

Supply, Installation, Testing and Commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

NOIDA METRO RAIL CORPORATION (NMRC) LIMITED

REQUEST FOR PROPOSAL (RFP)

E-Tender No. NMRC/Traction/PSI/171/2021

Tender Document

Supply, Installation, Testing and Commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

Issued by:

**Noida Metro Rail Corporation (NMRC) Limited
Block-III, 3rd Floor,
Ganga Shopping Complex, Sector-29, Noida -201301,
District Gautam Budh Nagar, Uttar Pradesh, India**

Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

Disclaimer

This Request for Proposal (RFP) Document (or “Tender”) for “Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station, Noida.” contains brief information about the scope of work and selection process for the Bidder (“the Contractor” or “the Tenderer”). The purpose of the Document is to provide the Bidders with information to assist the formulation of their Bidding Documents.

While all efforts have been made to ensure the accuracy of information contained in this RFP Document, this Document does not purport to contain all the information required by the Bidders. The Bidders should conduct their own independent assessment, investigations and analysis and should check the reliability, accuracy and completeness of the information at their end and obtain independent advice from relevant sources as required before submission of their Bid/s. Noida Metro Rail Corporation Ltd. (“NMRC” or “the Corporation” or “the Purchaser”) or any of its employees or advisors shall incur no liability under any law, statute, rules or regulations as to the accuracy or completeness of the RFP Document.

NMRC reserves the right to change any or all conditions/information set in this RFP Document by way of revision, deletion, updating or annulment through issuance of appropriate addendum as NMRC may deem fit without assigning any reason thereof.

NMRC reserves the right to accept or reject any or all Bids without giving any reasons thereof. NMRC will not entertain or be liable for any claim for costs and expenses in relation to the preparation of the Bid/s to be submitted in terms of this RFP Document.

Glossary

- a) **“Addendum / Amendment”** means any written amendment / addendum /corrigendum to this RFP, from time to time issued by NMRC to the prospective bidders
- b) **“Agreement”** means the Contract Agreement to be executed between NMRC and the Selected Bidder
- c) **“Applicable Laws”** means all the laws including local, state, national or other laws, brought into force and effect by Govt. of India, State Governments, local bodies, statutory agencies and any other, and rules / regulations / notifications issued by them from time to time. It also include judgments, decrees, injunctions, writs and orders of any court or judicial authority as may be in force and effected from time to time
- d) **“Bidder”** or **“Tenderer”** means any entity which is a sole proprietorship firm, a partnership firm or a company, in title and assigns which is submitting its bid pursuant to RFP Documents
- e) **“Bid Due Date”** means Bid Submission end date and time given in the tender
- f) **“Earnest Money Deposit (EMD)”** means the refundable amount to be submitted by the Bidder along with RFP documents to NMRC
- g) **“Performance Bank Guarantee/ Security Deposit”** means interest free amount to be deposited by the Contractor with NMRC as per terms and conditions of Contract Agreement as a security against the performance of the Contract agreement
- h) **“NMRC”** means Noida Metro Rail Corporation Limited (or “Corporation” or “Purchaser” or “Employer”)
- i) **“Party”** means Contractor or Corporation (together they are called **“Parties”**)
- j) **“Re. or Rs. or INR”** means Indian Rupee
- k) **“Selected Bidder”** means the bidder who has been selected by NMRC, pursuant to the bidding process for award of Contract

The words and expressions beginning with capital letters and defined in this document shall, unless repugnant to the context, have the meaning ascribed thereto hereinabove.

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Data Sheet

1	Name of the Bid	Supply, Installation, Testing and Commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.
2	Approximate Cost of Work	Rs. 51,31,672.00 (Rupees Fifty One Lacs Thirty One Thousands Six Hundred Seventy Two only) (including GST)
3	Time-period of contract	Four (4) months
4	Method of selection	Cost Based Selection (Lowest –L1)
5	Bid Processing Fee	Rs.5,900/- (including GST)(Rupees Five Thousand Nine Hundred only) through DD/RTGS/NEFT only payable in favour of Noida Metro Rail Corporation Limited.
6	Earnest Money Deposit (EMD)	Rs. 1,02,700/- (Rupees One Lacs Two Thousand Seven Hundred only) (Including GST)
7	Financial Bid to be submitted together with Technical Bid	Yes
8	Name of the Corporation's official for addressing queries and clarifications	GM (Technical) Noida Metro Rail Corporation Ltd. Block-III, 3rd Floor, Ganga Shopping Complex, Sector- 29, Noida 201301 Email: nmrcnoida@gmail.com nmrcjgmelectrical@gmail.com Website: www.nmrcnoida.com , http://etender.up.nic.in
9	Bid Validity Period	180 days
10	Bid Language	English
11	Bid Currency	INR
12	Schedule of Bidding Process	
	Head	Key Dates
	Uploading of Bid	29.12.2021 Wednesday
	Pre-bid Meeting	03.01.2022 11:00 hrs (IST) Monday
	Last date of submission of Queries	05.01.2022 Wednesday
	Last date of issuing amendment/clarifications, if any	12.01.2022 Wednesday
	Last Date of Bid Submission	19.01.2022 Wednesday
	Date of Technical Bid Opening	20.01.2022 Thursday
13	Consortium to be allowed	Yes
14	Account details	For Bid Processing Fee & EMD State Bank of India (04077) – Sector 18, Noida Gautam Budh Nagar, Uttar Pradesh - 201301 IFSC Code: SBIN0004077 A/c No. 37707840592 Noida Metro Rail Corporation Ltd.

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Section 1: General Information and Scope

1.1. Background

- a. Noida and Greater Noida are being developed as the satellite towns to New Delhi and more and more people from Delhi and other areas are shifting to these towns in search of fresh air, greenery and better infrastructure. There is a need of providing an efficient, reliable and comfortable transportation system for the population intending to settle in these towns and also the public coming to these areas for education, service and business.
- b. Noida Metro Rail Corporation is a Special Purpose Vehicle (SPV) formed by Noida and Greater Noida Authorities for planning and executing urban transport projects in Noida, Greater Noida regions. The Corporation desires to provide a world-class Public Transportation System with state-of-the-art technology. As such, the overarching criterion for setting up of the Corporation is to help create an efficient, safe, reliable, economical and affordable public transport system.
- c. NMRC invites Bids for selection of Contractor for Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.
- d. In this regard, the Corporation now invites **open Tender for e-bidding** as per provisions of this RFP Document.
- e. NMRC will shortlist the Bidders on the basis of evaluation criteria mentioned in this RFP Document. On the basis of the minimum evaluation criteria, qualified Bidders will be shortlisted and financial proposal of only qualified Bidders will be opened.

1.2. Communication

All communications should be addressed to -

GM/Technical

Noida Metro Rail Corporation (NMRC) Limited
Block-III, 3rdFloor, Ganga Shopping Complex, Sector-29,
Noida -201301
District GautamBudh Nagar, Uttar Pradesh

Email: nmrcnoida@gmail.com

nmrcjgmelectrical@gmail.com

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2. Section 2: Terms of Reference

Objective

Execution of Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station provided in tender with suitable uniformed trained manpower, consumables, spare parts, equipment & machinery etc. The Tenderer is to carry out their self-assessment in respect of their capacity in terms of manpower, maintenance, machine, spare parts and finance. The Bidder should be able to take up additional similar work at short notice. Similarly the scope of work may also be reduced on account of poor performance and contractor shall have no right for any claims due to reduction in scope of work.

a. General

The works shall be done in accordance with Employer's Requirements and the other requirements of the Contract.

The work shall be executed to the highest standards available using proven up-to-date good Engineering practices. Tenders are called from the electrical contractor having valid contractor license.

b. Scope of Works

The work covered in the tender:

- Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector - 137 metro station.

All activities to be carried out as per the Schedule of work given in 'Bill of Quantity', as per 'Special conditions of contracts' and as other terms & conditions of tender documents.

Other miscellaneous items shall be as per instructions of engineer in charge.

It is to be noted:

1. The contractor shall plan & execute the work in such a way that the work proceeds smoothly to the satisfaction of engineer.
2. The Contractor shall attend regular coordination meetings convened by the employer / engineer for interface and adhere to the decisions taken in the meeting.
3. Access will be provided to the staff appointed by the contractor for carrying out their works and bringing materials and Equipments at site. However, the security of materials and Equipments brought at the site will be the responsibility of the Contractor.
4. The Contractor shall take all necessary precautions to ensure safety of the staff, adjoining structures, materials & equipments and the work in progress as per the directions of engineer- in-charge.
5. Manpower (Electrician & Helper) shall be deployed as specified in the tender documents. They shall be adequately qualified & shall be authorized to carry out the Electrical Work. All the staff to be deployed after giving the safety training and police verification. Only authorized staff of contractor having proper identity card shall be permitted to enter in metro stations for execution of work.
6. All incidental arrangements for safe transport of Material, machine, tools etc. shall be the responsibility of the contractor. All expenditure to be incurred in this connection shall be borne by contractor.

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7. Log book in hard and soft copy detailing work carried out by Contractor which mentioning date, details of work completed, complaints if any etc. will be maintained and signed both by NMRC and contractor officials.
8. In case of discrepancy among Standard codes of Practice, Technical Specifications and provision in sub-clauses in this NIT, the order of precedence will be as below:
 - Provision in NIT/BOQ
 - Technical Specifications
 - Standard Code of Practice

3. Section 3: Instructions to Bidders

General instructions

- a. A tenderer shall submit only one bid in the same tendering process, individually as a tenderer. A tenderer who submits or participates in, more than one bid will cause all of the proposals in which the tenderer has participated to be disqualified. No tenderer can be a sub-contractor while submitting a bid individually in the same bidding process. A tenderer, if acting in the capacity of subcontractor in any bid, may participate in more than one bid, but only in that capacity.
- b. The Bidder shall initiate, and actively pursue and involve itself in all investigations and enquiries, Corporation feedbacks, information, convening of and attendance at meetings, and in any other activities as are or may be necessary for producing high quality work as per the requirements.
- c. The Bidder shall carry out the services in compliance with the provisions of this Agreement. Any and all changes necessary to ensure that the Bidder's documents conform to the intent and purpose set out in the Agreement, shall be made at the Bidder's own expense. The Bidder represents that it is a professional and experienced company, and hereby agrees to bear full responsibility for the correctness and technical merit of the services performed.
- d. Bidders shall be evaluated on the basis of the Evaluation Criteria specified in this document. Bidders shall be deemed to have understood and agreed that no explanation or justification for any aspect of the Selection Process will be given and that NMRC's decisions are without any right of appeal whatsoever.
- e. Any entity which has been barred by the Central/State Government in India or by any entity controlled by them, from participating in any project, and the bar subsists as on the date of Bid, would not be eligible to submit an e - Bid.
- f. Bidders are encouraged to inform themselves fully about the assignment and the local conditions before submitting the e-Bid by paying a visit to the Corporation and/or by sending written queries to NMRC before the last date for receiving queries/clarifications.
- g. NMRC shall not be liable for any omission, mistake or error on the part of the Bidder in respect of any of the above or on account of any matter or thing arising out of or concerning or relating to e-Bid or the Selection Process, including any error or mistake therein or in any information or data given by NMRC.
- h. The currency for the purpose of the Proposal shall be the Indian Rupee (INR).
- i. Tenderers shall not have a conflict of interest. All Tenderers found to have a conflict of interest shall be disqualified. Tenderers shall be considered to have a conflict of interest with one or more parties in this bidding process, if:
 - i. A tenderer has been engaged by the Employer to provide consulting services for the preparation related to procurement or implementation of the project;
 - ii. A tenderer is any associates/affiliates (inclusive of parent firms) mentioned in subparagraph above; or
 - iii. A tenderer lends, or temporarily seconds its personnel to firms or organizations which are engaged in consulting services for the preparation related to procurement for an implementation of the project, if the personnel would be involved in any capacity on the same project.

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Cost of Bid Document / e-Tender processing Fee

- a. The tenderer shall bear all costs associated with the preparation and submission of its e-Bid and Noida Metro Rail Corporation Ltd. ("NMRC" or "the Corporation"), will in no case be responsible or liable for these costs, regardless of the conduct or outcome of the e-Bid process.
- b. This tender document is available on the web site <http://etender.up.nic.in> or on NMRC website (www.nmrcnoida.com) to enable the tenderers to view, download the e-Bid document and submit e-Bids online up to the last date and time mentioned in e-Tender notice/e-tender document against this e-Tender. The tenderers shall have to pay cost of bid document/ e- Tender processing fee of as mentioned in **Data Sheet** through RTGS/NEFT only payable in **favour of "Noida Metro Rail Corporation Limited"** in the A/c No. mentioned in **Data Sheet**. The scanned copy of RTGS/NEFT receipt with transaction Id certified by the same bank must be enclosed along with the e-Bid. This cost of bid document/ e-Tender processing fee as mentioned in **Data Sheet** will be non-refundable. Tender without cost of bid document/ e-Tender processing fee in the prescribed form, will not be accepted.
- c. Conditional Bid shall be rejected outright & shall not be considered.

Acknowledgement by Bidder

It shall be deemed that by submitting the e-Bid, the Bidder has:

- a. Made a complete and careful examination of the e-Bid;
- b. Received all relevant information requested from NMRC;
- c. Acknowledged and accepted the risk of inadequacy, error or mistake in the information provided in the e-Bid or furnished by or on behalf of NMRC;
- d. Satisfied itself about all matters, things and information, necessary and required for submitting an informed Application and performance of all of its obligations there under;
- e. Acknowledged that it does not have a Conflict of Interest; and
- f. Agreed to be bound by the undertaking provided by it under and in terms hereof.

Availability of Bid Document

This Bid document is available on the web site <http://etender.up.nic.in> or on Noida Metro website www.nmrcnoida.com to enable the Bidders to view, download the e-Bid document and submit e-Bids online up to the last date and time mentioned in e-Bidder notice/ e-Bid document. The Bidder's shall have to pay e-Bid document fee and EMD as mentioned in Data sheet through RTGS/ NEFT on addresses given in data sheet. The scanned copy of RTGS/ NEFT with transaction ID certified by the same bank must be enclosed along with the e-Bid. This e-Bid document fee will be non-refundable. Bid without Bid fee in the prescribe form will not be accepted.

Clarifications of e-Bid

- a. During evaluation of e-Bid, NMRC may, at its discretion, ask the Bidder for a clarification of his/her e-Bid. The request for clarification shall be in writing.
- b. Any queries or request for additional information concerning this RFP shall be submitted in writing or by fax and e-mail to the **GM technical**, NMRC **only before or during Pre-Bid Meeting** held at NMRC. The envelopes / communication shall clearly bear the following identification / title: **"Queries/ Request for Additional Information: RFP for Execution of Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA**

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transformer and other associated work at Sector -137 metro station". The responses will be posted to all such queries on the official Website www.nmrcnoida.com. NMRC reserves the right not to respond to any questions or provide any clarifications, in its sole discretion, and nothing in this Clause shall be taken or read as compelling or requiring NMRC to respond to any question or to provide any clarification.

- c. A pre- submission meeting shall be called on the date mentioned in **Data Sheet** at NMRC Office. Any change corresponding to date, if any, shall be communicated to the Bidder vide NMRC/ e- Tendering website.
- d. In case the Bidder seeks for any queries, he shall send letter or e-mail to the correspondence address given in Data Sheet.
- e. However, NMRC shall not entertain any correspondence from the Bidders during the period of e- Bid opening to selection of the successful Bidder. Any wrong practice shall be dealt under Fraud and Corrupt Practices.
- f. The Tenderer is advised to visit and examine the Site of Works and its surroundings and obtain for himself on his own responsibility all information that may be necessary for preparing the Tender and entering into a contract for the proposed work. The costs of visiting the Site shall be borne by the Tenderer. It shall be deemed that the Contractor has undertaken a visit to the Site of Works and is aware of the site conditions prior to the submission of the tender documents.
- g. The Tenderer and any of his personnel will be granted permission by the Employer to enter upon his premises and lands for the purpose of such inspection, but only upon the express condition that the Tenderer, and his personnel, will release and indemnify the Employer and his personnel from and against all liability in respect thereof and will be responsible for death or personal injury, loss of or damage to property and any other loss, damage, costs and expenses incurred as a result of the inspection.

