy or policies of insurance and the receipts for payment of the current premiums. **DAMAGE TO PERSONS AND PROPERTY** The Contractor shall (except if and so far as the Contract provides otherwise) indemnify, hold and save harmless and defend at his own expense the Employer, its officers, agents, employees and servants from and against all suits, claims, demands, proceedings, and liability of any nature or kind, including costs and expenses, for injuries or damages to any person or any property whatsoever which may arise out of or in consequence of acts or omissions of the Contractor or its agents, employees, servants or subcontractors in the execution of the Contract. The provision of this Clause shall extend to suits, claims, demands, proceedings and liability in the nature of workmen's compensation claims and arising out of the use of patented inventions and devices. Provided always that nothing herein contained shall be deemed to render the Contractor liable for or in respect of or with respect to: 1. The permanent use or occupation of land by the Works or any part thereof;
2. The right of the Employer to construct the Works or any part thereof on, over, under, or through any land.
3. Interference whether temporary or permanent with any right of light, airway or water or other easement or quasi-easement which is the unavoidable result of the construction of the Works in accordance with the Contract.
4. Death, injuries or damage to persons or property resulting from any act or neglect of the Employer, his agents, servants or other contractors, done or committed during the validity of the Contract.

**LIABILITY INSURANCE** 1. **Obligation to take out Liability Insurance**

Before commencing the execution of the Works, but without limiting his obligations and responsibility under Clause 20 hereof, the Contractor shall insure against his liability for any death, material or physical damage, loss or injury which may occur to any property, including that of the Employer or to any person, including any employee of the Employer by or arising out of the execution of the Works or in the carrying out of the Contract, other than due to the matters referred to in the proviso to Clause 22 hereof. 1. **Minimum Amount of Liability Insurance**

Such insurance shall be effected with an insurer and in terms approved by the Employer, which approval shall not be unreasonably withheld, and for at least the amount specified in the contract. The Contractor shall, whenever required by the Employer or the Engineer, produce to the Engineer the policy or policies of insurance and the receipts for payment of the current premiums. 1. **Provision to Indemnify Employer**

The insurance policy shall include a provision whereby, in the event of any claim in respect of which the Contractor would be entitled to receive indemnity under the policy, being brought or made against the Employer, the insurer shall indemnify the Employer against such claims and any costs, charges and expenses in respect thereof. **ACCIDENT OR INJURY TO WORKMEN** 1. The Employer shall not be liable for or in respect of any damages or compensation payable at law in respect or in consequence of any accident or injury to any workman or other person in the employment of the Contractor or any sub-Contractor, save and except an accident or injury resulting from any act or default of the Employer, his agents or servants. The Contractor shall indemnify, hold and save harmless the Employer against all such damages and compensation, save and except as aforesaid, and against all claims, proceedings, costs, charges and expenses whatsoever in respect thereof or in relation thereto.
2. Insurance Against Accident, etc., to Workmen

The Contractor shall insure against such liability with an insurer approved by the Employer, which approval shall not be unreasonably withheld, and shall continue such insurance during the whole of the time that any persons are employed by him for the Works and shall, when required, produce to the Engineer such policy of insurance and the receipt for payment of the current premium. Provided always that, in respect of any persons employed by any subcontractor, the Contractor's obligation to insure as aforesaid under this sub-clause shall be satisfied if the subcontractor shall have insured against the liability in respect of such persons in such manner that the Employer is indemnified under the policy but the Contractor shall require such subcontractor to produce to the Engineer when required such policy of insurance and the receipt for the current premium, and obtain the insertion of a provision to that effect in its contract with the subcontractor. **REMEDY ON CONTRACTOR'S FAILURE TO INSURE** If the Contractor shall fail to effect and keep in force any of the insurances referred to in Clauses 21, 23 and 24 hereof, or any other insurance which he may be required to effect under the terms of the Contract, the Employer may in any such case effect and keep in force any such insurance and pay such premium as may be necessary for that purpose and from time to time deduct the amount so paid by the Employer as aforesaid from any monies due or which may become due to the Contractor, or recover the same as a debt due from the Contractor. **COMPLIANCE WITH STATUTES, REGULATIONS, ETC.** 1. The Contractor shall give all notices and pay all fees and charges required to be given or paid by any national or State Statutes, Ordinances, Laws, Regulations or By-laws, or any local or other duly constituted authority in relation to the execution of the Works or of any Temporary Works and by the Rules and Regulations of all public bodies and companies whose property or rights are affected or may be affected in any way by the Works or any Temporary Works.
2. The Contractor shall conform in all respects with any such Statutes, Ordinances, Laws, Regulations, By-laws or requirements of any such local or other authority which may be applicable to the Works and shall keep the Employer indemnified against all penalties and liabilities of every kind for breach of any such Statutes, Ordinances, Laws, Regulations, By-laws or requirements.
3. **FOSSILS, ETC.**

All fossils, coins, articles of value or antiquity and structures and other remains or things of geological or archaeological interest discovered on the Site of the Works shall as between the Employer and the Contractor be deemed to be the absolute property of the Employer and the Contractor shall take reasonable precautions to prevent his workmen or any other persons from removing or damaging any such article or thing and shall immediately upon discovery thereof and before removal acquaint the Employer of such discovery and carry out at the expense of the Employer the Engineer's orders as to the disposal of the same. 1. **COPYRIGHT, PATENT AND OTHER PROPRIETARY RIGHTS, AND ROYALTIES**
2. The Contractor shall hold harmless and fully indemnify the Employer from and against all claims and proceedings for or on account of infringement of any patent rights, design trademark or name or other protected rights in respect of any Plant, equipment, machine, work or material used for or in connection with the Works or Temporary Works and from and against all claims, demands proceedings, damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto, except where such infringement results from compliance with the design or Specification provided by the Engineer.
3. Except where otherwise specified, the Contractor shall pay all tonnage and other royalties, rent and other payments or compensation, if any, for getting stone, sand, gravel, clay or other materials required for the Works or Temporary Works.
4. **INTERFERENCE WITH TRAFFIC AND ADJOINING PROPERTIES**

