



|   |   |              |
|---|---|--------------|
|  KHUTANI POWER | <b>Khutani Power Company Private Limited,<br/>(KPCPL)</b> | SECTION: I   |
| SPEC. NO.<br>TCE.7784A-3057-<br>01  | Khutani Hydroelectric Project (21MW),<br>Uttarakhand      | SHEET i OF i |

## Contents

|          |  |  |
|----------|--|--|
| <b>1</b> | <b>Preamble to the Technical Specifications .....</b>      | <b>1</b>                                   |
| 1.1      | General .....  | 1  |
| 1.2      | Submittals .....   | 2  |
| 1.3      | Standards and Codes .....                                  | 2  |
| 1.3.1    | <i>General .....</i>                                       | <i>2</i>                                   |
| 1.3.2    | <i>Indian Standards, Codes, Laws and Regulations .....</i> | <i>3</i>                                   |
| 1.3.3    | <i>International Standards and Codes .....</i>             | <i><b>Error! Bookmark not defined.</b></i> |
| 1.4      | System of Units.....                                       | 3  |
| 1.5      | Definition of Time and Key Dates.....                      | 5  |

|             |
|-------------|
| ISSUE<br>P0 |
|-------------|


|   |   |              |
|---|---|--------------|
|  | <b>Khutani Power Company Private Limited,<br/>(KPCPL)</b> | SECTION: I   |
| SPEC. NO.<br>TCE.7784A-3057-<br>01  | Khutani Hydroelectric Project (21MW),<br>Uttarakhand      | SHEET 1 OF 5 |

# 1 **PREAMBLE TO THE TECHNICAL SPECIFICATIONS**

## 1.1 **GENERAL**

- i) The following Specifications are part of the requirements for the work related to the Permanent and Temporary Works, which are to be provided by the Contractor for the Package according to the stipulations of the Contract. Hence, the instructions given herein form an integral part of, and are applicable to, all Technical and Contract Documents issued for the Works. Addenda to these Specifications may be issued as required during bidding and construction phases.
- ii) These Specifications shall be read in conjunction with the Conditions of Contract, the Drawings and the Bill of Quantities, Rates and Prices (hereinafter called "the BoQ"), and the Contractor for the Package shall comply with all provisions contained within the Contract Documents and Project Manager's instructions.
- iii) It is the intent of these Specifications, together with other relevant documents issued as part of the Tender and Contract Documents or to follow later on, to provide the Contractor with complete and detailed information and subsequent instructions necessary to enable him to submit a well planned Tender, to carry out the design, where and when required, and to execute properly the work prescribed.
- iv) It is the intent of these Specifications to establish acceptable standards of quality. Minor deviations in details due to manufacturer's standard shop process will be considered for acceptance provided that, in the opinion of the Project Manager, the proposed substitutions are equal in quality to those specified. All deviations shall be called out in writing in the Tender, and shall be specifically indicated on the shop drawings.
- v) All works shall be executed according to the Construction Drawings and requirements released for construction, in a professional and diligent manner, and all supplies and work shall comply with the quality requirements defined in the relevant Sections of these Specifications and

ISSUE  
P0

|   |   |              |
|---|---|--------------|
|  | <b>Khutani Power Company Private Limited,<br/>(KPCPL)</b> | SECTION: I   |
| SPEC. NO.<br>TCE.7784A-3057-<br>01  | Khutani Hydroelectric Project (21MW),<br>Uttarakhand      | SHEET 2 OF 5 |

other Contract Documents. The Contractor shall endeavour to provide all such necessary efforts in order to comply with the intent of these Specifications to the satisfaction of the Project Manager.

## 1.2 **SUBMITTALS**


- i) Contractor for the Package shall provide the Project Manager with all submittals as requested for in these Specifications and other Contract Documents. Although the extent of a submittal shall be at the discretion of the Contractor, they shall be complete enough to illustrate adequately the purpose of the submittal for the understanding of the Project Manager.
- ii) At any time the Project Manager may call either for additional information, completion of the submittals or request the Contractor not to submit some of them.
- iii) The Contractor shall submit these documents to the Project Manager so that, even if not specifically expressed, reasonable time will be given to the Project Manager to comment or approve the submittals.
- iv) Within 30 days of the Approval to Proceed, Contractor for the Package shall communicate to the Project Manager any possible conflicts he foresees with any of the other Packages.

## 1.3 **STANDARDS AND CODES**

### 1.3.1 **GENERAL**

- i) Indian Standards, as far as possible, are referred to in these Specifications. Pertinent provisions of these standards shall apply to the work, and are hereby incorporated in these Specifications. Where a manufacturer is named, other manufacturers' products will also be acceptable provided the designated material or workmanship is of equivalent or better quality and satisfy the relevant Indian Codes.
- ii) All standards and codes employed or referred to shall be the latest current issue in effect at the date 28 days prior to the Tender submission date.