Amendment of e-Bid Document

- a. At any time prior to the deadline for submission of e-Bid, NMRC may, for any reason, whether at its own in interactive or in response to a clarification requested by a prospective Bidder, modify the e-Bid document by amendments. Such amendments shall be uploaded on the e- procurement website <http://etender.up.nic.in> or NMRC's website www.nmrcnoida.com. The relevant clauses of the e-Bid document shall be treated as amended accordingly.
- b. It shall be the sole responsibility of the prospective Bidder to check the web site <http://etender.up.nic.in> or NMRC's website www.nmrcnoida.com from time to time for any amendment in the e-Bid documents. In case of failure to get the amendments, if any, NMRC shall not be responsible for it.
- c. In order to allow prospective e-Bids a reasonable time to take the amendment into account in preparing their e-Bids, NMRC, at the discretion, may extend the deadline for the submission of e-Bids. Such extensions shall be uploaded on the e-procurement website <http://etender.up.nic.in> or NMRC's website www.nmrcnoida.com.

Preparation and submission of Bids

Language of e-Bid

The e-Bid prepared by the Bidder, as well as all correspondence and documents relating to the e-Bid exchanged by the Bidder and NMRC shall be written in English language. Only English numerals shall be used in the e-Bid. The correspondence and documents in any other language must be accompanied by transcripts verified by the Embassy of Home Country or equivalent.

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Documents constituting the e-Bid

The e-Bid prepared by the Bidder shall comprise the following components:

Technical e-Bid- Technical e-Bid will comprise of -

- a. **Fee details** - Details of Bid processing fee and prescribed EMD
- b. **Eligibility details**- Includes copies of required documents in PDF format justifying that the Bidder is qualified to perform the contract if his/her bid is accepted and the Bidder has financial & technical capability necessary to perform the contract and meets the criteria outlined in the Qualification requirement and technical specification and fulfill all the conditions of the contract.
- c. **Technical evaluation** - Details of all documents needed for Technical evaluation as mentioned in this RFP.

Financial e-Bid -

- a. **Price bid** –Bill of Quantities in XLS format to be filled in after downloading from the e-Procurement website for this e-tender. There shall be a single quote.

Documents establishing Bidder's Qualification

- b. The Bidder shall furnish, as part of its technical e-Bid, documents establishing the Bidder's qualification to perform the contract if its e-Bid is accepted. The documentary evidence should be submitted by the Bidder electronically in the PDF format.
- c. The documentary evidence of Bidder's qualification to perform the contract if its e-Bid is accepted shall be as per qualification requirements specified in e-Bid document.

E-Bid form -

The Bidder shall complete the e-Bid form and the appropriate price schedule/BOQ furnished in the e-Bid document.

E-Bid Currency -

Prices shall be quoted in Indian Rupees only.

Formats and Signing of e-Bid -

- d. The Bidder shall prepare one electronic copy of the technical e-Bid and financial e-Bid separately.
- e. The e-Bid document shall be digitally signed, at the time of uploading, by the Bidder or a person or persons duly authorized to bind the Bidder to the contract. The later authorization shall be indicated by a scanned copy of written power-of attorney accompanying the e-Bid. All the pages/documents of the e-Bid that are to be uploaded shall be digitally signed by the person authorized to sign the e-Bid.
- f. Bidders should provide all the information as per the RFP and in the specified formats. NMRC reserves the rights to reject any proposal that is not in the specified formats.
- g. In case the Bidders intends to provide additional information for which specified space in the given format is not sufficient, it can be furnished in duly stamped and signed PDFs.

Deadline for submission of e-Bid -

E-Bid (Technical and financial) must be submitted by the Bidder at e-procurement website <http://etender.up.nic.in> not later than the time specified on the prescribed date (as the server time displayed in the e-procurement website). NMRC may, at its discretion, extend this deadline for submission of e-Bid by amending the e-Bid document, in which case all

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rights and obligations of NMRC and Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

Submission of e-Bid -

- h. The bid submission module of e-procurement website <http://etender.up.nic.in> enables the Bidders to submit the e-Bid online in response to this e-Bid published by NMRC.
- i. Bid submission can be done only from the bid submission start date and time till the bid submission end date and time given in the e-Bid. Bidders should start the bid submission process well in advance so that they can submit their e-Bid in time.
- j. The Bidder should submit their e-Bid considering the server time displayed in the e-procurement website. This server time is the time by which the e-Bid submission activity will be allowed till the permissible time on the last/end date of submission indicated in the e-Bid schedule.
- k. Once the e-Bid submission date and time is over, the Bidders cannot submit their e-Bid. For delay in submission of e-Bid due to any reasons, the Bidders shall only be held responsible.

The Bidders have to follow the following instructions for submission of their e-Bid:

- a. For participating in e-Bid through the e-Bidding system it is necessary for the Bidders to be the registered users of the e-procurement website <http://etender.up.nic.in>. The Bidders must obtain a user login Id and password by registering themselves with U.P. Electronics Corporation Ltd., Lucknow, if they have not done so previously for registration.
- b. In addition to the normal registration, the Bidder has to register with his/her digital signature certificate (DSC) in the e-Bidding system and subsequently he/she will be allowed to carry out his/her e-Bid submission activities. Registering the digital signature certificate (DSC) is a one- time activity. Before proceeding to register his/her DSC, the Bidder should first log on to the e- Bidding system using the user login option on the home page with the login Id and password with which he/she has registered.

For successful registration of DSC on e-procurement website <http://etender.up.nic.in> the Bidder must ensure that he/she should possess class-2/class-3 DSC issued by any certifying authorities approved by controller of certifying authorities, Government of India, as the e-procurement website <http://etender.up.nic.in> is presently accepting DSC issued by these authorities only. The Bidder can obtain user login Id and perform DSC registration exercise given above even before the e-Bid submission date starts. NMRC shall not be held responsible if the Bidder tries to submit his/her e-Bid at the moment before end date of submission but could not submit due to DSC registration problem.

- c. The Bidder can search for active Bids through "search active tenders" link, select a Bid in which he/she is interested in and then move it to 'My Tenders' folder using the options available in the e-Bid submission menu. After selecting and the Bid, for which the Bidder intends to e-Bid, from "My tenders" folder, the Bidder can place his/her e-Bid by clicking "pay offline" option available at the end of the view Bid details form. Before this, the Bidder should download the e-Bid document and price schedule/bill of quantity (BOQ) and study them carefully. The Bidder should keep all the documents ready as per the requirements of e-Bid document in the PDF format except the price schedule /bill of quantity (BOQ) which should be in the XLS format (excel sheet).
- d. After clicking the 'pay offline' option, the Bidder will be redirected to terms and conditions page. The Bidder should read the terms & conditions before proceeding to fill in the Bid fee and EMD offline payment details. After entering and saving the Bid fee and EMD

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details form so that "bid document preparation and submission" window appears to upload the documents as per technical (fee details, qualification details, e-Bid form and technical specification details) and financial (e-Bid form and price schedule/BOQ) schedules/packets given in the Bid details. The details of the RTGS/NEFT should tally with the details available in the scanned copy and the date entered during e-Bid submission time otherwise the e-Bid submitted will not be accepted.

- e. Next the Bidder should upload the technical e-Bid documents for fee details (e-Bid fee and EMD), Qualification details. Before uploading, the Bidder has to select the relevant digital signature certificate. He may be prompted to enter the digital signature certificate password, if necessary. For uploading, the Bidder should click "browse" button against each document label in technical and financial schedules/packets and then upload the relevant PDF/XLS files already prepared and stored in the Bidder's computer. The required documents for each document label of technical (fee details, qualification details, e-Bid form and technical specification details) and financial (e-Bid form and price schedule/BOQ) schedules/packets can be clubbed together to make single different files for each label.
- f. The Bidder should click "Encrypt" next for successfully encrypting and uploading of required documents. during the above process, the e-Bid document are digitally signed using the DSC of the Bidder and then the documents are encrypted/locked electronically with the DSC's of the bid openers to ensure that the e-Bid documents are protected, stored and opened by concerned bid openers only.
- g. After successful submission of e-Bid document, a page giving the summary of e-Bid submission will be displayed confirming end of e-Bid submission process. The Bidder can take a printout of the bid summary using the "print" option available in the window as an acknowledgement for future reference.
- h. NMRC reserves the right to cancel any or all e-Bids without assigning any reason.

Late e-Bid

- l. Bids received by NMRC after the specified time on the Bid Due Date shall not be eligible for consideration and shall be summarily rejected.
- m. The server time indicated in the bid management window on the e- procurement website <http://etender.up.nic.in> will be the time by which the e-Bid submission activity will be allowed till the permissible date and time scheduled in the e-Bid.
- n. Once the e-Bid submission date and time is over, the Bidder cannot submit his/her e-Bid. Bidder has to start the bid submission well in advance so that the submission process passes off smoothly. The Bidder will only be held responsible if his/her e-Bid is not submitted in time due to any of his/her problems/faults, for whatsoever reason, during e-Bid submission process.

Withdrawal and resubmission of e-Bid

- o. At any point of time, a Bidder can withdraw his/her e-Bid submitted online before the bid submission end date and time. For withdrawing the Bidder should first log in using his/her login id and password and subsequently by his/her digital signature certificate on the e-procurement website <http://etender.up.nic.in>. The Bidder should then select "My bids" option in the bid submission menu. The page listing all the bids submitted by the Bidder will be displayed. Click "View" to see the details of the bid to be withdrawn. After selecting the "bid withdrawal" option the Bidder has to click "Yes" to the message "Do you want to withdraw this bid?" displayed in the bid information window for the selected bid. The Bidder also has to enter the bid withdrawing reasons and upload the letter giving the reasons for withdrawing

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- before clicking the "Submit" button. The Bidder has to confirm again by pressing "OK" button before finally withdrawing his/her selected e-Bid.
- p. No e-Bid may be withdrawn in the interval between the deadline for submission of e-Bids and the expiration of period of e- bid validity. Withdrawal of an e-Bid during this interval may result in the forfeiting of Bidder's e-Bid security.
- q. The Bidder can re-submit his/her e-Bid as when required till the e-Bid submission end date and time. The e-Bid submitted earlier will be replaced by the new one. The payment made by the Bidder earlier will be used for revised e-Bid and the new e-Bid submission summary generated after the successful submission of the revised e-Bid will considered for evaluation purposes. For resubmission, the Bidder should first log in using his/her login Id and password and subsequently by his/her digital signature certificate on the e-procurement website <http://etender.up.nic.in>. The Bidder should then select "My bids" option in the bid submission menu. The page listing all the bids submitted by the Bidder will be displayed. Click "View" to see the detail of the e-Bid to be resubmitted. After selecting the "bid resubmission" option, click "Encrypt & upload" to upload the revised e-Bids documents.
- r. The Bidder can submit their revised e-Bids as many times as possible by uploading their e-Bid documents within the scheduled date & time for submission of e-Bids.
- s. No e-Bid can be resubmitted subsequently after the deadline for submission of e-Bids.

NMRC's right to accept any e-Bid and to reject any or all e-Bids.

- t. Notwithstanding anything contained in this e-Bid, NMRC reserves the right to accept or reject any Bid and to annul the Selection Process and reject all Bids, at any time without any liability or any obligation for such acceptance, rejection or annulment, and without assigning any reasons thereof.
- u. NMRC reserves the right to reject any Bid if:
- At any time, a material misrepresentation is made or uncovered, or
 - The Bidder does not provide, within the time specified by NMRC, the supplemental information sought by NMRC for evaluation of the e-Bid.
- v. Such misrepresentation/ improper response may lead to the disqualification of the Bidder. If such disqualification /rejection occurs after the e-Bid have been opened and the highest ranking Bidder gets disqualified / rejected, then the NMRC reserves the right to consider the next best Bidder, or take any other measure as may be deemed fit in the sole discretion of NMRC, including annulment of the Selection Process.

Period of validity of e-Bid

- w. e- Bid shall remain valid for 180 days after the date of e-Bid opening prescribed by NMRC. An e- Bid valid for a shorter period shall be rejected by NMRC as non-responsive.
- x. In exceptional circumstances, NMRC may solicit the Bidder's consent to an extension of the period of e-Bid validity. The request and the response thereto shall be made in writing.

Correspondence with the Bidder

- y. Save and except as provided in this e-Bid, NMRC shall not entertain any correspondence with any Bidder or its Technical Partners in relation to acceptance or rejection of any e-Bid.

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- z. No Bidders or its Technical Partners shall contact NMRC on any matter relating to his e-Bid from the time of Bid opening to the time contract is awarded.
- aa. Any effort by the Bidder or by its Technical Partners to influence NMRC in the Bid evaluation, Bid comparison or contract award decisions, may result in the rejection of his Bid.

Earnest money deposit (EMD)

- bb. The tenderer shall furnish, as part of its e-Bid, an e-Bid security/ EMD as stated in Data Sheet in form of RTGS/NEFT only in favour **Noida Metro Rail Corporation Limited** in the A/c No. mentioned in **Data Sheet**. The scanned copy of RTGS/NEFT receipt of Security/ EMD with transaction Id certified by the same bank must be enclosed along with the e-Bid. Tender without Earnest Money in the prescribed form, will not be accepted.
- cc. Any e-Bid not secured in accordance with above shall be treated as non-responsive and rejected by NMRC.
- dd. Unsuccessful Bidder's EMD will be returned within 45 days of opening of the Price Bid in case of Conclusion or discharge of the tender through written request.
- ee. No interest will be paid by the Employer on the Earnest Money Deposit.
- ff. The successful Bidder's e-Bid EMD will be adjusted with Performance Bank Guarantee, if applicable, to be submitted by the Bidder upon signing the contract.
- gg. The EMD may be forfeited:-
 - 1. If Bidder (a) withdraws its e-Bid during the period of e-Bid validity specified by the Bidder on the e- bid form: or (b) does not accept the correction of errors or (c) modifies its e-Bid price during the period of e-Bid validity specified by the Bidder on the form.
 - 2. In case of a successful Bidder, if the Bidder fails to sign the contract with the Corporation.

Opening and Evaluation of Bids

Opening of technical e-Bid by NMRC

- hh. NMRC will open all technical e-Bids, in the presence of Bidder's representatives who choose to attend on the prescribed date of opening at NMRC Office. The Bidder's representatives who are present shall submit the letter to NMRC on the letter head of the company stating that the representative (name) is authorized to attend the meeting (Please note – The representative is required to carry a copy during pre-bid and other related meetings as well). He / She shall sign a register evidencing their attendance at NMRC. In the event of the specified date e-Bid opening being declared a holiday for the Corporation, the e –bids shall be opened at the appointed time and place on the next working day.
- ii. The Bidder who is participating in e-Bid should ensure that the RTGS/NEFT of Bid Processing Fee and EMD must be submitted in the prescribed account of NMRC within the duration (strictly within opening & closing date and time of individual e-Bid) of the work as mentioned in Bid notice, otherwise, in any case, e-Bid shall be rejected.
- jj. The Bidders names and the presence or absence of requisite e-Bid security and such other details as NMRC at its discretion may consider appropriate, will be announced at the opening.