All operations necessary for the execution of the Works and for the Construction of any Temporary Works shall, so far as compliance with the requirements of the Contract permits, be carried on so as not to interfere unnecessarily or improperly with the public convenience, or the access to, use and occupation of, public or private roads and footpaths to or of properties whether in the possession of the Employer or of any other person. The Contractor shall hold harmless and indemnify the Employer in respect of all claims, demands, proceedings, damages, costs, charges and expenses whatsoever arising out of or in relation to any such matters in so far as the Contractor is responsible therefore. 1. **EXTRAORDINARY TRAFFIC AND SPECIAL LOADS**
2. The Contractor shall use every reasonable means to prevent any of the roads or bridges communicating with or on the routes to the Site from being damaged by any traffic of the Contractor or any of his sub-contractors and, in particular, shall select routes, choose and use vehicles and restrict and distribute loads so that any such extraordinary traffic as will inevitably arise from the moving of plant and material from and to the Site shall be limited as far as reasonably possible and so that no unnecessary damage may be occasioned to such roads and bridges.
3. Should it be found necessary for the Contractor to move any load of Constructional Plant, machinery, preconstructed units or parts of units of work, or other thing, over part of a road or bridge, the moving whereof is likely to damage any such road or bridge unless special protection or strengthening is carried out, then the Contractor shall before moving the load on to such road or bridge, save insofar as the Contract otherwise provide, be responsible for and shall pay for the cost of strengthening any such bridge or altering or improving any such road to avoid such damage, and the Contractor shall indemnify and keep the Employer indemnified against all claims for damage to any such road or bridge caused by such movement, including such claim as may be made directly against the Employer, and shall negotiate and pay all claims arising solely out of such damage.
4. **OPPORTUNITIES FOR OTHER CONTRACTORS**

The Contractor shall in accordance with the requirements of the Engineer afford all reasonable opportunities for carrying out their work to any other contractors employed by the Employer and their workmen and to the workmen of the Employer and of any other duly constituted authorities who may be employed in the execution on or near the Site of any work not included in the Contract or of any contract which the Employer may enter into in connection with or ancillary to the Works. If work by other contractors of the Employer as above-mentioned involves the Contractor in any direct expenses as a result of using his Site facilities, the Employer shall consider payment to the Contractor of such sum or sums as may be recommended by the Engineer. 1. **CONTRACTOR TO KEEP SITE CLEAN**

During the progress of the Works, the Contractor shall keep the Site reasonably free from all unnecessary obstruction and shall store or dispose of any Constructional Plant and surplus materials and clear away and remove from the Site any wreckage, rubbish or Temporary Works no longer required. 1. **CLEARANCE OF SITE ON SUBSTANTIAL COMPLETION**

On the substantial completion of the Works, the Contractor shall clear away and remove from the Site all Constructional Plant surplus materials, rubbish and Temporary Works of every kind and leave the whole of the Site and Works clean and in a workmanlike condition to the satisfaction of the Engineer. 1. **LABOUR**
2. **Engagement of Labour**

The Contractor shall make his own arrangements for the engagement of all labour local or otherwise. 1. **Supply of Water**

The Contractor shall provide on the Site to the satisfaction of the Engineer an adequate supply of drinking and other water for the use of the Contractor's staff and work people. 1. **Alcoholic Drinks or Drugs**

The Contractor shall comply with Government laws and regulations and orders in force as regards the import, sale, barter or disposal of alcoholic drinks or narcotics and he shall not allow or facilitate such importation, sale, gift, barter or disposal by his sub-contractors, agents or employees. 1. **Arms and Ammunition**

The restrictions specified in clause 34.3 above shall include all kinds of arms and ammunition. 1. **Holiday and Religious Customs**

The Contractor shall in all dealings with labour in his employ have due regard to all holiday, recognized festivals and religious or other customs. 1. **Epidemics**

In the event of any outbreak of illness of an epidemic nature the Contractor shall comply with and carry out such regulations, orders, and requirements as may be made by the Government or the local medical or sanitary authorities for the purpose of dealing with and overcoming the same. 1. **Disorderly Conduct, etc.**

The Contractor shall at all times take all reasonable precautions to prevent any unlawful riotous or disorderly conduct by or amongst his employees and for the preservation of peace and the protection of persons and property in the neighborhood of the Works against the same. 1. **Observance by Sub-Contractors**

The Contractor shall be considered responsible for the observance of the above provisions by his Sub-Contractors. 1. **Legislation applicable to Labour**