ISSUE  
P0

|   |   |              |
|---|---|--------------|
|  | <b>Khutani Power Company Private Limited,<br/>(KPCPL)</b> | SECTION: I   |
| SPEC. NO.<br>TCE.7784A-3057-<br>01  | Khutani Hydroelectric Project (21MW),<br>Uttarakhand      | SHEET 3 OF 5 |

- iii) In case of discrepancies between these Specifications and national or international standards and codes, these Specifications being part of Contract Documents shall govern, unless otherwise established by the Project Manager in each particular case.


### 1.3.2 INDIAN STANDARDS, CODES, LAWS AND REGULATIONS

- i) Throughout the duration of the Contract, the materials, equipment, services, design and workmanship shall conform to applicable Indian codes, standards, laws and regulations in force in India, if not otherwise specified.
- ii) It is a Contractor's duty to acquaint himself with all available Indian codes, standards, laws and regulations related to the Works in any way and he shall procure and keep at the Site a copy of each of such applicable documents.

### 1.4 SYSTEM OF UNITS


- i) The SI system of units has been used throughout these Specifications and this system of units shall be used consequently throughout the duration of Contract for all technical or contractual purposes.
- ii) Any other system of units utilised shall have only a descriptive value and shall in no case replace the above-mentioned SI system.
- iii) Following abbreviations are used in these Specifications and other related Contract Documents:

ISSUE  
P0

|   |   |              |
|---|---|--------------|
|  KHUTANI POWER | <b>Khutani Power Company Private Limited,<br/>(KPCPL)</b> | SECTION: I   |
| SPEC. NO.<br>TCE.7784A-3057-<br>01  | Khutani Hydroelectric Project (21MW),<br>Uttarakhand      | SHEET 4 OF 5 |

| Physical property          | Unit  | Abbreviation  |
|----------------------------|---|---|
| Length:                    | millimetre<br>centimetre<br>meter<br>kilometre  | mm<br>cm<br>m<br>km   |
| Area:                      | square millimetre<br>square centimetre<br>square metre  | mm <sup>2</sup><br>cm <sup>2</sup><br>m <sup>2</sup>          |
| Volume:                    | cubic metre   | m <sup>3</sup>  |
| Mass:                      | kilogram<br>ton (=1000 kg)  | kg<br>t   |
| Density:                   | ton per cubic metre   | t/m <sup>3</sup>  |
| Force:                     | Newton, kilo-Newton<br>Mega-Newton  | N,<br>MN                      kN                              |
| Moment:                    | Newton                      metre<br>kilo-Newton metre  | Nm<br>kNm   |
| Stress:                    | Newton per square millimetre<br>kilo-Newton per square<br>millimetre<br>Kilogram per square<br>centimetre | N/mm <sup>2</sup><br>kN/mm <sup>2</sup><br>kg/cm <sup>2</sup> |
| Pressure:                  | bar<br>Pascal, Mega-Pascal  | bar<br>Pa, MPa  |
| Time:                      | second<br>minute<br>hour  | s<br>min<br>h   |
| Rate of Flow:              | litres per second<br>litres per minute<br>cubic metres per second<br>cubic metres per minute              | l/s<br>l/min<br>m <sup>3</sup> /s<br>m <sup>3</sup> /min      |
| Velocity:                  | metre per second  | m/s   |
| Speed of rotation:         | revolutions per minute  | rpm   |
| Temperature:               | degree Celsius  | °C  |
| Illumination<br>Intensity: | lux   | lx  |
| Energy:                    | kilowatt hour   | kWh   |

ISSUE  
P0

|   |   |              |
|---|---|--------------|
|  KHUTANI POWER | <b>Khutani Power Company Private Limited,<br/>(KPCPL)</b> | SECTION: I   |
| SPEC. NO.<br>TCE.7784A-3057-<br>01  | Khutani Hydroelectric Project (21MW),<br>Uttarakhand      | SHEET 5 OF 5 |

|           |                                       |               |
|-----------|---------------------------------------|---------------|
| Power:    | Watt<br>Kilowatt<br>Megawatt          | W<br>kW<br>MW |
| Slope:    | horizontal : vertical                 | H : V         |
| Gradient: | Percentage (vertical :<br>horizontal) | %             |

### 1.5 **DEFINITION OF TIME AND KEY DATES**

The periods of time and key dates used throughout these Specifications have the meanings as assigned to them in the General Conditions of Contract and the Conditions of Particular Application.

End of Chapter

|             |
|-------------|
| ISSUE<br>P0 |
|-------------|