Opening of financial e-Bid

- kk. After evaluation of technical e-Bid, through the evaluation committee NMRC shall notify those Bidders whose technical e-Bids were considered non-responsive to the conditions of the contract and not meeting the technical specifications and qualification requirements indicating that their financial e-Bids will not be opened.

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- ll. NMRC will simultaneously notify the Bidders, whose technical e-Bids were considered acceptable to the Corporation. The notification may sent by e-mail provided by Bidder.
- mm. The financial e-Bids of technically qualified Bidders shall be opened in the presence of technically qualified bidders who choose to attend. The date and time for opening of financial bids will be communicated to the technically qualified Bidders subsequently after completion of technical bids evaluation through e-mail provided by the Bidder.

Correction of Errors

- nn. Financial Bids determined to be responsive will be checked by NMRC for any arithmetic errors. Where there is a discrepancy between the rate quoted in the Financial Bid, in figures and in words, the amount in words will prevail over the amounts in figures, to the extent of such discrepancy.
- oo. The amount stated in the Financial Bid will be adjusted by NMRC in accordance with the above procedure for the correction of errors and shall be considered as binding upon the Bidder. If the Bidder does not accept the corrected quoted rate of e-Bid, his e-Bid will be rejected, and his Bid Security shall be liable for forfeiture.

Examination of e-Bid document

- qq. The NMRC will examine the e-Bid to determine if:
 - 1. They are complete;
 - 2. They meet all the conditions of the contract;
 - 3. The required e-Bid Processing fee, EMD and other required documents have been furnished;
 - 4. The documents have been properly digitally signed; and
 - 5. The e-Bids are in order.

Any e-Bid or e-Bids not fulfilling these above requirements shall be rejected.

Contacting NMRC

- rr. No Bidder shall contact NMRC on any matter relating to his/her e-Bid, from the time of the e-Bid opening to the time the contract is awarded. If the Bidder wishes to bring additional information to the notice of NMRC, he/she can do so in writing.
- ss. Any effort by a Bidder to influence NMRC in its decisions on e-Bid evaluation, e- bid comparison or contract award may result in rejection of the Bidder's e-Bid.
- tt. In the event of any information furnished by the Bidder is found false or fabricated, the minimum punishment shall be debarring /blacklisting from Noida Metro works and legal proceeding can also be initiated. EMD of such bidders will be forfeited.

Confidentiality

- uu. Information relating to the examination, clarification, evaluation, and recommendation for the Bidders shall not be disclosed to any person who is not officially concerned with the process or is not a retained professional advisor advising NMRC in relation to or matters arising out of, or concerning the Bidding Process. Any effort by a Bidder to exert undue or unfair influence in the process of examination, clarification, evaluation and comparison of Proposal shall result in outright rejection of the offer, made by the said Bidder.
- vv. NMRC shall treat all information, submitted as part of Bid, in confidence and shall require all those who have access to such material to treat the same in confidence. NMRC may not divulge any such information unless it is directed to do so by any statutory entity that has the power under law to require its disclosure or is to enforce or assert any right or privilege of the statutory entity and/ or NMRC or as may be required by law or in connection with any legal process.

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Award of Contract

- **Award Criteria**

1. NMRC will award the contract as per evaluation criteria stated in the RFP Document.
2. NMRC will award the contract to the successful Bidder whose bid has been determined to be responsive to all the conditions of the contract and meeting the eligibility requirement of the bidding document.

- **Notice of Award (NOA)**

1. Prior to the expiration of the period of e-Bid validity, NMRC will notify the successful Bidder in writing, by letter/e-mail/fax, that its e-Bid has been accepted.
2. The acceptance of NOA will constitute the formation of the contract.

- **Signing of contract**

At the same time as NMRC notifies the successful Bidder that its e-Bid has been accepted, the successful Bidder shall have to sign the contract agreement with relevant document as mentioned in the RFP. The agreement draft along with other related terms and conditions will be same as furnished in this e-Bid. Any refusal will not be allowed. The Bidder need not download and submit in hard copies of these documents.

- **NMRC's right to accept any e-Bid and to reject any or all e-Bids**

NMRC reserves the right to accept or reject any e-Bid, and to annul the e-Bid process and reject all e- Bids at any time prior to contract award, without thereby incurring any liability to the affected tenderer or tenderers.

Tenure

The Corporation intends to appoint a Contractor to NMRC for a period of **4 (Four) months**.

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4. Section 4: Qualification, Evaluation and Selection Process

4.1. Eligibility Criteria

The Bidder's competence and capability is proposed to be established by the following parameters. The Bidder should meet all the criteria given in this section.

- a. The Bidder should be Sole proprietorship/ partnership firm/ public limited company/ private limited company.
- b. The Bidder should have completed in India during last **7 (Seven) years** period ending last day of month previous to the one in which the bids are invited should be either of the following:
 1. One order of similar nature of value not less than **Rs. 41.06 Lakh** (Rupees Forty One Lakh Six Thousand only) or
 2. Two orders of similar nature of value not less than **Rs. 25.66 Lakh** (Rupees Twenty Five Lakh Sixty Six Thousand only) each or
 3. Three orders of similar nature of value not less than **Rs. 20.53 Lakh** (Rupees Twenty Lakh Fifty Three Thousand only) each.

Similar work for this contract shall be "Supply/ installation testing and commission of 33 KV and above Auxiliary Sub-station" in NMRC/ any other Metro Organization/ Central govt./ State govt./PSU's/ Private sector companies.

- c. The Bidder should have minimum average annual turnover of **Rs. 51.32 Lakh** (Rupees Fifty-One Lakh Thirty Two Thousand only) in the last 3 (three) Financial Years (2018-19, 2019-20, 2020-21) preceding the Bid Due Date.
- d. The bidder should not be black listed /debarred/declared ineligible for corrupt and fraudulent practices by any government/ government undertaking/Semi government/ government-controlled institutions in India and should not have any disciplinary proceedings pending against the bidder in last five financial years.
- e. The Bidder should be registered with the Goods and Services Tax Authority.
- f. The Profit of bidder before tax during any of the financial year should be positive during immediately preceding 3 financial years.

NMRC, if required, may seek clarification from bidders during the technical evaluation.

The Bidder shall also furnish the following:

- a. For above criteria 4.1a
 - i. Statutory proof of existence as the legal entity
 - ii. PAN certificate as per legal entity
 - iii. Valid Electrical Contractor License
 - iv. GST Registration Certificate as per legal entity
- b. For above criteria 4.1b
 - i. A statement as in Form 4: Work experience with Work Order/ Signed Contracts/ Completion Certificates, clearly indicating the value and nature of experiences
- c. For above criteria 4.1c,f
 - i. Form 3: Financial Capability Details
 - ii. A copy of the Audited balance sheets and Profit and Loss Statements for the last 3 (three) financial years
In case the Financial Statements for the latest financial year are not audited and therefore the Bidder cannot make it available, the Bidder shall give an undertaking to this effect and the statutory auditor/charted accountant shall certify the same. In such a case, the Bidder shall provide the Audited Financial Statements for 2 (two) years preceding the year for which the Audited Financial Statement is not being provided. Also, pertaining to latest financial year, the bidder shall submit an affidavit certifying that "The Annual Accounts have not been

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audited so far. We are submitting the CA certified provisional accounts, which shall be substantiated by the Audited Accounts, when prepared.”

iii. Self attested copy of ITR for the last 3 (three) financial years

d. For above criteria 4.1d

- Form 7: Undertaking

e. For above criteria 4.1e

- Copy of GST registration

Bid Capacity Criteria:

Bid Capacity: The tenderers will be qualified only if their available bid capacity is more than the approximate cost of work as per NIT. Available bid capacity will be calculated based on the following formula: Bid capacity will be calculated based on the following formula:

Available Bid Capacity = $2 \times A \times N - B$

Where,

A = Maximum of the value of work executed in any one year during the last three financial years (updated to the last day of the previous month of tender submission price level assuming 5% inflation for Indian Rupees every year and 2% for foreign currency portions per year).

N = No. of years prescribed for completion of the work (for four month duration N should be 0.3)

B = Value of existing commitments (as on the last day of the previous month of tender submission) for on-going works during period of 4 months w.e.f. from the first day of the month of tender submission.

Notes:

- Financial data for latest last three financial years has to be uploaded by the tenderer in Form-5 of Tender along with audited financial statements. The financial data in the prescribed format shall be certified by the Chartered Accountant with his stamp and signature in original.
- Value of existing commitments for on-going works during period of 4 months w.e.f. from the first day of the month of tender submission has to be uploaded by the tenderer in Form-4 of Tender. These data shall be certified by the Chartered Accountant with his stamp and signature in original.
- The tender submission of tenderers, who do not qualify the minimum eligibility criteria stipulated in the clauses above, shall not be considered for further evaluation and therefore rejected. The mere fact that the tenderer is qualified as mentioned in above shall not imply that his bid shall automatically be accepted. The same should contain all technical data as required for consideration of tender prescribed in the RFP.

4.2. Compliance with Technical Specifications

The Bidders must comply with the stipulated technical specifications as mentioned in the tender documents

4.3. Information of the Technical and Financial Proposal

- a. The Bidder satisfying technical and financial eligibility criteria under Clause 4.1 shall be considered as technically and financially qualified.
- b. The financial proposal of only technically qualified Bidders shall be opened for evaluation.
- c. The Bidder with the lowest quoted amount for Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station, in the financial quote (L1 bidder) shall be selected for the award of contract.

4.4. Selection of Bidder

After the above evaluation process, the Technically Qualified Bidder, who is declared as L1 (lowest quoted price) may be declared as the selected Bidder (“Selected Bidder”) for the Project.

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- a. In case, two or more technically qualified bidders quote the same rate in the Commercial Bid, and become Lowest (i.e. L1), then the tender would be awarded to the bidder who has the highest / higher Average Annual Turnover from 'Similar Works' (as per Minimum Eligibility Criteria defined in Section 4 under "Definition of Similar Work") during the last 3 years ending on the last day of the month preceding the month in which the tender has been floated.
- b. Prior to the expiry of the period of bid validity, NMRC will notify the successful bidder in writing, either through Notice of Award (NOA), that his bid has been accepted.
- c. The NOA would be sent in duplicate to the successful bidder, who will return one copy to NMRC duly acknowledged, signed and stamped on each page by the authorized signatory of the bidder, as an unconditional acceptance of the NOA, within 10 (ten) days from the date of issue of NOA.
- d. No correspondence will be entertained by NMRC from the unsuccessful bidders.

4.5. Notice of Award and Execution of Contract Agreement

- a. NMRC will notify the Successful Bidder by a NOA that its bid has been accepted.
- b. The Selected Bidder shall, within 10 (ten) days of the receipt of the NOA, sign and return the duplicate copy of the NOA in acknowledgement thereof along with letter of acceptance of NOA. In the event, the duplicate copy of the NOA duly signed by the Selected Bidder and letter of acceptance of NOA is not received by the stipulated date, NMRC may, unless it consents to extension of time for submission thereof, appropriate the Bid Security of such Bidder as mutually agreed genuine pre-estimated loss and damage suffered by NMRC on account of failure of the Selected Bidder to acknowledge the NOA
- c. The Successful Bidder shall execute the Contract Agreement within 30 (thirty) days of the letter of acceptance of NOA or such extended period as may be decided by the Corporation.
- d. Failure of the Successful Bidder to comply with the requirement of acknowledgement of NOA shall constitute sufficient grounds for the annulment of the NOA, and forfeiture of the bid security.
- e. **NMRC reserves the right to increase or decrease the quantity up to 25% of the quantity offered by the successful tenderer. The bidder is bound to accept the increase or decrease in the tendered quantity up to 25% under this clause without any change in unit price.**

In case the variation in individual items or the group of items as stipulated above, is more than 25% on plus side, the rate for the varied quantity beyond 25% shall be negotiated between the NMRC and the Contractor and mutually agreed rates arrived at before actual execution of the extra quantity. In case the contractor executes the extra quantity without written approval of the NMRC with specific instructions to execute pending the finalization of rates, the payment shall be made at contract rate only. In the event of disagreement, the Engineer shall fix such rates of price as are, in his opinion appropriate and shall notify the Contractor accordingly, with a copy to the Employer. Until such time as rates or prices are agreed or fixed, the Engineer shall determine provisional rates or prices to enable on account payments to the Contractor. Alternatively, in the event of disagreement, the Contractor shall have no claim to execute extra quantities/new items and the Engineer shall be free to get such additional quantities beyond 25% new items executed through any other agency. However, if the Engineer or the Employer so directs the Contractor shall be bound to carry out any such additional quantities beyond the limits stated above original quantities and or new items and the disagreement or the difference regarding rates to be paid for the same shall be settled in the manner laid down under the conditions for the settlement of dispute.

4.6. Performance Bank Guarantee / Security Deposit

- a. To fulfill the requirement of performance bank guarantee during the implementation period, the Successful Bidder (herein referred to as the "Contractor") shall deposit **10 % of the Contract Price** in form of FDR/ DD or unconditional and irrevocable Bank Guarantee bond issued by a scheduled bank in favor of NMRC, which may be reduced for balance years on completion of each year, within 30 days from Notice of Award. Non submission shall attract penalties as per GCC Clause 4.2.1. EMD amount of successful bidder shall be adjusted in the performance bank guarantee, if

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applicable. For unsuccessful bidder, EMD shall be refunded without any interest. The Performance Guarantee should be valid for a period of 06 (six) months beyond the completion of warranty period.

- b. In case of joint venture/consortium, the Performance Security is to be submitted in the name of the JV / Consortium. However, splitting of the performance security (while ensuring the security is in the name of JV / Consortium) and its submission by different members of the JV / Consortium for an amount proportionate to their scope of work is also acceptable.
- c. It is to note that if contract value increases by more than 25% of the original contract value, the performance bank guarantee shall be increased accordingly.
- d. A Contract agreement will have to be signed by the Contractor at his cost on proper stamp paper. Without performance guarantee by Contractor, Contract agreement shall not be signed.
- e. NMRC reserves the right for deduction of NMRC dues from Contractor's Performance Bank Guarantee/ Security Deposit (interest free) for – Any penalty imposed by NMRC for violation of any terms and conditions of agreement committed by the Contractor.
- f. Any amount which NMRC becomes liable to the Government/Third party due to any default of the Contractor or any of his director/ employees/ representatives/ servant/ agent, etc. shall be borne by the contractor.
- g. Any payment/ fine made under the order/judgment of any court/consumer forum or law enforcing Contractor or any person duly empowered in his behalf.
- h. Any outstanding payment/ claims of NMRC remained due after completion of relevant actions as per agreement.
- i. Once the amount under above Clause is debited, the Contractor shall replenish the Security Deposit/ Performance Bank Guarantee to the extent the amount is debited within 15 days period, failing which, it shall be treated as Contractor Event of Default and will entitle NMRC to deal with the matter as per the provisions of RFP and Contract Agreement.

4.7. Contract during Proposal Evaluation

- a. Proposals shall be deemed to be under consideration immediately after they are opened and until such time NMRC makes official intimation of award/ rejection to the Bidders. While the Proposals are under consideration, Bidders and/ or their representatives or other interested parties are advised to refrain from contacting by any means, NMRC and/ or their employees/ representatives on matters related to the Proposals under consideration till the time Contract is awarded.
- b. Any effort by a Bidder to influence NMRC in its decisions on Bid evaluation, Bid comparison or contract award may result in rejection of the Bidder's Bid.
- c. In the event of any information furnished by the Contractor is found false or fabricated the minimum punishment shall be debarred/ blacklisting and the legal proceeding may also be initiated.
- d. If the Bidder wishes to bring additional information to the notice of NMRC, he/she can do so in writing. All correspondence/ enquiry should be submitted to the following in writing by fax/ post/courier:

GM/Technical

Noida Metro Rail Corporation (NMRC) Limited
Block-III, 3rd Floor, Ganga Shopping Complex, Sector-29,
Noida -201301
District Gautam Budh Nagar, Uttar Pradesh
Email: nmrcnoida@gmail.com
nmrcjgmelectrical@gmail.com

- e. No interpretation, revision, or other communication from NMRC regarding this solicitation is valid unless in writing and signed by the competent authority from NMRC.