The Contractor shall abide by all applicable legislation and regulation with regard to labour. **RETURNS OF LABOUR, PLANT, ETC.** The Contractor shall, if required by the Engineer, deliver to the Engineer at his office, a return in detail in the form and at such intervals as the Engineer may prescribe showing the supervisory staff and the numbers of the several classes of labour from time to time employed by the Contractor on the Site and such information respecting Constructional plant as the Engineer may require. MATERIALS, WORKMANSHIP AND TESTING 1. **Materials and Workmanship**
2. All materials and workmanship shall be of the respective kinds described in the Contract and in accordance with the Engineer's instructions and shall be subjected from time to time to such tests as the Engineer may direct at the place of manufacture or fabrication, or on the Site or at all or any of such places. The Contractor shall provide such assistance, instruments, machines, labour and materials as are normally required for examining, measuring and testing any work and the quality, weight or quantity of any materials used and shall supply samples of materials before incorporation in the Works for testing as may be selected and required by the Engineer. All testing equipment and instruments provided by the Contractor shall be used only by the Engineer or by the Contractor in accordance with the instructions of the Engineer.
3. No material not conforming with the Specifications in the Contract may be used for the Works without prior written approval of the Employer and instruction of the Engineer, provided always that if the use of such material results or may result in increasing the Contract Price, the procedure in Clause 48 shall apply.
4. **Cost of Samples**

All samples shall be supplied by the Contractor at his own cost unless the supply thereof is clearly intended in the Specifications or Bill of Quantities to be at the cost of the Employer. Payment will not be made for samples which do not comply with the Specifications. 1. **Cost of Tests**

The Contractor shall bear the costs of any of the following tests: 1. Those clearly intended by or provided for in the Contract Documents.
2. Those involving load testing or tests to ensure that the design of the whole of the Works or any part of the Works is appropriate for the purpose which it was intended to fulfill.

ACCESS TO SITE The Employer and the Engineer and any persons authorized by either of them shall, at all times, have access to the Works and to the Site and to all workshops and places where work is being prepared or whence materials, manufactured articles or machinery are being obtained for the Works and the Contractor shall afford every facility for and every assistance in or in obtaining the right to such access. EXAMINATION OF WORK BEFORE COVERING UP No work shall be covered up or put out of view without the approval of the Engineer and the Contractor shall afford full opportunity for the Engineer to examine and measure any work which is about to be covered up or put out of view and to examine foundations before permanent work is placed thereon. The Contractor shall give due notice to the Engineer whenever any such work or foundations is or are ready or about to be ready for examination and the Engineer shall without unreasonable delay unless he considers it unnecessary and advises the Contractor accordingly attend for the purpose of examining and measuring such work or of examining such foundations. REMOVAL OF IMPROPER WORK AND MATERIALS 1. **Engineer's power to order removal**

The Engineer shall during the progress of the Works have power to order in writing from time to time, and the Contractor shall execute at his cost and expense, the following operations: 1. The removal from the Site within such time or times as may be specified in the order of any materials which in the opinion of the Engineer are not in accordance with the Contract;
2. The substitution of proper and suitable materials; and
3. The removal and proper re-execution (notwithstanding any previous test thereof or interim payment therefore) of any work which in respect of materials or workmanship is not in the opinion of the Engineer in accordance with the Contract.
4. **Default of Contractor in carrying out Engineer's Instructions**

In case of default on the part of the Contractor in carrying out an instruction of the Engineer, the Employer shall be entitled to employ and pay other persons to carry out the same and all expenses consequent thereon or incidental thereto shall be borne by the Contractor and shall be recoverable from him by the Employer and may be deducted by the Employer from any monies due or which may become due to the Contractor. SUSPENSION OF WORK The Contractor shall on the written order of the Engineer suspend the progress of the Works or any part thereof for such time or times and in such manner as the Engineer may consider necessary and shall, during such suspension, properly protect and secure the Works so far as it is necessary in the opinion of the Engineer. The Employer should be notified and his written approval should be sought for any suspension of work in excess of three (3) days. POSSESSION OF SITE 1. **Access to Site**

The Employer shall with the Engineer's written order to commence the Works, give to the Contractor possession of so much of the Site as may be required to enable the Contractor to commence and proceed with the construction of the Works in accordance with the Programme referred to in Clause 13 hereof and otherwise in accordance with such reasonable proposals of the Contractor as he shall make to the Engineer by notice in writing, and shall from time to time as the Works proceed give to the Contractor possession of such further portions of the Site as may be required to enable the Contractor to proceed with the construction of the Works with due dispatch in accordance with the said Programme or proposals, as the case may be. 1. **Wayleaves, etc.**

The Contractor shall bear all expenses and charges for special temporary wayleaves required by him in connection with access to the Site. The Contractor shall also provide at his own cost any additional accommodation outside the Site required by him for the purpose of the Works. 1. **Limits of the Site**

Except as defined below, the limits of the Site shall be as defined in the Contract. Should the Contractor require land beyond the Site, he shall provide it entirely at his own expense and before taking possession shall supply the Engineer with a copy of the necessary permits. Access to the Site is available where the Site adjoins a public road but it is not provided unless shown on the Drawings. When necessary for the safety and convenience of workmen, public or livestock or for the protection of the Works, the Contractor shall, at his own expense, provide adequate temporary fencing to the whole or part of the Site. The Contractor shall not disturb, damage or pull down any hedge, tree or building within the Site without the written consent of the Engineer. TIME FOR COMPLETION 1. Subject to any requirement in the Contract as to completion of any section of the Works before completion of the whole, the whole of the Works shall be completed, in accordance with the provisions of Clause 46 and 47 hereof, within the time stated in the Contract.
2. The completion time includes weekly rest days, official holidays, and days of inclement weather.