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4.8. Other Instruction

- a. Canvassing in connection with the tenders is strictly prohibited and the tenders, submitted by Bidder, who resort to canvassing, are liable to be rejected. EMD will be forfeited of those tenders who will be found non serious and if it is felt by the tender committee that the Bidders submitted their tender only to influence the tendering process.
- b. On acceptance of the tender, the name of the accredited representative of the Contractor, who would be responsible for taking instructions from the NMRC or the official deputed by NMRC, shall be communicated to the NMRC or the official deputed by NMRC in writing.

4.9. Project Financial Terms

4.9.1. Payment Terms

- a. The payment for items given in Bill of Quantity/Pricing Document shall be made on the basis of actually executed quantities however stages of payment shall be as per SCC clause 22.
- b. The payment will be made only for the work actually carried out as per the schedule of work (Bill of Quantity) completed & handed over to the user.
- c. Income Tax is deductible at source while effecting payment of bills at the prescribed percentage as per the orders of the government.
- d. GST, if claimed, will be reimbursed only if the GST registration number is mentioned in the invoice and GST is duly paid by the contractor and it is reflected on the GST Portal. In the absence of GST registration number and GST payment by contractor, GST will not be reimbursed.
- e. Quote PAN and GST on all correspondence, Bills, Vouchers and other documents otherwise TDS at higher of the prescribed rate will be deducted.
- f. All payments to the contractors will be made by e-Payment /Account Payee Cheques. Quarterly payment shall be made on receipt of the bill complete & correct in all respect along with the supporting documents subject to deduction of statutory charges/taxes/duties/levies etc.
- g. Bills, correct in all respect, shall be submitted to Engineer-In-Charge, in duplicate along with supporting documents, who will arrange payment through Departments, NMRC
- h. No advance of any type shall be paid.
- i. TDS on quarterly invoice of tenderer is deducted while processing quarterly bills as per Govt. Guidelines.

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5. Section 5: Special Conditions of Contract (SCC)

SCC Clause	Reference to GCC Sub-Clause No.	Description
1	Sub-Clause 3.2	<p>Functions of Engineer</p> <p>In addition to the duties mentioned in Clause 3.2 of General Conditions of Contract:</p> <ul style="list-style-type: none"> (i) Shall watch and inspect the Works, monitor and examine any material to be used and workmanship employed by the Contractor in connection with the Works; (ii) Shall carry out such duties and exercise such powers vested in the Engineer in accordance with the provisions of the Contract; (iii) Shall issue instructions which in his opinion are necessary for the execution of the Works; and (iv) May issue any other instruction which in his opinion is desirable in connection with the Works. <p>In case The Engineer is employee of any agency hired by the Employer, the Engineer shall take the approval of the Employer for all technical and financial matters otherwise he shall be deemed to have taken the approval of the Employer.</p>
2	Sub Clause 4.2.1	<p>Performance Security</p> <p>The amount of Performance Security for this contract will be 10% of contract value. If the contract value increases by more than 25% of the original contract value, the Performance Security will be increased accordingly for complete revised value on every increase. Performance security should be submitted within 30 days from date of issue of LOA. Non compliance will attract penalty as per GCC Clause 4.2.1.</p>
3	Sub-Clause 4.4	<p>Coordination with other Contractors</p> <p>The contractor for this package shall plan and execute work in coordination and in co-operation with other contractors working for adjacent/other packages</p>
4	Sub-clause 4.5	<p>Sub-contractors</p> <p>The work should not be sublet without the written approval of Engineer in-charge.</p>
5	Sub-Clause 4.10	<p>Sufficiency of Tender</p> <p>The Tenderer shall be entirely responsible for sufficiency of rates quoted by him in his tender.</p> <p>The Contractor (Successful Tenderer) shall be paid for only at quoted/accepted rates for the items of works executed as per BOQ.</p>
6	Sub-Clause 4.11	<p>Access Route</p> <p>All operations for the execution of the Works shall be carried out so as not to interfere unnecessarily with the convenience of the public or the access to public or private roads or footpaths or properties owned by the Employer or by any other person.</p> <p>The Contractor shall select routes, choose and use vehicles so that movement of Contractor's Equipment, Plant and Materials from and to the Site is limited so that traffic is not delayed and damage to highways and bridges is prevented. If there is any delay or damage or injury, the cost of rectification or reconstruction of highways or bridges shall be borne by the Contractor. The Contractor shall 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</p>
7	Sub-	Manufacture, Installation and Construction Methods

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SCC Clause	Reference to GCC Sub-Clause No.	Description
	Clauses 5.3	<p>The Contractor shall submit complete documents and information pertaining to the methods of manufacture, installation and construction which the Contractor proposes to adopt or use, (and if applicable such calculations of stresses, strains and deflections and the like that will or may arise in the Works or to the other works comprising the Project or any parts thereof during installation from the use of such methods). The Engineer will then check to see whether, if such methods are adhered to, the Works can be executed in accordance with the Contract and without detriment to the Works (when completed) and to other works comprising the Project and in a manner which minimizes disruption to road and pedestrian traffic.</p> <p>The Engineer shall inform the Contractor in writing within 21 days after receipt of the above information;</p> <p>(a) that the Contractor's proposed methods of manufacture, installation and construction have the consent of the Engineer; or</p> <p>(b) in what respects, in the opinion of the Engineer the Contractor's proposed methods of manufacture, installation and construction:</p> <p>(i) fail to comply with the Employer's Requirements and/or the Definitive Design and/or the Final Design;</p> <p>(ii) would be detrimental to the Works and/or to the other works comprising the Project;</p> <p>(iii) do not comply with the other requirements of the Contract;</p> <p>(c) as to the further documents or information which are required to enable the Engineer to properly assess the proposed methods of manufacture, installation and construction.</p> <p>In the event that the Engineer does not give his consent, the Contractor shall take such steps or make such changes in the said methods or supply such further documents or information as may be necessary to meet the Engineer's requirements and to obtain his consent. The Contractor shall not change the methods of manufacture, installation and construction which have received the Engineer's consent without further review and consent in writing of the Engineer.</p> <p>Notwithstanding the foregoing provisions of this Clause, or that certain of the Contractor's proposed methods of manufacture, installation and construction may be the subject of the consent of the Engineer, the Contractor shall not be relieved of any liability or obligation under the Contract.</p>
8	Sub-Clauses 4.16 and 6.7	<p>Safety Precautions</p> <p>The Contractor is required to make himself aware of all the requirements of the Employer's Safety, Health and Environmental Manual in this regard and comply with them. The Site Safety Plan shall include detailed policies, procedures and regulations which, when implemented, will ensure compliance with Sub-Clauses 4.16 and 6.7 of General Conditions of Contract.</p> <p>The Contractor shall, from time to time and as necessary or required by the Engineer, produce supplements to the Site Safety Plan such that it is at all times a detailed, comprehensive and contemporaneous statement by the Contractor of his site safety and industrial health obligations, responsibilities, policies and procedures (under the laws of India) or as stated in the Contract or</p>

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SCC Clause	Reference to GCC Sub-Clause No.	Description
		<p>elsewhere relating to work on Site If at any time the Site Safety Plan is, in the opinion of the Engineer, insufficient or requires revision or modification to ensure the security of the Works and the safety of all workmen upon, and visitors to the Site, the Engineer may instruct the Contractor to revise the Site Safety Plan. The Contractor shall, within 14 days, submit the revised plan to the Engineer for review.</p> <p><u>The contractor shall provide necessary barriers warning signals and other safety measures to avoid accidents.</u></p> <p>He shall also indemnify department against claims for compensation arising out of negligence in this respect. Nothing in these specifications shall be construed to relieve the contractor of his responsibility for the design, manufacture and installation of the equipment with all accessories in accordance with applicable statutory regulations and safety codes in force from the safety angle.</p>
9	Sub-Clause 4.17	<p>Protection of the Environment</p> <p>The Contractor shall maintain ecological balance by preventing deforestation, water pollution and defacing of natural landscape. The Contractor shall, so conduct his cleaning operations, as to prevent any avoidable destruction, scarring or defacing of natural surroundings in the vicinity of work. In respect of ecological balance, the Contractor shall observe the following instructions</p> <ul style="list-style-type: none"> (a) Where destruction, scarring, damage or defacing may occur as a result of operations relating to construction and maintenance activities, the same shall be repaired, replanted or otherwise corrected at Contractor's expense. All work areas shall be smoothened and graded in a manner to confirm to natural appearance of the landscape as directed by the Engineer. (b) All trees and shrubbery, which are not specifically required to be cleared or removed for cleaning purposes, shall be preserved and shall be protected from any damage that may be caused by Contractor's cleaning operations and equipment. The removal of trees or shrubs will be permitted only after prior approval by the Engineer. Trees shall not be used for anchorage. The Contractor shall be responsible for injuries to trees and shrubs caused by his operations. The term "injury" shall include, without limitation, bruising, scarring, tearing and breaking of roots, trunks or branches. All injured trees and shrubs shall be restored as nearly as practicable, without delay, to their original condition at Contractor's expenses. (c) The Contractor shall provide all necessary access, assistance and facilities to enable the Engineer and the Employer to monitor and conduct tests to verify that the Site Environmental Plan is being properly and fully implemented
10	Sub-Clause 4.18	<p>Electricity and Water</p> <p>Electricity and water shall be arranged by the contractor on his own and at his cost.</p> <p>If available, the Employer may provide Water supply and Electricity on chargeable basis. The contractor shall make his own arrangements to tap the Electricity from the nominated and existing sockets/ points. The contractor shall tap the Electricity as per IE Rules & IE Act (Latest) duly complying all safety precautions and under following conditions:</p> <ul style="list-style-type: none"> (a) The contractor shall submit full scheme for the requirement of Electricity & water. If scheme mentions Electricity requirement which is beyond the capacity of the Employer, in that case the contractor shall make his own arrangements/ alternative arrangements.

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SCC Clause	Reference to GCC Sub-Clause No.	Description
		(b) The Contractor should make his own arrangements to draw the water from the available water point to the working place without affecting the premises
11	Sub-Clause 4.19	Employer Supplied Machinery and Materials The Employer will not provide any machinery or materials under the Contract.
12	Sub Clause 4.27	<p>Security of the Site The Contractor shall take all measures necessary to ensure such security, including exercising control over all persons and vehicles which are employed or engaged on the Site or in connection with the Works or the other works comprising the Project and with the security arrangements applicable to any other site within the Project.</p> <p>The Contractor shall arrange the issue of passes for the admission of all persons and vehicles to the Site or to any part thereof and may refuse admission to or remove from the Site any person or vehicle failing to show an appropriate pass on demand to any duly authorised person.</p> <p>If required by the Engineer, the Contractor shall submit a list identifying all persons to whom passes have been issued together with two photographs of each person and all entities to which a pass has been issued in respect of any vehicle and shall satisfy the Engineer of the bonafides of any such person or entity.</p> <p>The Contractor shall not, without the written permission of the Engineer or otherwise in accordance with the Contract, allow access to the Site to any person unless the presence on Site of such person is necessary in connection with the execution of the Works or with the discharge of the duties of any relevant authority.</p> <p>For the purposes of this Clause only, "Site" shall include off-Site places of manufacture or storage and the Contractor's Work Areas and shall include, areas provided to the Contractor by others.</p>
13	Sub-Clause 5.3	<p>Submission of Documents The Contractor shall submit the drawings and documents, test certificates, warranty certificates, calibration certificates of supplied items wherever required or as required by the Engineer in charge & No Objection Certificate from UP Electrical safety department.</p> <p>This submittal shall be made sufficiently before the Works are to be carried out to give the Engineer and the Employer reasonable time to examine the drawings or other documents, to prepare comments and for any changes to be accommodated by the Contractor.</p> <p>Where the consent of the Engineer is required, the Engineer shall notify the Contractor in writing of his decision either within such period as may expressly be stipulated in the Contract or otherwise within a reasonable time.</p>
14	Sub-Clause 6.0	<p>Training of Contractor's Employees / Staff / Workers Contractor shall provide a training / workshop on Safety, Health & Environment (SHE) to all its workers/ employees/ sub-contractors at the time of induction as per required of condition of contract on Safety, Health and Environment. Before posting any of his workers/ staff/ employees/ sub-contractors, the contractor shall give a certificate that the said person had undergone the requisite SHE training.</p>
15	Sub-Clause 6.4	<p>Labour Laws : (a) The Contractor shall, if required by the Employer, deliver to the Engineer or to his office; a return in detail, in such form and at such intervals as the</p>

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SCC Clause	Reference to GCC Sub-Clause No.	Description
		<p>Employer may prescribe, showing the number of labour employed in different categories by the Contractor for the entire work.</p> <p>The contractor must ensure compliance of all the statutory labour laws including labour license and registration of workers as per BOCW Act.</p> <p>(b) <u>Violation of these basic provisions shall attract a penalty of 5% of contract value</u> and repeated violations shall lead to termination of contract.</p>
16	Sub-Clause 6.6	<p>Housing Facilities The Contractor shall have to make his own arrangements for housing facilities for his staff.</p>
17	Sub-Clause 6.7	<p>Health and Safety Contractors are required to have tie-up with well equipped reputed hospitals having facilities of MRI, CT Scan, Ultrasound, Blood Bank, specialist Doctors like neurosurgeon, orthopedic as mandatory requirement and fire station located in the neighborhood for attending to the casualties promptly and emergency vehicle kept on standby duty during the working hours for the purpose.</p>
18	Sub Clause 7.0	<p>Quality Control The Contractor shall appoint a suitably qualified and experienced person, not otherwise engaged in the performance of the Contract, to act as manager of the quality assurance system and shall provide such other personnel and resources as required to ensure effective operation of the quality assurance system. The said manager shall carry out audits of the application of the quality assurance system, and ensure effective quality control and delivery of quality assurance.</p> <p>The Contractor shall provide all necessary access, assistance and facilities to enable the Engineer to carry out surveillance visits both on and off the Site to verify that the quality assurance system is being properly and fully implemented. No extra payment shall be made in this regard and the cost of the Work under this element shall be deemed to be included in the Contract Price.</p>
19	Sub Clause 8.5	<p>Liquidity damages 0.5% of the contract value per week of delay.</p>
20	<p>Sub-Clause 11.1</p> <p>Sub-Clause 11.1.1</p> <p>Sub-Clause 11.1.4</p>	<p>Contract Price & Payment In respect of All Inclusive Contract The Contract Price, subject to any adjustment thereto in accordance with the contract conditions, shall be all inclusive (including all taxes, duties, royalties etc.)</p> <p>Change in Taxes Duty (a) "Change in Taxes/Duties/Levies" means the occurrence or coming into force of the following, at any time after the date of submission of tender. (i) Any new tax which is imposed on Composite Works Contractors applicable on Metro Project. (ii) Change in the rate of GST on Composite Works Contractors applicable on Metro Project as Per GST Act.</p> <p>(b) The Contract Price shall be adjusted due to any of the above two conditions. Adjustment in contract price will be applicable up to the stipulated date of completion of work including the extended period of completion where such extension has been granted under sub clause 8.4.1 of GCC or it is specifically mentioned that extension is with adjustment for changes as stated above.</p>

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SCC Clause	Reference to GCC Sub-Clause No.	Description
		<p>(c) If the extension of contract period is on account of contractor's fault under Sub-clause 8.4.3 of GCC, no compensation shall be made towards upward revision towards "change in Taxes/Duty (taking place during the said extended contract period)" as mentioned at Sl. No. (a) (i) & (ii) above, during the original contract period or extended contract period shall be on employer's account.</p> <p>(d) Any other changes (except on account of clause (a) (i) & (ii) above) in existing taxes/new taxes on supply of materials/services/works etc. will not be considered and its impact shall be considered covered in the price variation clause provided in the Contract and in Contract where Price Variation clause is not provided, the impact on any other change (except on account of clause (a) (i) & (ii) above in existing taxes/new taxes on supply of materials/services/works etc. will be deemed to be included in the quoted contract price.</p> <p>(e) Also, the contract price shall not be adjusted on account of fluctuations in the rates of exchange between the foreign currencies of the contract and Indian rupees from the last date of submission of tender.</p>
21	Sub clause 11.1.3	<p>Price Variation</p> <p>This is a fixed price contract and no Price Variation is admissible in this contract.</p>
22	Sub-Clause 11.2	<p>Advance</p> <p>No Advance is admissible in this contract.</p>
23	Sub-Clause 11.6	<p>Payment</p> <p>For the purpose of On-account payment, the contractor shall submit detailed activities carried out as per BOQ recorded in Measurement sheets, Abstract sheets along with recorded bill for the item actually executed for checking and payment. Payment will be effected based on unit rates as approved in the Bill of Quantities.</p> <p>TERMS OF PAYMENTS</p> <ul style="list-style-type: none"> • The standard payment terms subject to recoveries, if any, by way of liquidated damages will be as under. <ul style="list-style-type: none"> A) 70% payment of the supply value of equipment will be made on Delivery at NMRC sites. B) 30% payment will be made after submission/compliance of following: <ul style="list-style-type: none"> a) Five sets of completion drawings comprising the following shall be submitted by the contractor while handing over the installation. <ul style="list-style-type: none"> ▪ Equipments layout drawing(s) giving complete details of the entire equipments. Electrical drawings for the entire electrical equipments showing cable sizes, equipment capacities, switch-gear's ratings, control components, control wiring etc. ▪ Schematic diagram of the entire augmented job. b) Training of operation and maintenance staff of the NMRC to be provided by contractor. c) At the time of final completion, the contractor shall arrange

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SCC Clause	Reference to GCC Sub-Clause No.	Description
		<p>for inspection and testing of the installation. Test results obtained shall be recorded. The installation shall not be accepted until it complies with the requirement of these Specifications. The Sub Station installation shall be got inspected by the contractor from local licensee and/or Electrical Inspector and their clearance taken before energizing the Sub Station. All the observations/ deficiencies pointed out by the inspecting authorities shall be complied with by the contractor on priority. The department shall render all help and pay mandatory charges to Electrical Inspector and local licensee, if any, in this regard</p> <p>Payment should be followed strictly as per terms and conditions of Tender Documents and Tax.</p>
24	Sub-Clause 15.0	<p>Insurance</p> <p>(a) All of the contractor's employees drawing monthly wages up to ₹21,000/- or as applicable as per the enhanced limit, shall have to be covered under ESI. The Contractor shall take insurance policy as specified in the Employee's Compensation Act only for those employees who are not covered by ESI.</p> <p>(b) The contractor shall insure against liability to third parties in the joint name of the Employer and the contractor for any loss, damage, death or injury which may occur to any physical property (except things insured otherwise) or any person (except person insured by employer, staff of other contractor working in the premises, contractor's staff under sub clause above which may arise out of the performance of the contract. The insurance shall be at least for the amount of ₹7,50,000/- for each incident.</p> <p>(c) Insurance cover for Contractor's All Risk shall be full value of Contract price.</p>
25	Sub-Clause 18.1	<p>Notices and Instructions</p> <p>The Contractor shall furnish to the Employer/Engineer the postal address of his office at Delhi NCR. Any notice or instructions to be given to the Contractor under the terms of the contract shall be deemed to have been served on him if it has been delivered to his authorized agent or representative at site or if it has been sent by registered post to the office, or to the address of the firm last furnished by the Contractor.</p> <p>The Contractor shall establish an office in the Delhi NCR in consultation with the in charge for planning, co-ordination and monitoring the progress of the Work and intimate the same in writing to in charge. In addition, the Contractor may set up field offices at convenient and approved locations for co-ordination and for monitoring the progress of fieldwork at his own cost.</p>

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6. Section 6: Technical Specification

6.1. CODES & STANDARDS:

- All equipments and material shall be designed manufactured and tested in accordance with the latest applicable IEC standards. The 1000 kVA dry type Transformer shall comply with standards in force when the transformer is manufactured, particularly IEC 60076; Latest version, IS 2026; Latest version and IS 11171/1985. LV Panel shall strictly be as per IEC-61439.

6.2. Equipment Specification (Transformer and cables)

6.2.1. 33KV/415V, 1000 KVA Cast Resin Dry Type Transformer

Transformer should be type tested and the report should not be more than 5 years old. Transformer shall also comply with standards in force when the transformer is manufactured, particularly IEC 60076, Latest version, IS 2026; Latest version and IS 11171/1985.

6.2.2. Characteristics

- Climatic conditions:	indoor operation
- Operation:	continuous
- Windings:	ALUMINIUM
- Primary line voltage (across phases):	33 kV
- Secondary voltage, off-load line voltage at 33 kV primaries:	415 V
- Secondary voltage at full load and power factor 0.8:	400 V
- Insulation rated voltage:	36 kV
- Frequency:	50 Hz
- Withstand at industrial frequency:	70 kV
- Voltage surge withstand:	170 kV
- Coupling:	delta-star, separate neutral (Dyn11)
- Cooling:	natural
- Off load tap changer:	0, $\pm 2.5\%$ and $\pm 5\%$
- Class of Insulation	F Class

The voltage shall be adjusted by a 5 positions switch which provides -5%, - 2.5%, 0, + 2.5%, and + 5% settings.

The magnetic circuit shall be in low-loss oriented-grain silicon steel sheet.

The primary and the secondary windings shall be capable of withstanding a symmetrical three-phase short-circuit regardless of the tapping selected. The short circuit level at secondary side for 1000 KVA transformers shall be as follows:

1000kVA 24.0 kA

HV Connections of Transformer shall be connected through insulated cables.

6.2.3. Accessories

- Lifting rings
- Nameplate
- Grounding terminal.
- Frame Channels

The cable connection with different terminals of transformer shall be through C – Type or suitable connector for clearances from transformer windings. HV terminals shall have suitable arrangement to provide sufficient clearance to 33 kV cables from the transformer windings.

Secondary neutral of transformers shall be solidly earthed.

6.2.4. Temperature Protection

Transformers shall be fitted with a temperature protection system that allows winding temperatures to be monitored.

This shall consist of two sensors placed on each low-voltage winding: one alarm sensor and one trip-out sensor. So, three alarm sensors (one per low-voltage winding) and three trip-out sensors (one per low-voltage winding) shall be provided.

An indicator shall be installed on the front door of the bay to indicate continuously the winding temperature. This shall be installed on the middle low voltage winding.

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Temperature monitoring devices with two thresholds (alarm and tripping) must be provided and located on the upper part of the secondary windings.

6.2.5. Transformer Values

Following characteristics should be confirmed for power transformer:

- Short-circuit voltage,
- No-load losses,
- Full-load copper losses

Minimum efficiency at different load conditions

i.e, from ¼ load to full load and at minimum 0.8 power factor = 98.20%

6.2.6. Transformer Cubicle

Transformers shall be installed in sheet steel panels which can be assembled & dismountable at site. The transformers may be supplied in a cubicle with enclosure without any HV portions exposed. The door shall be provided with a mechanical system interlock, to ensure that it is possible to open the door only when the protection circuit breakers on the HV side as well as LV side of the transformer are in 'Open' position. Also Opening of transformer door shall cause tripping of CB on Primary & Secondary side i.e 33KV CB and LVCB.

Enclosure shall have inspection windows to view primary and secondary sides.

Cable arrangement should not block the passage for removal of any of the transformer during service in future. The bimetallic strips if required for connection shall be provided by Contractor.

6.2.7. Transformer fire protection scheme

The scope covers supply, installation, testing and commissioning of automatic clean agent flooding system considering the following when computing volume to verify suitability and to establish design limitations complete for dry type transformers.

- o Volume hazard area.
- o Specific volume of clean agent.
- o Discharge time and flow rate.
- o Design concentration and design factors.
- o Detectors/discharge tubing placement.

Locate clean agent supply near each hazard area.

Interface system with main control fire alarm system. Provide total flooding of 4.2 percent clean agent concentration by volume as per NFPA- 2001.

The agent provided should confirm to the below:

- o The agent should have Ozone Depletion Potential of Zero.
- o The agent should have a atmospheric lifetime of less than 10 days.
- o The agent should not have Global Warming Potential of more than 1.
- o The agent should be Low Pressure in nature.

6.2.8. Specifications for 1000kVA Cast Resin Dry Type Transformer

DESCRIPTION	U	VALUES
		Required
Manufacturer		
Place of manufacture		
Port of embarkation		
Manufacturer drawing reference		
Service		Continuous
Standards		IEC 60076
Insulation type		Cast resin
Rated power	kVA	1000
Cooling mode		AN
Primary rated insulation voltage	kV	36
Primary operating voltage	kV	33
Secondary rated operating voltage	V	415/240
Rated short duration power frequency	kV	70

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withstand voltage for primary winding		
Rated lightning impulse withstand voltage for primary winding	kV	170
Short-circuit voltage	%	6
Voltage setting (off load tap changer)	%	-5.0, -2.5, 0, +2.5, +5.0
Coupling		Dyn11
Maximum noise level	dBA	74
Maximum iron losses	W	2450
Maximum load losses	W	7650
Dimensions (maximum)*		
Length	mm	2600
Width	mm	2000
Height	mm	2550

6.2.9. Protection Relay

Relay settings of Protection relays provide on HT breaker shall be revised based on replaced transformer.

6.2.10. Cables and terminations

Supply & laying of 33 kV grade 3x1Cx95 sqmm Copper XLPE insulated PVC sheathed cable and termination of above cable at GIS end and transformer end. GTP of MV cable shall be as follows:

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DESCRIPTION	UNIT	DATA OFFERED			
Manufacturer		Sterlite Power Transmission Limited			
Cable Size	Sq.mm.	400	300	95	240
Cable Type		Copper XLPE Insulated PVC Sheathed Cables	Aluminium XLPE Insulated PVC Sheathed Cables	Copper XLPE Insulated PVC Sheathed Cables	Copper XLPE Insulated PVC Sheathed Cables
Voltage Grade U0/U (U2)	KV	18/30 (36)	18/30 (36)	18/30 (36)	1.8/3.0 (3.6)
Reference Standard		Generally as per IEC 60502-2	Generally as per IEC 60502-2	Generally as per IEC 60502-2	Generally as per IEC 60502-1
No. and cross sectional area of conductor	sq.mm.	1C x 400	1C x 300	1C x 95	1C x 240
Conductor Material		Annealed Plain Copper as per IEC 60228	E.C Grade Aluminium as per IEC 60228	Annealed Plain Copper as per IEC 60228	Annealed Plain Copper as per IEC 60228
Shape		Stranded Circular Compacted	Stranded Circular Compacted	Stranded Circular Compacted	Stranded Circular Compacted
Class/Standard		Class 2/ IEC 60228	Class 2/ IEC 60228	Class 2/ IEC 60228	Class 2/ IEC 60228
Nominal Diameter of Conductor	mm	Conductor diameter shall be so chosen so as to meet the conductor resistance requirement as per IEC 60228			
Conductor Screen Materials		Extruded semi-conducting compound	Extruded semi-conducting compound	Extruded semi-conducting compound	Extruded semi-conducting compound
Nominal thickness of conductor screen	mm	0.7 (nom.)	0.7 (nom.)	0.7 (nom.)	0.3 (nom.)
Insulation Material		Extruded XLPE Compound	Extruded XLPE Compound	Extruded XLPE Compound	Extruded XLPE Compound
Nominal thickness of insulation	mm	8.0 (nom.)	8.0 (nom.)	8.0 (nom.)	2.0 (nom.)
Nominal Diameter Over Insulation	mm	41.5 (approx.)	38.0 (approx.)	29.0 (approx.)	23.5 (approx.)
Insulation screen material (Non-Metallic)		Extruded semi-conducting compound (Bonded Type)	Extruded semi-conducting compound (Bonded Type)	Extruded semi-conducting compound (Bonded Type)	Extruded semi-conducting compound (Bonded Type)
Nominal Thickness of Insulation screen	mm	0.7 (nom.)	0.7 (nom.)	0.7 (nom.)	0.3 (nom.)
Nominal Thickness of Tape	mm	0.04 approx. for Open Helix Copper Tape used as a binder Tape over Copper Wire Screen	0.04 approx. for Open Helix Copper Tape used as a binder Tape over Copper Wire Screen	0.04 approx. for Open Helix Copper Tape used as a binder Tape over Copper Wire Screen	0.04 approx. for Open Helix Copper Tape used as a binder Tape over Copper Wire Screen
No. and diameter of Copper Wire Screen wires	No./mm	Number of Wires, Diameter & Cross sectional area of Copper Wire Screen shall be so chosen so as to meet the requirement of earth fault current of 1 kA for 3 sec.			
Cross sectional Area	Sq.mm				
Outer sheath material		FRLS PVC type ST-2	FRLS PVC type ST-2	FRLS PVC type ST-2	FRLS PVC type ST-2
Nominal Thickness of outer sheath*	mm	1.88 (min.)	1.8 (min.)	1.6 (min.)	1.4 (min.)
Colour of Outer Sheath		Black			
Nominal overall diameter (± 2mm)	mm	55	50	41	34
Minimum bending radius	mm	20 times OD			15 times OD
Max. DC conductor resistance at 20 deg C	Ohm/km	0.017	0.100	0.193	0.0754
Star reactance per phase at 50 Hz	Ohm/km	0.113	0.117	0.141	0.099
Capacitance per phase	uF/km	0.259	0.23	0.157	0.619
Charging current per phase at U0, 50 Hz	A/km	1.46	1.29	0.892	0.35
Max. Current rating in Air	A	845 @ 30 Deg.C	577 @ 30 Deg.C	361 @ 30 Deg.C	641 @ 30 Deg.C
Max. Current rating in Ground	A	590 @ 20 Deg.C	414 @ 20 Deg.C	285 @ 20 Deg.C	469 @ 20 Deg.C



Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

DESCRIPTION	UNIT	DATA OFFERED			
Max. Conductor temperature on continuous	Deg.C	90			
Max. Conductor temperature in short circuit	Deg.C	250			
Max. Short circuit current rating (Conductor)					
t = 0.1 sec	kA	180.9	89.6	42.9	108.5
t = 0.2 sec	kA	127.9	63.3	30.4	76.7
t = 0.5 sec	kA	80.9	40.1	19.2	48.5
t = 1.0 sec	kA	57.2	28.32	13.58	34.32
Delivery Drum length	mters.	1000 ± 5% (in Non returnable Steel drums)			
Type of Curing		Dry Curing	Dry Curing	Dry Curing	Steam Curing
Embossing / Printing (at every 1 mtrs.) ^{**}		"LOGO" "MANUFACTURER'S NAME" "XLPE CABLE" "KV" "CABLE SIZE" "CABLE TYPE" "YEAR" "NMRC" "PHASE- 1/2/3"			

* Non Standard Length shall be 5% of the Order Quantity or no length less than 100 mtrs

* Order Quantity tolerance shall be ± 5% or as per the PO

* For armoured cables, minimum thickness of outer sheath has to be maintained as per Cl. 17.5.3 (b) of IEC 60502-2.