EXTENSION OF TIME FOR COMPLETION If, subject to the provisions of the Contract, the Engineer orders alterations or additions in the Works in accordance with Clause 48 hereof, or if circumstances constituting force majeure as defined in the Contract have occurred, the Contractor shall be entitled to apply for an extension of the time for completion of the Works specified in the Contract. The Employer shall, upon such application, determine the period of any such extension of time; provided that in the case of alterations or additions in the Works, the application for such an extension must be made before the alterations or additions in the Works are undertaken by the Contractor. RATE OF PROGRESS The whole of the materials, plant and labour to be provided by the Contractor and the mode, manner and speed of execution and completion of the Works are to be of a kind and conducted in a manner to the satisfaction of the Engineer. Should the rate of progress of the Works or any part thereof be at any time in the opinion of the Engineer too slow to ensure the completion of the Works by the prescribed time or extended time for completion, the Engineer shall so notify the Contractor in writing and the Contractor shall thereupon take such steps as the Contractor may think necessary and the Engineer may approve to expedite progress so as to complete the Works by the prescribed time or extended time for completion. If the work is not being carried on by day and by night and the Contractor shall request permission to work by night as well as by day, then, if the Engineer shall grant such permission, the Contractor shall not be entitled to any additional payment. All work at night shall be carried out without unreasonable noise and disturbance. The contractor shall indemnify the Employer from and against any claims or liability for damages on account of noise or other disturbance created while or in carrying out the work and from and against all claims, demands, proceedings, costs and expenses whatsoever in regard or in relation to such noise or other disturbance. The Contractor shall submit in triplicate to the Engineer at the end of each month signed copies of explanatory Drawings or any other material showing the progress of the Works. LIQUIDATED DAMAGES FOR DELAY 1. If the Contractor shall fail to complete the Works within the time for completion prescribed in the Contract, or any extended time for completion in accordance with the Contract, then the Contractor shall pay to the Employer the sum specified in the Contract as liquidated damages, for the delay between the time prescribed in the Contract or the extended time for completion, as the case may be, and the date of substantial completion of the Works as stated in the Certificate of Substantial Completion, subject to the applicable limit stated in the Contract. The said sum shall be payable by the sole fact of the delay without the need for any previous notice or any legal proceedings, or proof of damage, which shall in all cases be considered as ascertained. The Employer may, without prejudice to any other method of recovery, deduct the amount of such liquidated damages from any monies in its hands due or which may become due to the Contractor. The payment or deduction of such damages shall not relieve the Contractor from his obligation to complete the Works or from any other of his obligations and liabilities under the Contract.
2. If, before the time for completion of the whole of the Works or of a Section of the Works, a Certificate of Substantial Completion has been issued for any part or Section of the Works, the liquidated damages for delay in completion of the remainder of the Works or of that Section may, for any period of delay after the date stated in such Certificate of Substantial Completion, and in the absence of alternative provisions in the Contract, be reduced in the proportion which the value of the part or Section so certified bears to the total value of the whole of the Works or Section, as applicable. The provisions of this Sub-Clause shall only apply to the rate of liquidated damages and shall not affect the limit thereof.

CERTIFICATE OF SUBSTANTIAL COMPLETION 1. **Substantial Completion of the Works**

When the whole of the Works have been substantially completed and have satisfactorily passed any test on completion prescribed by the Contract, the Contractor may give a notice to that effect to the Engineer accompanied by an undertaking to finish any outstanding work during the Defects Liability Period. Such notice and undertaking shall be in writing and shall be deemed to be a request by the Contractor, for the Engineer to issue a Certificate of Substantial Completion in respect of the Works. The Engineer shall, within twenty-one (21) days of the date of delivery of such notice either issue to the Contractor, with a copy to the Employer, a Certificate of Substantial Completion stating the date on which, in his opinion, the Works were substantially completed in accordance with the Contract or give instructions in writing to the Contractor specifying all the work which, in the Engineer's opinion, requires to be done by the Contractor before the issuance of such Certificate. The Engineer shall also notify the Contractor of any defects in the Works affecting substantial completion that may appear after such instructions and before completion of the work specified therein. The Contractor shall be entitled to receive such Certificate of Substantial Completion within twenty-one (21) days of completion, to the satisfaction of the Engineer, of the work so specified and making good any defect so notified. Upon issuance of the Certificate of Substantial Completion of the Works, the Contractor shall be deemed to have undertaken to complete with due expedition any outstanding work during the Defects Liability Period. 1. **Substantial Completion of Sections or Parts of the Works**

In accordance with the procedure in Sub-Clause (1) of this Clause and on the same conditions as provided therein, the Contractor may request the Engineer to issue, and the Engineer may issue, a Certificate of Substantial Completion in respect of any Section or part of the Works which has been substantially completed and has satisfactorily passed any tests on completion prescribed by the Contract, if: 1. a separate time for completion is provided in the Contract in respect of such Section or part of the Works;
2. such Section or part of the Works has been completed to the satisfaction of the Engineer and is required by the Employer for his occupation or use.