** Phase Numbering of 1/2/3 shall be provided for respective phases as required. Customer has to specify the individual drum lengths during PO placement.

Sequential length marking shall be provided through printing at every 1 mtr on the outer sheath



Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

Sl. No.	Description	Unit	Data Offered
1	Manufacturer		Sterlite Power Transmission Limited
2	Reference Standard		Generally as per IEC 60840 / IEC 60502-2
3	Voltage Grade (Uo/U (U2)	KV	26/45 (52)
4	Operating Voltage	KV	27.5
5	Cable type		Copper XLPE Insulated Cable
6	Manufacturing Process		Dry Curing
7	Cable Size	Sq mm	240
8.1	Conductor Material		Annealed Plain Copper as per IEC 60228
8.2	Conductor Material	mm	Extruded semi-conducting compound
9.1	Core Screen		Extruded semi-conducting compound (Bonded Type)
9.2	Thickness of conductor Screen	mm	0.3 nom.
10.1	Insulation		XLPE
10.2	Minimum thickness of insulation	mm	10 min.
11.1	Insulating Envelope screen		Non-metallic part of semi- conducting material plus metallic part consisting of standard wire and copper tape, rated to carry a short circuit current of 14 kA for 3 sec
11.2	Thickness of insulation screen	mm	0.3 nom.
12.1	Outer sheath	mm	Black FRLS PVC type ST-2
12.2	Thickness Outer Sheath*	mm	1.96 min.
13	Nominal overall diameter of Cable	mm	55 ± 2 mm
14	Approx weight of Cable	kg/km	5800 approx.
15	Minimum bending radius	mm	20 times OD
16	Delivery Drum Length	mtrs.	1000 ± 5% (In Steel drums)
17	Embossing / Printing (at every 1 mtrs.)**		"LOGO" "MANUFACTURER'S NAME" "XLPE CABLE" "KV" "CABLE SIZE" "CABLE TYPE" "YEAR" "NMRC" "PHASE- 1/2/3"

* Non Standard Length shall be 5% of the Order Quantity or no length less than 100 mtrs

* Order Quantity tolerance shall be ± 5% or as per the PO

* For armoured cables, minimum thickness of outer sheath has to be maintained as per Cl. 17.5.3 (b) of IEC 60502-2.

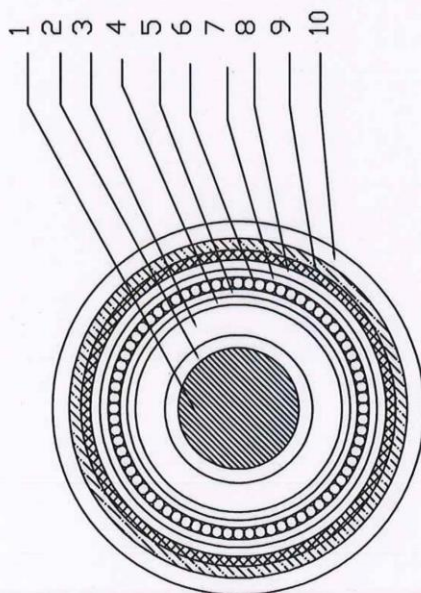
** Phase Numbering of 1 / 2 / 3 shall be provided for respective phases as required. Customer has to specify the individual drum lengths during PO placement.

Sequential length marking shall be provided through printing at every 1 mtr on the outer sheath



Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

- 1:- Copper conductor
- 2:- Inner semicon
- 3:- Insulation XLPE
- 4:- Outer semicon
- 5:- Semi-conducting tape.
- 6:- Copper wire screen
- 7:- Copper tape (open helix).
- 8:- Wrapped PP Tape as Inner Sheath
- 9:- Double layer of Aluminium Tape armour
- 10:- Extruded Black FRLS Outer sheath



Earth Fault Current through Metallic Screening
shall be 1.0 kA for 3 sec.

CUSTOMER:- Siemens Ltd. - 3.0 kV Cables	TITLE:- Cross sectional drawing of MV grade single core cable		Sterlite Power Transmission Limited			
	Dimensions as per Technical Particulars		DRAWN DATE	PN 12/06/15	APPROVED DATE	PJV 12/06/15
			CHECKED DATE	CS 12/06/15	SCALE NTS.	DIMENSIONS IN MM.
			DRAWING:- NO.STL/PCB/DWG/Siemens/042			



Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

6.2.11. Dismantling of Transformer

Dismantling of existing 315kVA transformer and its transportation from Sec-137 metro station to NGN depot.

6.2.12. Earthing:

Transformer neutral is required to be connected to the ASS earth by means of 2 independent connections by using 50X6 sqmm GI Strip. Also, non-current carrying metallic part of Transformer and newly installed LT panel will be connected to the earth bus.

6.2.13. Statutory approval

All necessary statutory approvals shall be taken by the contractor. The employer shall facilitate only.

6.2.14. TEST REQUIREMENTS:

Description	TYPE OF TEST			
	Type	Routine	On Site	Special
Temperature rise*	✓			
Lighting impulse withstand voltage test*	✓			
Separate-source voltage withstand test		✓	✓	
Measurement of winding resistance test		✓		
Measurement of voltage ratio and check of phase displacement		✓		
Measurement of no load loss and current		✓		
Visual inspection		✓	✓	
Short circuit withstand test				✓

*For these type tests, the Contractor could provide a report on similar equipment.

6.2.15. CONFORMITY WITH STATUTORY ACTS, RULES, REGULATIONS, STANDARDS AND SAFETY CODES

All electrical works in connection with installation of electric sub-stations shall be carried out in accordance with the provisions of Indian Electricity Act and Rules, Wherever I.E. rule numbers have been indicated, they are based on I.E. Rules, 1956 amended upto date.

The electrical works shall also conform latest I.E. Rules, BIS/IEC as amended wherever relevant. These additional specifications/ conditions are to be read in conjunction with above and in case of variations; specifications given in the in the contract shall apply. However, nothing extra shall be paid on account of these additional specifications and conditions, as the same are to be read along with schedule of quantities for the work.

6.3 LT PANEL AND SWITCHGEAR

GENERAL

6.3.1.Metro stations are provided with Electrical Panels for receiving and distribution of power supply to various usages as defined in various clauses at voltage level of 415 V/50 Hz. The usages are generally lighting, air conditioning system, ECS system, PD area and all other type E&M work which come under stations coverage.

6.3.2.The manufacturing , testing , installation and commissioning of complete 415 V, 3 phase, 4 wire and 50 Hz low voltage main switchboard is as defined in IEC/EN 61439-1, built up from compartments to house bus bars , terminal blocks, internal and control wiring, instrumentation, relays, interlock and padlocking facility, emergency push buttons, equipment for BMS/ SCADA /RS 485/ Mod bus connectivity of communicable ACB/MCCB interface, indication lamps, control and auxiliary switches, contacts, control power supply, air circuit breaker, MCCB, MCB, CTs and PTs and any other items considered necessary to deliver the functions of incoming and outgoing power supply as detailed in BOQ and drawing.

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6.3.3.The bidder shall submit the General arrangement drawing, control wiring drawing of augmented Main distribution board (MDB). Manufacturing clearance shall be granted after approval of engineer in charge.

6.3.4.Panel should be type tested as per IEC-61439 and type test certificates should not be more than 5 year old from the date of tender submission.

GOVERNING SPECIFICATIONS

6.3.5.Electrical Panels along with equipment's shall conform to the latest standard or harmonize as per the respective standard as given below or specified along with the equipment in the specification.

6.3.6.In case of any conflict between specifications & the standards, the instructions/decision of the Engineer' or Employer's authorized representative shall be binding.

STANDARDS:

6.3.7.Low voltage Electrical Panels shall satisfy the following requirements and shall also comply with standards in force when Electrical Panel units are manufactured, particularly which are in the following table.

STANDARD	DESCRIPTION
ISO STANDARD	
ISO 9001	Quality systems- model for quality assurance in design/development, production, installation and servicing
IEC STANDARD	
IEC 60228	Conductors of insulated cables
IEC 60255	Measuring relays and protection equipment
IEC 60529	Degrees of protection provided by enclosures (IP Code)
IEC 60831	Shunt power capacitors of the self-healing type for a.c. systems having a rated voltage up to and including 1000 V
IEC 60898	Electrical accessories – Circuit-breakers for over current protection for household and similar installations
IEC 60947-6-1/EN 60947-6-1	Specification for low-voltage and control gear Multiple function equipment. Automatic transfer switching equipment.
IEC 60947-2/EN 60947-2	Specification for low-voltage switchgear and control gear circuit breakers
IEC 60947-1	Specification for low-voltage switchgear and control gear. Contactors and motor-starters. Electromechanical contactors and motor-starters.
IEC 61008	Residual current operated circuit-breakers without integral over current protection for household and similar uses (RCCBs)
IEC 61439-3/EN 61439-3	Specification for low-voltage switchgear and control gear assemblies. Particular requirements for low-voltage switchgear and control gear assemblies intended to be installed in place.
IEC 61439	Specification for low-voltage switchgear and control gear assemblies
IEC 62262	Degrees of protection provided by enclosures for electrical equipment against mechanical impacts (IK code)
IEC 61641	Enclosed low-voltage switchgear and control gear assemblies - Guide for testing under conditions of arcing due to internal fault

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IEC 61869/BSEN 61869	Instrument transformers
IS STANDARD	
IS 13779	ac Static Watt-hour Meters, Class 1 and 2
IS 13947-5-2	Low-Voltage Switchgear and Control gear, Part 5: Control Circuit Devices and Switching Elements, Section 2: Proximity Switches
IS 13947-5-1	Low-Voltage Switchgear and Control gear, Part 5: Control Circuit Devices and Switching Elements, Section 1: Electromechanical Control Circuit
IS 13947-4-1	Low-Voltage Switchgear and Control gear : Part 4 - Contractors and Motor-Starters
Is 13947-3	Low voltage switchgear and control gear, part 3: switches, disconnectors, switch-disconnectors and fuse combination units
IS 13947-2	Low-Voltage Switchgear and Control gear, Part 2: Circuit Breakers
IS 13947-1	Low-voltage switchgear and control gear, Part 1: General rules
IS 5553	Reactors – Specification
BS STANDARDS	
BS 381 C	Colour chart
BS 4800	Colour
BSEN60742/BS 3535/BS 61558	Isolating Transformers
BS 1432	Specification for Copper for electrical purpose high conductivity copper rectangular conductor with drawn or rolled edges.
BS 951	Electrical earthing. Clamps for earthing and bonding. Specification
BS 7430	Code of practice for protective earthing of electrical installations
BS EN 13601	copper and copper alloys - copper rod, bar and wire for general electrical purposes
IEC/BS EN 60947-4-1	Specification for low-voltage switchgear and control gear. Contactors and motor-starters. Electromechanical contactors and motor-starters.
BS EN 10025	Hot rolled products of structural steels
BS EN 50525	Electric cables. Low voltage energy cables of rated voltages up to and including 450/750 V (U0/U)

(Unless otherwise stipulated in the specification, the latest version of the standards shall be applicable)

ABBREVIATIONS

- ACB-Air circuit breaker
- ALTS- Automatic load transfer switch
- APFC-Automatic power factor correction
- ATS- Automatic transfer switch
- DB- Distribution board
- EMC- Electromagnetic compatibility
- LEP- Local Electrical Panel
- LMCP- Local motor control panel
- LT- Low Tension
- LVDB-low voltage distribution board
- ELECTRICAL PANELS- Low Voltage main switch board
- MCB- Miniature circuit breaker
- MCCB-moulded case circuit breaker
- MFM- Multi function meter
- MPCB-Motor protection circuit breaker
- RCCB- Residual current circuit breaker

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- RCBO-Residual Current Circuit Breaker with Over-current
- RTU- Remote terminal unit
- ELECTRICAL PANELS- Sub Main Distribution Board
- TB- Terminal block
- VFC- Volt free contact

6.4. GENERAL AND TECHNICAL REQUIREMENTS OF ELECTRICAL PANELS

- 6.4.1. The Electrical Panel shall be same as low- voltage switchgear and control-gear assemblies defined in IEC 61439-1 or EN 61439-1 built up from compartments housing circuit breakers, control gear, relays, bus bars, controls and other equipment as defined in BOQ.
- 6.4.2. Panel should be factory built of proven design with OEMs as well as switchboard manufacturer approved as covered by clause 3.10 of IEC 61439-1.
- 6.4.3. The Electrical Panel shall pass the internal arc fault containment tests in accordance with IEC 61641 for fault current ratings as defined in BOQ for a minimum time of 0.3 sec.
- 6.4.4. The degree of Ingress Protection for Electrical Panels shall be IP 54 as defined in IEC 60529 which shall not deteriorate with time.
- 6.4.5. The Electrical Panels and the associated equipment, including switchgear and control gear assemblies shall be certified for the category of duty specified as per Annex A of IS/IEC 60947-1.
- 6.4.6. The main circuit as defined in vide clause 3.1.3 of IEC 61439-1 shall have an insulation voltage of 1000 V AC or as specified in the BOQ.
- 6.4.7. The ambient temperature and ambient humidity for Electrical Panel shall be as per IEC 61439-1 (clause 7.1.1 and 7.1.2 of IEC 61439-1) and Switchgear shall be as per IEC 60947 (Clause 6.1.1 and 6.1.3 of IEC 60947).
- 6.4.8. The secure service life of Electrical Panel shall be at least 30 years as defined in General Scope of Work. The design features to secure the service life of 30 years shall be submitted at the time of design approval.
- 6.4.9. The Electrical Panel shall have a rated short time withstand current of 50 kA for 1 second as per BOQ and for a supply voltage of 415V AC between phases at 50Hz.
- 6.4.10. The Electrical Panels shall be a minimum of Form 4b and Type 5 in accordance with IEC 61439-2 & BS 61439-2.

6.5. ELECTRICAL PANEL CONSTRUCTION

- 6.5.1. The panel shall be of the approved design to suit local conditions as prevailing at different metro stations.
- 6.5.2. The Electrical Panel (other than DB) shall be designed for indoor use in the form of free standing, floor mounting extendible, self contained and sectionalized as necessary to face easy transportation and erection, containing all the equipment indicated on the Drawing, BOQ and specified hereinafter.
- 6.5.3. Electrical Panel shall be tested for Mechanical impact in accordance with IEC 62262.
- 6.5.4. The cubicle section shall be constructed of angle iron types frames or folded sheet steel or fully welded/bolted construction with all necessary removable covers. Removable lifting lugs shall be provided on the top of the cubicles. Cubicle sections shall be provided with bolts or devices for insuring that they are correctly aligned when being coupled together. The bus bar chamber shall be fitted with removable end cover plates secured by mild steel captive screws. It should be bolted type modular construction easy to modify the configuration at site.
- 6.5.5. It shall be finished to provide a rigid shell type of enclosure in accordance with BS EN 10025.

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- 6.5.6. The load bearing parts of the entire electrical panel assembly shall be 2 mm CRCA thick sheet whereas other partition parts shall be constructed of minimum 1.6 mm CRCA thick sheet steel.
- 6.5.7. The Electrical Panels shall be mounted on a robust base frame made up of steel channel with a minimum height of 100mm and the maximum height of Electrical Panel shall not exceed 2.30 meter including base frame. The base frame shall be able to withstand the static and dynamic loads of the Electrical Panels. The steel channels shall be painted with epoxy polyester paint. The main contractor shall ensure that the maximum height of the Electrical Panel shall not exceed 2.60 meter including foundation if any.
- 6.5.8. Electrical panel shall have provision for top/bottom in-coming and bottom/top out-going to suit site conditions of cable entries.
- 6.5.9. Non-magnetic gland plates of not less than 5 mm thick of suitable size shall be provided at the top and bottom of the LV main switchboards for the termination of incoming and outgoing power cables or bus ways. Where armoured multi-core cables terminate inside the switchboard enclosure, glanding plates or glanding brackets shall be provided for securing the cables to the switchboard.
- 6.5.10. Glanding plates, glanding brackets and extension boxes shall be removable and shall be of adequate size for the particular cables to be terminated. The cables shall not put any stress on to the glanding plate and shall be secured adequately.
- 6.5.11. All relays and indicating instruments shall be at least 300 mm and not higher than 1.8 m from base frame. The clearance in front, back and side of all assemblies of switchgear and control gear shall be as per IE Rule 51.
- 6.5.12. Enclosure Gaskets shall be of Polyurethane and shall meet the requirement of NEMA 250 TYPE-3 or shall be in line with IP of LT panel.
- 6.5.13. Various units comprising a complete Electrical Panels shall be grouped in a multi-tier arrangement including a cabling and wiring chamber of ample dimensions to accommodate terminal blocks, cable boxes and gland plates.
- 6.5.14. The equipment shall be arranged within each compartment such that all normal maintenance can be carried out through hinged access doors or removable covers, and where possible from the front.
- 6.5.15. Adequate maintenance access shall be provided to equipment within the Electrical Panels. Demountable panels shall be provided at the back of the Electrical Panels that can be handled by a single person. Every demountable panel shall be provided with a pair of handles for easy removal and fixing.
- 6.5.16. Front access door shall be fixed with concealed hinges and interlocked with the switch mechanism. The door panel can be opened only if the switchgear is in the "OFF position" or the switchgear should switch off if the panel door is opened.
- 6.5.17. Adequate arrangements for air circulation shall be made within each compartment of the Electrical Panels. The Contractor shall ensure that the internal temperature of the Electrical Panels will be well within the operating ranges as specified by IEC 61439-1 of all electric components including switchgear, control gear, bus bars, relays, wiring and timers inside the Electrical Panels.
- 6.5.18. All the incoming / outgoing terminations shall be extended via fully insulated copper connections into a separate termination chamber adjacent to the rear of the switchboard. When busbars are used between switchboards, the internal busbars of the switchboard shall be of tinned copper bars sizes of copper links shall be as per type tested design. No linking with cables shall be permitted in this case except copper flexible wire which can be accepted for linking MCCBs up to 100 Amp.

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- 6.5.19. The switchgear assembly/sub-assemblies or panels shall be termite and rodent proof.
- 6.5.20. The switchboard shall have sufficient space to house all electrical equipment allowing spare Space capacity of 10% for the future expansion if specifically asked in BOQ
- 6.5.21. Spare feeder shall be provided as per BOQ. Any equipment which comprises an assembly of similar modules shall be constructed such that further similar modules can be added at either end.
- 6.5.22. All similar items of the Electrical Panels and their component shall be interchangeable. Spare parts shall be manufactured originals and shall fit all similar items of the Electrical Panels. Where machining may be needed before fitting renewable parts, the machining fits and the associated tolerances shall be shown on the drawings accompanying the instruction manuals.
- 6.5.23. The Electrical Panel shall operate without excessive vibration and with a minimum of noise as per best of engineering practice and shall also operate without excessive temperature rise at the rated load conditions.
- 6.5.24. The style and finish of the workmanship shall be consistent throughout the Works. Unless otherwise specified, Engineer shall decide the final colours for all paintwork and other finishes to be applied to the Electrical Panels.

6.6. ELECTRICAL PANEL EARTHING AND SAFETY ARRANGEMENT

- 6.6.1. All non-current carrying metallic components shall be permanently connected to earth.
- 6.6.2. The copper earthing busbar inside the panel shall be tin-plated and cross-sectional area selected as mentioned in IEC 61439.
- 6.6.3. A continuous copper earthing busbar shall be provided along the whole length of each Electrical Panels and shall be provided with terminals for connection to the metal housing of incoming busways, cable trunking and cladding or armouring of all incoming and outgoing cables and to the substation earth.
- 6.6.4. Switchboards shall be provided with two earthing terminals, one at each end, for the connection of sleeved Copper bars for earthing. The earthing bars shall be fixed at rear interior bottom portion throughout the length of the switchboard, bonding all gland plates, and other component parts of the switchboard to a main earth point adjacent to the intake position in accordance with BS 951 and BS 7430.
- 6.6.5. All terminals, connections, relays and other components which may remain live when access doors are open shall be screened. It shall not be possible to obtain access to an adjacent cubicle when any door is opened.
- 6.6.6. Where several outgoing circuits occupy a common cabling chamber, all copper work, cable lugs, terminations and terminal blocks shall be fully segregated by compartmentation to enable work on any one circuit to be carried out with other circuits remain live.
- 6.6.7. Protection against shock in normal service shall be achieved by the provision of barriers or enclosures both vertical and horizontal and between adjacent units to ensure segregation and prevent accidental contact with live parts, or by complete insulation of all live parts Control cables shall be segregated from primary conductors.
- 6.6.8. The protective earthing configuration shall be TN-S unless otherwise specified.

6.7. EQUIPMENT INSTALLED INSIDE ELECTRICAL PANELS

Electrical panels consist of Low Voltage Switchgear, control wiring and all other parts which are defined below.

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Busbar

- 6.7.1. Busbars shall be of rectangular section hard drawn high conductivity tinned copper bare type conform to BS 1432/13601, adequately rated for designed value and fault level of load as per BOQ and supported by non-tracking moulded insulators spaced at suitable intervals. The complete assembly shall be capable of withstanding the maximum mechanical stresses to which it may be subjected to under fault conditions.
- 6.7.2. Sizing of the busbar shall comply with IEC 60890 for temperature rise assessment by extrapolation and bus bar temperature rise as per Copper Development association latest formula.
- 6.7.3. Busbars and busbar connections shall be constructed in accordance with the requirements of IEC 61439-1. The short-time withstand current rating shall be as mentioned in BOQ for 1 second at 415 V.
- 6.7.4. Connection in Bus bars shall be made as approved and proven design of original manufacturer.
- 6.7.5. The maximum temperature of the bus bars and the bus connections shall be as per IEC 61439 standard.
- 6.7.6. The main busbars shall be so positioned and arranged that all busbar risers and droppers can be brought onto the main busbars without undue bending. Busbars shall be and supported with appropriate clearances in air to the requirement of providing full insulation. Busbar chambers of similar rating shall be capable of coupled together using busbar coupling links, in accordance with the manufacturer's recommendation. Coupling links shall be approved by the Engineer before use.
- 6.7.7. Interconnecting conductors between busbar chambers and switchgear shall be as per rating of switchgear and type tested design.
- 6.7.8. Switchgear shall be joined to busbar chambers by means of properly designed busbar chamber connection flanges or conduit couplers and male bushes. Connection flanges shall be manufactured from galvanized sheet steel/CRCA and finished grey. Busbars shall be coloured for phase identification at location of bus inspection point with the approval of site engineer. The material for phase identification shall be non-fading colour of proven design to be decided by the Engineer and use of adhesive label shall not be acceptable.
- 6.7.9. The front cover and end plates of busbar chamber shall be removable
- 6.7.10. The polarity of all apparatus shall be arranged as follows when viewed facing the front of the Electrical Panels:
- For two pole apparatus, phase pole and neutral pole when reading from top to bottom or left to right; and
 - For three or four pole apparatus, red, yellow and blue phases and neutral when reading from top to bottom or left to right.
- All cables shall be so connected within the Electrical Panels such that the correct sequences are preserved throughout.

Instrumentation

- 6.7.11. Electrical meters shall conform to IS 13779 / IEC - 1036, 687, 1286 suitable for single phase /three phase supply system in all respects. Accuracy of meters shall be of 0.5s class.
- 6.7.12. All meters shall be digital type and multifunction Meters with RS 485 connectivity to suit BMS System wherever mentioned in BOQ. Suitable memory and software for logging the information along with real time metering information must be available. The meters must have required level of protection and sufficient number of auxiliary contacts.
- 6.7.13. Meters shall be suitable for continuous operation as per IEC 898.

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- 6.7.14. Meter shall be suitable for 3 phase, 4 wire systems, and balanced as well as unbalanced load. All instruments and associated apparatus shall be capable of carrying their full-load current without undue heating. They shall not be damaged by the passage of fault currents up to the rating of the associated switchgear through the primaries of their associated instrument transformers. The instrument meter shall be earthed by a conductor of not less than 2.5 mm² cross-sectional area.
- 6.7.15. Energy meters shall be two / three element, switch board mounting type suitable for unbalanced loads. In case of two incoming feeders, a summation C.T. shall be provided with the meter.
- 6.7.16. The display for meters i.e. ammeter, voltmeters or multifunction meter shall be auto-ranging type.
- 6.7.17. Selector switches shall be inbuilt in voltmeters such that voltmeter can read voltages between phase and phase and between phase and neutral.
- 6.7.18. Ammeters shall normally be suitable for 5 A secondary of current transformers
- 6.7.19. Voltmeter circuits shall be provided with protection through MCB as required. Separate current transformers for feeder shall be provided for protection device and for instrumentation.

6.8. Current Transformers (CTs) and Voltage Transformers (VTs)

- 6.8.1. CTs and VTs shall comply with IEC 61869/BSEN 61869 and CTs shall be of the epoxy resin encapsulated ring type. The ratings specified on the Drawings are indicative only and it shall be contractor/manufacturer's responsibility to ensure that the ratings offered are adequate for the relays/meters provided considering lead resistance, etc.
- 6.8.2. Current transformers shall comply with approved standard and shall be compatible with and provide the necessary accuracy, over current factors, characteristics, performance and VA rating for the satisfactory operation of the relevant protection devices, instruments and meters.
- 6.8.3. All CTs shall have a short-time current rating as specified in IEC 60044-1.
- 6.8.4. CTs for protection shall be compatible with the protection relays to ensure that the CTs will not be saturated up to the maximum prospective fault current.
- 6.8.5. CTs designed for unit protection schemes shall be able to withstand a stability of not less than the maximum through-fault of the units.
- 6.8.6. In balanced circuits, the spill current with maximum stability conditions shall not exceed one quarter of the operating current of the relay.
- 6.8.7. CTs for use in conjunction with protection relays shall be of class 5P accuracy or better. CTs for use in conjunction with measuring instruments shall be of Class 1 accuracy. The product of rated accuracy limit factor and rated output of the protection CTs shall not be less than 20 times the total rated burden of the trip circuit including the relay, connection leads and O/C release where applicable.
- 6.8.8. All CTs shall have output ratings adequate to cater for the burden connected to them. The Contractor shall demonstrate to the satisfaction of the Employer representative. By calculation or by test, that each group of the CTs, when installed and having the secondary burden connected, is capable of operating the relays and other measuring instruments in accordance with the manufacturer's published characteristics and the requirements of the system, with a reasonable margin of safety.
- 6.8.9. Measuring CTs shall be connected to test terminal block. The test blocks shall be provided with easily removable links and designed to facilitate connection of testing instruments on load without open-circuiting the CTs.

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- 6.8.10. The secondary circuit of each set of CTs shall be earthed at one point only through a disconnectable copper link at a readily accessible position for testing.
- 6.8.11. Multi-ratio CTs (where used) shall have a label clearly indicating the connections required for the alternative ratios. These connections shall be shown on panel wiring diagrams.
- 6.8.12. Identification labels shall be fitted, mentioning type, ratio, rating, output and serial numbers.
- 6.8.13. VTs shall be provided with adequately rated primary and secondary fuses.
- 6.8.14. Instruments shall be similar in appearance throughout the whole of the Electrical Panels. All instruments, meters shall be of flush pattern, dust and moisture proof, suitable for the environment in which they are installed.
- 6.8.15. All instruments and meters shall be completely segregated in instrument compartments. Compartments containing these devices shall not contain any terminals or equipment operating at higher voltages with the approval of site Engineer.
- 6.8.16. The housing shall be of steel or phenolic mould. Design and manufacture of meters shall ensure prevention of fogging of instrument glass. Selector switches shall be provided for ammeters and voltmeters used in three-phase system. This selector shall be of built-in type with meters.

6.9. Relays

- 6.9.1. The relays are having in-built function with protective gears such as ACB, MCCB and MCB and MPCB etc. In case any relay is required for additional protection as stated in BOQ or otherwise, the same shall be provided to ensure full protection to the system.

6.10. Interlock and padlocking facilities

- 6.10.1. The two incomers shall be electrical and mechanical interlocked with existing buscoupler through 2 of 3 interlocked scheme. Interlocking between the outgoing 800A ACB (PD) shall be interlocked with incomer 1600A ACB such that outgoing 800A ACB (PD) shall feed supply only when 1600 A ACB is in healthy condition.
- 6.10.2. The tripping of the ACB(s) shall be via local hard wiring control and in Signal(s) shall also be generated from circuit breaker(s) upstream of the corresponding Electrical Panels and the switchboard interconnected section ACB.
- 6.10.3. Electrical interlocks on withdrawable equipment shall be so arranged that if the equipments are withdrawn, the complete operation of the withdrawn equipment shall be independent of the remote interlocking contacts. In addition, interlocks shall not be defeated leading to damages or unsafe operations of Electrical Panels due to the withdrawing of equipment.
- 6.10.4. Locking facilities shall be provided where appropriate for switches and isolators in order that they may be locked in the open position. Switchgear cubicle access doors shall be equipped with integral type locks, preferably incorporated in the handles of the equipment.
- 6.10.5. Where locking facilities are of the integral barrel type, the key for each lock shall be unique to the associated lock unless otherwise specified.
- 6.10.6. Two keys shall be provided for every lock supplied. The keys shall be fitted with rings with identification labels, and cabinets with glazed front- opening doors shall be provided. The cabinets shall be adequate in size and equipped with hooks to house all keys when not in use, and shall be mounted in positions to be decided.

6.11. Internal and control wiring

- 6.11.1. All equipment shall have adequate provision for the entry and termination of all associated power and auxiliary cables.

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- 6.11.2. Cable entry shall in all cases, except where otherwise specifically approved, and be at the base of the equipment. All cabling and wiring within the Electrical Panels shall be neatly run and fitted in or upon such cable trays, trunkings and conduits as may be appropriate to the layout and equipment. Cable trays, trunkings, conduits and cleats shall be non - metallic and shall be of the low smoke halogen free material. A metallic cleat is acceptable with the approval of site engineer.
- 6.11.3. All internal and control wiring shall be Low Smoke Zero Halogen (LSZH) copper conductor wires rated at 450/750 V complying with BS EN 50525 for this Specification. All control wiring within the Electrical Panels shall be with single core minimum 2.5 mm² for CT and balance as per approved manufacturer design. Insulation shall have a glossy finish, be resistant to oil and be incapable of supporting combustion. Fire survival cables shall be provided where required as per BOQ.
- 6.11.4. Wiring from the fixed part of the switchboard to the movable part such as hinged door shall be enclosed by flexible tubing made of Low smoke Zero Halogen material. Exposed live terminals shall be suitably shrouded or covered.
- 6.11.5. Wiring passing out to fully accessible positions shall be run in non-metallic low smoke halogen free flexible tubes or conduits.
- 6.11.6. All internal wiring shall be neatly run and securely fixed in non-metallic cleats in such a manner that, wherever practicable, wiring can be checked against diagrams without removal of the cleats.
- 6.11.7. Access opening shall be fitted with a suitable long life grommet where inter-panel wiring passes through panel side sheets etc.
- 6.11.8. Bus-wires shall be fully insulated. Bus-wires terminals shall be fully accessible from the point of entry to each enclosure. MCB and links shall be provided to enable all control circuits within the Electrical Panels to be isolated from the bus-wires.
- 6.11.9. All control circuits shall be protected by a MCB.
- 6.11.10. There shall be no joint in conductors between terminal points.
- 6.11.11. Terminations for terminals shall be of the crimped-on ring type. Terminations of stranded conductors to clamp type terminals shall be of the crimped-on solid rod type.
- 6.11.12. No more than one core of either internal or external wiring shall terminate on any outgoing terminal. Where duplication of terminal blocks is necessary, suitable solid bonding links shall be incorporated in the design of block selected.
- 6.11.13. Wiring for all known future equipment shall be provided and all wires shall be terminated.
- 6.11.14. All wires between the terminals of two equipment shall be given a unique number according to an approved system. A wire number shall not change solely by virtue of passing through, say, a marshalling terminal block.
- 6.11.15. In the interests of uniformity, the wire-numbering system shall be approved by the Engineer.
- 6.11.16. Identification markers shall be fitted to all wires and multicore cable tails within enclosures in accordance with the diagram for apparatus concerned. Cable and core makers shall be of insulation material, colored according to the wire numbering system with a glossy finish, be resistant to oil and be incapable of supporting combustion. Numbers shall not be duplicated unless the corresponding wires are directly in series or parallel
- 6.11.17. Different insulation colours shall be provided to distinguish the various circuits. All wiring shall conform to the colour and ferrule codes to be approved by Engineer.