Upon the issuance of such Certificate, the Contractor shall be deemed to have undertaken to complete any outstanding work during the Defects Liability Period. DEFECTS LIABILITY 1. **Defects Liability Period**

The expression "Defects Liability Period" shall mean the period of twelve (12) months, calculated from the date of completion of the Works stated in the Certificate of Substantial Completion issued by the Engineer or, in respect of any Section or part of the Works for which a separate Certificate of Substantial Completion has been issued, from the date of completion of that Section or part as stated in the relevant Certificate. The expression "the Works" shall, in respect of the Defects Liability Period, be construed accordingly. 1. **Completion of Outstanding Work and Remedying of Defects**

During the Defects Liability Period, the Contractor shall finish the work, if any, outstanding at the date of the Certificate of Substantial Completion, and shall execute all such work of repair, amendment, reconstruction, rectification and making good defects, imperfections, shrinkages or other faults as may be required of the Contractor in writing by the Engineer during the Defects Liability Period and within fourteen (14) days after its expiration, as a result of an inspection made by or on behalf of the Engineer prior to expiration of the Defects Liability Period. 1. **Cost of Execution of Work of Repair, etc.**

All such outstanding work shall be carried out by the Contractor at his own expense if the necessity thereof shall, in the opinion of the Engineer, be due to the use of material or workmanship not in accordance with the Contract, or to neglect or failure on the part of the Contractor to comply with any obligation expressed or implied, on the Contractor's part under the Contract. 1. **Remedy on Contractor's Failure to Carry Out Work Required**

If the Contractor shall fail to do any such work outstanding on the Works, the Employer shall be entitled to employ and pay other persons to carry out the same, and all expenses consequent thereon or incidental thereto shall be recoverable from the Contractor by the Employer, and may be deducted by the Employer from any monies due or which may become due to the Contractor. 1. **Certificate of Final Completion**

Upon satisfactory completion of the work outstanding on the Works, the Engineer shall within twenty eight (28) days of the expiration of the Defects Liability period issue a Certificate of Final Completion to the Contractor. The Contract shall be deemed to be completed upon issuance of such Certificate, provided that the provisions of the Contract which remain unperformed and the Settlement of Disputes provision in the Contract shall remain in force for as long as is necessary to dispose of any outstanding matters or issues between the Parties.  ALTERATIONS, ADDITIONS AND OMISSIONS  Variations The Engineer may within his powers introduce any variations to the form, type or quality of the Works or any part thereof which he considers necessary and for that purpose or if for any other reasons it shall, in his opinion be desirable, he shall have power to order the Contractor to do and the Contractor shall do any of the following: 1. increase or decrease the quantity of any work under the Contract;
2. omit any such work;
3. change the character or quality or kind of any such work;
4. change the levels, lines, positions and dimensions of any part of the Works;
5. execute additional work of any kind necessary for the completion of the Works, and no such variation shall in any way vitiate or invalidate the Contract.
6. **Variations Increasing Cost of Contract or altering the Works.**

The Engineer shall, however, obtain the written approval of the Employer before giving any order for any variations which may result in an increase of the Contract Price or in an essential alteration of the quantity, quality or character of the Works. Orders for Variations to be in Writing No variations shall be made by the Contractor without an order in writing from the Engineer. Variations requiring the written approval of the Employer under paragraph (2) of this Clause shall be made by the Contractor only upon written order from the Engineer accompanied by a copy of the Employer's approval. Provided that, subject to the provisions of the Contract, no order in writing shall be required for any increase or decrease in the quantity of any work where such increase or decrease is not the result of an order given under this Clause but is the result of the quantities exceeding or being less than those stated in the Bill of Quantities. Valuation of Variations The Engineer shall estimate to the Employer the amount to be added or deducted from the Contract Price in respect of any variation, addition or omission. In the case of any variation, addition or omission which may result in an increase of the Contract Price, the Engineer shall communicate such estimate to the Employer together with his request for the Employer's written approval of such variation, addition or omission. The value of any variation, addition or omission shall be calculated on the basis of the unit prices contained in the Bill of Quantities. PLANT, TEMPORARY WORKS AND MATERIALS Plant, etc., Exclusive Use for the Works All Constructional Plant, Temporary Works and Materials provided by the Contractor shall, when brought on the Site, be deemed to be exclusively intended for the construction and completion of the Works and the Contractor shall not remove the same or any part thereof (save for the purpose of moving it from one part of the Site to another) without the consent in writing of the Engineer which shall not be unreasonably withheld. 1. **Removal of Plant, etc.**

Upon completion of the Works the Contractor shall remove from the Site all the said Constructional Plant and Temporary Works remaining thereon and any unused materials provided by the Contractor. Employer not liable for Damage to Plant The Employer shall not be at any time liable for the loss of any of the said Constructional plant, Temporary Works or Materials save if such loss results from the act or neglect of the Employer, its employees or agents. Ownership of paid material and work All material and work covered by payments made by the Employer to the Contractor shall thereupon become the sole property of the Employer, but this provision shall not be construed as relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work or as waiving the right of the Employer to require the fulfillment of all of the terms of the Contract. Equipment and supplies furnished by Employer Title to any equipment and supplies which may be furnished by the Employer shall rest with the Employer and any such equipment and supplies shall be returned to the Employer at the conclusion of the Contract or when no longer needed by the Contractor. Such equipment when returned to the Employer, shall be in the same condition as when delivered to the Contractor, subject to normal wear and tear. APPROVAL OF MATERIALS ETC., NOT IMPLIED The operation of Clause 49 hereof shall not be deemed to imply any approval by the Engineer of the materials or other matters referred to therein nor shall it prevent the rejection of any such materials at any time by the Engineer. MEASUREMENT OF WORKS The Engineer shall, when he requires any part or parts of the Works to be measured, give notice to the Contractor or the Contractor's authorized agent or representative who shall forthwith attend or send a qualified agent to assist the Engineer in making such measurement and shall furnish all particulars required by either of them. Should the Contractor not attend or neglect or omit to send such agent, then the measurement made by the Engineer or approved by him shall be taken to be the correct measurement of the work. The purpose of measuring is to ascertain the volume of work executed by the Contractor and therefore determine the amount of the monthly payments. LIABILITY OF THE PARTIES 1. The Works shall not be considered as completed until a Certificate of Final Completion shall have been signed by the Engineer and delivered to the Employer stating that the Works have been completed and that the Contractor has fulfilled all his obligations under Clause 47 to his satisfaction.
2. The Employer shall not be liable to the Contractor for any matter arising out of or in connection with the Contract or the execution of the Works unless the Contractor shall have made a claim in writing in respect thereof before the giving of the Certificate of Final Completion and in accordance with the Contract.

Unfulfilled Obligations Notwithstanding the issue of the Certificate of Final Completion, the Contractor shall remain liable for the fulfillment of any obligation incurred under the provisions of the Contract prior to the issuance of the Certificate of Final Completion and which remains unperformed at the time such Certificate is issued. For the purpose of determining the nature and extent of any such obligation the Contract shall be deemed to remain in force between the parties hereto. Contractor Responsible Notwithstanding any other provisions in the Contract documents, the Contractor shall be totally responsible for and shall bear any and all risks of loss or damage to or failure of the Works or any part thereof for a period of ten years after issuance of the Certificate of Final Completion, provided always that such risks, damage or failure result from acts, defaults and negligence of the Contractor, his agents, employees or workmen and such contractors. AUTHORITIES 1. The Employer shall have the right to enter upon the Site and expel the Contractor therefrom without thereby voiding the Contract or releasing the Contractor from any of his obligations or liabilities under the Contract or affecting the rights and powers conferred on the Employer and the Engineer by the Contract in any of the following cases:
2. If the Contractor is declared bankrupt or claims bankruptcy or court protection against his creditors or if the Contractor is a company or member of a company which was dissolved by legal action;
3. If the Contractor makes arrangements with his creditors or agrees to carry out the Contract under an inspection committee of his creditors;
4. If the Contractor withdraws from the Works or assigns the Contract to others in whole or in part without the Employer's prior written approval;
5. If the Contractor fails to commence the Works or shows insufficient progress to the extent which in the opinion of the Engineer will not enable him to meet the target completion date of the Works;
6. If the Contractor suspends the progress of the Works without due cause for fifteen (15) days after receiving from the Engineer written notice to proceed;
7. If the Contractor fails to comply with any of the Contract conditions or fails to fulfill his obligations and does not remedy the cause of his failure within fifteen (15) days after being notified to do so in writing;
8. If the Contractor is not executing the work in accordance with standards of workmanship specified in the Contract;
9. If the Contractor gives or promises to give a present or loan or reward to any employee of the Employer or of the Engineer.

Then the Employer may himself complete the Works or may employ any other contractor to complete the Works and the Employer or such other contractor may use for such completion so much of Constructional Plant, Temporary Works and Materials, which have been deemed to be reserved exclusively for the construction and completion of the Works under the provision of the Contract as he or they may think proper and the Employer may at any time sell any of the said Constructional Plant, Temporary Works and unused materials and apply the proceeds of sale in or towards the satisfaction of any sums due or which may become due to him from the Contractor under the Contract. Evaluation after Re-entry The Engineer shall as soon as may be practicable after any such entry and expulsion by the Employer notify the Contractor to attend the necessary evaluation of the Works. In the event that for any reason the Contractor does not attend such evaluation the Engineer shall undertake the said evaluation in the absence of the Contractor and shall issue a certificate stating the sum, if any, due to the Contractor for work done in accordance with the Contract up to the time of entry and expulsion by the Employer which has been reasonably accumulated to the Contractor in respect of the Works he has executed in such case in accordance with the Contract. The Engineer shall indicate the value of the materials whether unused or partially used and the value of construction equipment and any part of the Temporary Works. Payment After Re-entry If the Employer shall enter and expel the Contractor under this Clause he shall not be liable to pay the Contractor any money on account of the Contract until the expiration of the Defects Liability Period, and thereafter until the costs of completion and making good any defects of the Works, damages for delay in completion (if any), and all other expenses incurred by the Employer have been ascertained and their amount certified by the Engineer. The Contractor shall then be entitled to receive only such sum or sums (if any) as the Engineer may certify would have been due to him upon due completion by him after deducting the said amount. But if such amount shall exceed the sum which would have been payable to the Contractor on due completion by him,, then the Contractor shall upon demand pay to the Employer the amount of such excess. The Employer in such case may recover this amount from any money due to the Contractor from the Employer without the need to resort to legal procedures. URGENT REPAIRS If by reason of any accident or failure or other event occurring to, in or in connection with the Works or any part thereof either during the execution of the Works or during the Defects Liability Period any remedial or other work or repair shall in the opinion of the Engineer be urgently necessary for security and the Contractor is unable or unwilling at once to do such work or repair, the Employer may by his own or other workmen do such work or repair as the Engineer may consider necessary. If the work or repair so done by the Employer is work which in the opinion of the Engineer the Contractor was liable to do at his own expense under the Contract, all costs and charges properly incurred by the Employer in so doing shall on demand be paid by the Contractor to the Employer or may be deducted by the Employer from any monies due or which may become due to the Contractor provided always that the Engineer shall as soon after the occurrence of any such emergency as may be reasonably practicable notify the Contractor thereof in writing. 1. **INCREASE AND DECREASE OF COSTS**

Except if otherwise provided by the Contract, no adjustment of the Contract Price shall be made in respect of fluctuations of market, prices of labour, materials, plant or equipment, neither due to fluctuation in interest rates nor devaluation or any other matters affecting the Works. TAXATION The Contractor shall be responsible for the payment of all charges and taxes in respect of income including value added tax, all in accordance with and subject to the provisions of the income tax laws and regulations in force and all amendments thereto. It is the Contractor's responsibility to make all the necessary inquiries in this respect and he shall be deemed to have satisfied himself regarding the application of all relevant tax laws. BLASTING The Contractor shall not use any explosives without the written permission of the Engineer who shall require that the Contractor has complied in full with the regulations in force regarding the use of explosives. However, the Contractor, before applying to obtain these explosives, has to provide well arranged storage facilities. The Engineer's approval or refusal to permit the use of explosives shall not constitute ground for claims by the Contractor. MACHINERY The Contractor shall be responsible for coordinating the manufacture, delivery, erection and commissioning of plant machinery and equipment which are to form a part of the Works. He shall place all necessary orders as soon as possible after the signing of the Contract. These orders and their acceptance shall be produced to the Engineer on request. The Contractor shall also be responsible for ensuring that all sub-contractors adhere to such programs as are agreed and are needed to ensure completion of the Works within the period for completion. Should any sub-contracted works be delayed, the Contractor shall initiate the necessary action to speed up such completion. This shall not prejudice the Employer's right to exercise his remedies for delay in accordance with the Contract. TEMPORARY WORKS AND REINSTATEMENT The Contractor shall provide and maintain all temporary roads and tracks necessary for movement of plant and materials and clear same away at completion and make good all works damaged or disturbed. The Contractor shall submit drawings and full particulars of all Temporary Works to the Engineer before commencing same. The Engineer may require modifications to be made if he considers them to be insufficient and the Contractor shall give effect to such modifications but shall not be relieved of his responsibilities. The Contractor shall provide and maintain weather-proof sheds for storage of material pertinent to the Works both for his own use and for the use of the Employer and clear same away at the completion of the Works. The Contractor shall divert as required, at his own cost and subject to the approval of the Engineer, all public utilities encountered during the progress of the Works, except those specially indicated on the drawings as being included in the Contract. Where diversions of services are not required in connection with the Works, the Contractor shall uphold, maintain and keep the same in working order in existing locations. The Contractor shall make good, at his own expense, all damage to telephone, telegraph and electric cable or wires, sewers, water or other pipes and other services, except where the Public Authority or Private Party owning or responsible for the same elects to make good the damage. The costs incurred in so doing shall be paid by the Contractor to the Public Authority or Private Party on demand. PHOTOGRAPHS AND ADVERTISING The Contractor shall not publish any photographs of the Works or allow the Works to be used in any form of advertising whatsoever without the prior approval in writing from the Employer. PREVENTION OF CORRUPTION The Employer shall be entitled to cancel the Contract and to recover from the Contractor the amount of any loss resulting from such cancellation, if the Contractor has offered or given any person any gift or consideration of any kind as an inducement or reward for doing or intending to do any action in relation to the obtaining or the execution of the Contract or any other contract with the Employer or for showing or intending to show favour or disfavour to any person in relation to the Contract or any other contract with the Employer, if the like acts shall have been done by any persons employed by him or acting on his behalf whether with or without the knowledge of the Contractor in relation to this or any other Contract with the Employer. DATE FALLING ON HOLIDAY Where under the terms of the Contract any act is to be done or any period is to expire upon a certain day and that day or that period fall on a day of rest or recognized holiday, the Contract shall have effect as if the act were to be done or the period to expire upon the working day following such day. NOTICES 1. Unless otherwise expressly specified, any notice, consent, approval, certificate or determination by any person for which provision is made in the Contract Documents shall be in writing. Any such notice, consent, approval, certificate or determination to be given or made by the Employer, the Contractor or the Engineer shall not be
2. unreasonably withheld or delayed.
3. Any notice, certificate or instruction to be given to the Contractor by the Engineer or the Employer under the terms of the Contract shall be sent by post, cable, telex or facsimile at the Contractor's principal place of business specified in the Contract or such other address as the Contractor shall nominate in writing for that purpose, or by
4. delivering the same at the said address against an authorized signature certifying the receipt.
5. Any notice to be given to the Employer under the terms of the Contract shall be sent by post, cable, telex or facsimile at the Employer's address specified in the Contract, or by delivering the same at the said address against an authorized signature certifying the receipt.
6. Any notice to be given to the Engineer under the terms of this Contract shall be sent by post, cable, telex or facsimile at the Engineer's address specified in the Contract, or by delivering the same at the said address against an authorized signature certifying the receipt.

LANGUAGE, WEIGHTS AND MEASURES Except as may be otherwise specified in the Contract, English shall be used by the Contractor in all written communications to the Employer or the Engineer with respect to the services to be rendered and with respect to all documents procured or prepared by the Contractor pertaining to the Works. The metric system of weights and measures shall be used in all instances. RECORDS, ACCOUNTS, INFORMATION AND AUDIT The Contractor shall maintain accurate and systematic records and accounts in respect of the work performed under this Contract. The Contractor shall furnish, compile or make available at all times to the UNDP any records or information, oral or written, which the UNDP may reasonably request in respect of the Works or the Contractor's performance thereof. The Contractor shall allow the UNDP or its authorized agents to inspect and audit such records or information upon reasonable notice. FORCE MAJEURE Force majeure as used herein means Acts of God, war (whether declared or not), invasion, revolution, insurrection or other acts or events of a similar nature or force. In the event of and as soon as possible after the occurrence of any cause constituting force majeure, the Contractor shall give notice and full particulars in writing to the UNDP and to the Engineer of such force majeure if the Contractor is thereby rendered unable, wholly or in part, to perform its obligations and meet its responsibilities under this Contract. Subject to acceptance by the UNDP of the existence of such force majeure, which acceptance shall not be unreasonably withheld, the following provisions shall apply: 1. The obligations and responsibilities of the Contractor under this Contract shall be suspended to the extent of his inability to perform them and for as long as such inability continues. During such suspension and in respect of work suspended, the Contractor shall be reimbursed by the UNDP substantiated costs of maintenance of the Contractor's equipment and of per diem of the Contractor's permanent personnel rendered idle by such suspension;
2. The Contractor shall within fifteen (15) days of the notice to the UNDP of the occurrence of the force majeure submit a statement to the UNDP of estimated costs referred to in sub-paragraph (a) above during the period of suspension followed by a complete statement of actual expenditures within thirty (30) days after the end of the
3. suspension;
4. The term of this Contract shall be extended for a period equal to the period of suspension taking however into account any special condition which may cause the additional time for completion of the Works to be different from the period of suspension;
5. If the Contractor is rendered permanently unable, wholly or in part, by reason of force majeure, to perform his obligations and meet his responsibilities under the Contract, the UNDP shall have the right to terminate the Contract on the same terms and conditions as provided for in Clause 68 of these General Conditions, except that the period of notice shall be seven (7) days instead of fourteen (14) days, and
6. For the purpose of the preceding sub-paragraph, the UNDP may consider the Contractor permanently unable to perform in case of any suspension period of more than ninety (90) days.

SUSPENSION BY THE UNDP The UNDP may by written notice to the Contractor suspend for a specified period, in whole or in part, payments to the Contractor and/or the Contractor's obligation to continue to perform the Works under this Contract, if in the UNDP' sole discretion: 1. any conditions arise which interfere, or threaten to interfere with the successful execution of the Works or the accomplishment of the purpose thereof, or
2. the Contractor shall have failed, in whole or in part, to perform any of the terms and conditions of this Contract.

After suspension under sub-paragraph (a) above, the Contractor shall be entitled to reimbursement by the UNDP of such costs as shall have been duly incurred in accordance with this Contract prior to the commencement of the period of such suspension. The term of this Contract may be extended by the UNDP for a period equal to any period of suspension, taking into account any special conditions which may cause the additional time for completion of the Works to be different from the period of suspension.  TERMINATION BY THE UNDP The UNDP may, notwithstanding any suspension under Clause 67 above, terminate this Contract for cause or convenience in the interest of the UNDP upon not less than fourteen (14) days written notice to the Contractor. Upon termination of this Contract: 1. The Contractor shall take immediate steps to terminate his performance of the Contract in a prompt and orderly manner and to reduce losses and to keep further expenditures to a minimum, and
2. The Contractor shall be entitled (unless such termination has been occasioned by the Contractor's breach of this Contract), to be paid for the part of the Works satisfactorily completed and for the materials and equipment properly delivered to the Site as of the date of termination for incorporation to the Works, plus substantiated costs resulting from commitments entered into prior to the date of termination as well as any reasonable substantiated direct costs incurred by the Contractor as a result of the termination, but shall not be entitled to receive any other or further payment or damages.

TERMINATION BY THE CONTRACTOR In the case of any alleged breach by the UNDP of the Contract or in any other situation which the Contractor reasonably considers to entitle him to terminate his performance of the Contract, the Contractor shall promptly give written notice to the UNDP detailing the nature and the circumstances of the breach or other situation. Upon acknowledgement in writing by the UNDP of the existence of such breach and the UNDP' inability to remedy it, or upon failure of the UNDP to respond to such notice within twenty (20) days of receipt thereof, the Contractor shall be entitled to terminate this Contract by giving 30 days written notice thereof. In the event of disagreement between the Parties as to the existence of such breach or other situation referred to above, the matter shall be resolved in accordance with Clause 71 of these General Conditions. Upon termination of this Contract under this Clause the provisions of sub-paragraph (b) of Clause 68 hereof shall apply. RIGHTS AND REMEDIES OF THE UNDP Nothing in or relating to this Contract shall be deemed to prejudice or constitute a waiver of any other rights or remedies of the UNDP. The UNDP shall not be liable for any consequences of, or claim based upon, any act or omission on the part of the Government. SETTLEMENT OF DISPUTES In the case of any claim, controversy or dispute arising out of, or in connection with this Contract or any breach thereof, the following procedure for resolution of such claim, controversy or dispute shall apply. Notification The aggrieved party shall immediately notify the other party in writing of the nature of the alleged claim, controversy or dispute, not later than seven (7) days from awareness of the existence thereof. Consultation On receipt of the notification provided above, the representatives of the Parties shall start consultations with a view to reaching an amicable resolution of the claim, controversy or dispute without causing interruption of the Works. Conciliation Where the representatives of the Parties are unable to reach such an amicable settlement, either party may request the submission of the matter to conciliation in accordance with the UNCITRAL Rules of Conciliation then obtaining. Arbitration Any claim, controversy or dispute which is not settled as provided under clauses 71.1 through 3 above shall be referred to arbitration in accordance with the UNCITRAL Arbitration Rules then obtaining. The Parties shall be bound by the arbitration award rendered in accordance with such arbitration as the final adjudication of any such controversy or claim. PRIVILEGES AND IMMUNITIES Nothing in or relating to this Contract shall be deemed a waiver of any of the privileges and immunities of the United Nations of which the UNDP is an integral part. |

1. *Current Ratio: an indicator of a company's short-term liquidity. The current ratio (also liquidity ratio) measures a company's ability to meet its short-term obligations with its liquid assets. The higher the current ratio, the better the position of the company.* [↑](#footnote-ref-1)