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6.12. Terminal blocks

- 6.12.1. Both incoming and outgoing cable shall have top or bottom entry depending on site requirement.
- 6.12.2. Each terminal block compartment shall have not less than 20 % or 4 spare terminals whichever is greater.
- 6.12.3. Terminal blocks for low voltage wiring shall be moulded from high-grade non-hygroscopic melamine, comprise bank of rail-mounted blocks with all live parts fully shrouded, screw-clamp, spring loaded insertion, solder-lug or stud type terminals as appropriate to the design and duty of the cables to be terminated. Pinch-type screws, where the screw is in direct contact with the conductor, shall not be used.
- 6.12.4. Each terminal shall be provided with claw-type washers, crimp lugs or other approved means for connection of the wires. Plain and spring washers, nuts and lockouts shall be electro-tinned.
- 6.12.5. Terminals shall be assembled in banks and each terminal shall be complete with marking tags to fit into moulded tag slots.
- 6.12.6. Terminals for final connections for indication, instrumentation and metering circuitry shall have test probe facilities and an integral disconnecting device to facilitate testing.
- 6.12.7. Terminations shall be grouped according to function and no more than two wires Connected to one terminal. Labels shall be provided adjacent to the terminal block to identify the function and voltage of each group.
- 6.12.8. All terminals to which 240 V or 415 V AC circuits are connected, where they are in individual terminal blocks, shall be provided with a transparent insulated cover which in addition to any other form of identification and shall have a label engraved suitably indicating the voltage.
- 6.12.9. Terminals for the control supply which may be still alive when the main equipment is isolated from the mains supply shall be suitably labelled to reduce the risk of accidental contact.
- 6.12.10. All terminals shall bear a permanent identification number or letter.

6.13. Indicating lamps

- 6.13.1. Indicating lamps shall be multiple LED type. All indicating lamps shall be suitably rated so that the indication is clearly visible from the side and front at a distance of not less than 3 m in a room.
- 6.13.2. The colours of indicating lamps for red, yellow, blue phases, ACB on, off and trip shall be red, yellow, blue, red, green and amber respectively.

6.14. LOW VOLTAGE SWITCHGEAR

Air circuit breakers (ACB)

- 6.14.1. ACB should be mechanically robust of compact design, air break horizontal and withdrawable type, confirming to IS/IEC 60947-2 and EN 60947-2.
- 6.14.2. Air Circuit Breaker is provided in transformer incomer, outgoing feeder, Interconnector Bus-Section and essential/semi-essential circuit breaker as defined in BOQ.
- 6.14.3. Manual charging as well as by 240 V AC motor with charged spring closing mechanism complete with anti-pumping relay, discharge resistor, auxiliary switch, etc.
- 6.14.4. 240 V A.C shunt-trip coil shall be operable, within operational voltage range of 70% to 110% of rated voltage as per Clause 7.2.1.3 of IEC 60947-1.
- 6.14.5. The operating mechanism shall be trip-free.

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- 6.14.6. Maximum number of circuit breaker auxiliary switches, spare auxiliary switches to be equally divided between normally open and normally closed. At least 4 spare pairs of N.O. and N.C. volt free contacts shall be provided.
- 6.14.7. Indicating lamps for on, off, tripped on fault and trip supply healthy with all necessary push buttons, panel wiring, bus wiring, terminals, fuses, etc.
- 6.14.8. Power and control cable terminals with undrilled gland plates for outgoing power cables and multi-core cables.
- 6.14.9. Electrical connection between the breaker and switchboard shall be of plug and socket type with automatic screening shutters. An interlock to prevent withdrawal when the breaker is closed.
- 6.14.10. Number of Poles shall be as per BOQ.
- 6.14.11. Local/auto control selector switch shall be lockable in all positions. The automatic control shall be defeated when the selector switch is put at local or OFF position as per drawing and BOQ
- 6.14.12. Remote indication and alarm facilities shall be provided for Circuit-breaker open, Circuit-breaker closed, Circuit Breaker is ready to close, Circuit-breaker tripped on fault, and Switch position of local/remote control selector switch.
- 6.14.13. Control switch for air circuit breakers shall be as follows:
 - Air Circuit breakers shall be fitted with operative switches of the pistol grip type. The handles of control switches for air circuit breakers shall turn clockwise for closing and anti - clockwise for tripping.
 - The control switch shall be clearly labelled as CIRCUIT BREAKER OPEN - NEUTRAL - CLOSE, with spring return to the neutral position. Mechanical interlock shall be fitted to prevent repetitive closing without moving first to the trip position, and shall be capable of padlocking in the neutral or trip position.
- 6.14.14. Set of terminals wired to provide for connection to the following:
 - Automatic changeover and interlocking as shown on the drawing
 - Operation of emergency push button as per requirement or as per BOQ.
 - Signal cables wired to terminal block for remote monitoring to SCADA.
- 6.14.15. Electrical Characteristics:
 - Rated Insulation Voltage: 1000 V
 - Rated Frequency: 50 Hz
 - Rated ambient temperature: As per Clause 6.1.1 and 6.1.3 of IEC 60947
 - Utilization category: B or as per drawing or BOQ.
- 6.14.16. Rated uninterrupted current: as shown on Drawings, however the contractor must provide breaker after taking into account of the installation conditions and derating for ambient temperature, based on selected make during preparation of working drawings.
- 6.14.17. Current Ratings shall be as follows:
 - Rated short-time withstand current (I_{cw}): 70/65/50 kA for 1 second (minimum)
 - Rated ultimate short circuit breaking capacity (I_{cu}): 70/65/50 kA based on actual fault level or as per BOQ.
- 6.14.18. Rated service short-circuit breaking capacity (I_{cs}): 100% of I_{cu}, and Rated short-circuit making capacity: shall be at least 2.1 times of ultimate short circuit breaking capacity at 0.25 power factor or as per BOQ.
- 6.14.19. **Protection:** ACB shall have microprocessor based protection releases for type of faults with selective over current (long time, short time & instantaneous) & earth fault protection, measurement of electrical parameters and with communication capability with SCADA/BMS system. Any other additional protection as mentioned in BOQ. ACB shall have an LED/LCD display to show true RMS current in all the three phases and highest current among these

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phases. The release shall be equipped with self diagnostic feature with indication. The release shall have zone selective interlocking and be capable through Modbus over Serial (RS 485 port) communication as defined in drawing where applicable. The overload and short circuit characteristics should be front adjustable and password protected or suitable arrangement to prevent unauthorised entry with the approval of Engineer.

6.14.20. The bidder shall submit the LSIG settings of ACBs in accordance with the 33kV Circuit breaker so as to achieve complete discrimination.

6.14.21. The release should have an internal fault indication for faster fault diagnosis/self diagnostic feature is required.

6.14.22. The release should have fault indications by which discrimination of fault is possible.

6.14.23. Control relays and wiring for automatic changeover interlocking and other breaker operation as shown on the Drawings.

6.14.24. Fire resistant transparent covers shall be provided over ACB's to achieve IP-54 protection and door interlock so that ACB access door shall not open if ACB is ON otherwise it will automatically OFF if Door is opened.

6.14.25. Electrical interlock for the two incoming circuit breakers and interconnector bus - section circuit breaker to prevent paralleling of different power supply sources at any one time as shown on the Drawings

6.14.26. ACBs shall be SCADA controlled and monitored with following signals

- i) Local/Remote mode status
- ii) SCADA permissive indication
- iii) CB in Test/service
- iv) CB Spring Status
- v) Trip relay operated
- vi) Switching state (Open)
- vii) Switching state (Close)
- viii) CB under voltage trip relay operated
- ix) CB open Command
- x) CB close command
- xi) SCADA permissive command

1600A ACB shall be connected on SCADA whereas provisions shall be kept in 800A ACB (PD).

6.14.27. Following shall be provided for ACB connected to the transformer incomer:

- 1) Four Protection Current Transformers (three in panel, one in loose to be mounted in transformer neutral), a Restricted Earth Fault Relay and a Standby Earth Fault relay as specified for the interface with high voltage switchgear.
- 2) Two ways inter-tripping relay shall be provided with the associated HV feeder circuit breaker by interfacing with the Power Supply Contactor.
- 3) Voltage sensing relay and associated relays for automatic changeover and interlocking operation as detailed on the Drawings.

6.14.28. Interlocks and Test Operation Facilities

All ACBs shall be provided with interlocks to ensure that:

- 1) The ACB cannot be plugged in or isolated while it is closed,
- 2) The ACB cannot be closed until it is fully plugged in or completely isolated
- 3) The ACB cannot be closed in the service position without completing the auxiliary circuits between the fixed and moving portions
- 4) With manual charged and motor charged spring mechanisms the springs cannot be discharged until they have been fully charged and until the means for charging has been removed or disconnected,
- 5) Facilities shall be provided for testing the ACB operation when in the isolated and withdrawn positions by the normal means as in service, and
- 6) Where control circuits are provided and interlock circuits are broken via plugs on withdrawal of the ACB, a minimum of one jumper lead and plug assembly of each size and type shall be provided to facilitate testing in the withdrawn position.

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- 7) The neutral shall be rated for 100%

6.14.29. **Safety Shutters**

- 1) A set of shutters with padlocking facilities shall be provided to cover each three phase group of stationary isolating contacts. The shutters shall be independent and operated automatically by a positive drive from the ACB withdrawal mechanism
- 2) In order to prevent unauthorized operation, the withdrawable air circuit breakers shall be provided with padlock facilities to secure them in their connected, test and isolated positions.

6.14.30. **Miniature circuit breakers (MCB)**

- MCBs shall comply with and be type-tested to IEC 60898 or EN 60898.
- MCBs shall meet the following requirements:
 - 1) Number of poles: single-pole, double-pole, triple-pole or four-pole as specified in the BOQ or Drawings
 - 2) Protection against external influences: Enclosed-type,
 - 3) Method of connection: Bolted type or clip-on type,
 - 4) Rated operational voltage and frequency 240 / 415 V AC and 50 Hz.
 - 5) Rated current: 6 A, 10 A, 16 A, 20 A, 25 A, 32 A, 40 A, 50 A, as shown on the Drawings. Above 50A, MCCB as specified above must be used.
 - 6) Range of instantaneous tripping current: MCB's shall be current limiting Type Class 3 with range of instantaneous tripping current B, C or D type as appropriate or as specified,
 - 7) Rated short-circuit breaking capacity: not less than 10 kA (M3) unless otherwise specified in BOQ
 - 8) I²t characteristic: suitable for load and circuit being protected,
 - 9) Degree of protection: IP-20 for MCB's
 - 10) Reference ambient temperature: as per IEC 60898.
 - 11) MCB's shall have minimum power loss (Watts) per pole as per the IEC and should be proven by published value by manufacturer.
- The load handling contacts shall be silver/tungsten or proven material and the contacts and operating mechanism shall be designed so as to give a wiping action both at make and break. The breaker operating mechanism shall be of trip-free type. The breaker operating dolly shall be clearly indicated for the "ON" and "OFF" positions. It should be of Quick make and Quick break type.
- Circuit protection against overload and short-circuit conditions shall be provided by means of thermal-magnetic device. Double-pole, triple-pole, and four pole MCBs shall be integral units and interlocked internally so that an over current through any pole shall trip all the poles of the MCB simultaneously. An assembly of two or three or four single-pole units mechanically strapped together is not acceptable.
- Housing shall be heat resistant and having high impact strength. All DP, TP and FP circuit breaker shall have a common trip bar and should be mechanically coupled through a pin. It shall have an electrical endurance of the order of 10000 operation cycle for current rating of up to 50A.

6.15. **Discrimination**

- 6.15.1. Selection of ACB, MCCB and MCB shall be of same make. Total discrimination up to the design fault level must be available between the various elements of switchgear (ACB, MCCB, MCB etc) selected. Supplier must provide test certificates from acceptable, accredited and reputed laboratories or submit published discrimination charts/tables to prove the same. In view of Standardization and Uniformity, mixing of two series of switchgear (even from the same manufacturer) for either MCCB or ACB will not be permitted.
- 6.15.2. In case higher frame sizes rating of switchgear (than those specified In the BOQ) is required to be provided to achieve the above requirement, due to selection of a particular make, the same shall be provided at no extra cost if other makes are able to achieve the same with the specified frame size.

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6.16. Remote monitoring

6.16.1. The following critical status and alarms for each Electrical Panels shall be sent to BMS for remote monitoring via volt-free contacts or serial interface over standard protocol communication as approved but not limited to:

- 1) Individual ACB/MCCB open/close status,
- 2) Common alarm for ACBs/MCCBs trip on fault/lock out,
- 3) Common alarm for any local/remote or local/auto selector switch in local mode
- 4) Control supply failure,
- 5) ACB ready to close indication.
- 6) Emergency push button (EPB) operated, and
- 7) Busbar voltage ,current , frequency and energy parameter
- 8) Electrical Panels under voltage alarm and cause of tripping.

6.17. Auxiliary switches and contacts

6.17.1. Auxiliary switches provided for indication, protection, metering, control, interlocking supervisory purposes shall be readily accessible at the front of the Electrical Panels. Adequate secondary contacts shall be included to enable the auxiliary switch to be wired to the fixed portion of the equipment.

6.17.2. For each control compartment, spare auxiliary contacts with a minimum of two NO and two NC contacts shall be provided and wired to suitably identify spare terminals.

6.17.3. Auxiliary contacts for all applications shall be rated at 240 V AC with contact rating of at least 6 A AC and operating life of at least one million on on-load operations at 0.4 power factor inductive load.

6.18. Piped earth station

6.18.1. The earth electrode shall be 3.0m long, 50mm diameter, **Heavy duty (Class-C)** thick galvanized steel pipe. The earth resistance shall be maintained with a suitable soil treatment as shown on approved working drawings and as per plate electrodes.

6.18.2. The resistance of each earth station should not exceed 1 Ω .

6.18.3. The earth lead shall be fixed to the pipe with a clamp and safety set screws. The clamps shall be permanently accessible.

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7. Section 7: Other condition

The contractor shall take vendor & GTP approval of transformer/switchgear/cables before giving manufacturing clearance. Type test report to be submitted along with GTP approval. All materials/equipment proposed to be used, should have satisfactory performance in any metro system.

7.1 SITE CONDITIONS:-

- All the equipments and their installation shall be suitable for the environmental conditions encountered at the location.

7.2 FACTORY INSPECTION :-

- **The contractor shall arrange the factory inspection of Transformer and related equipment to Engineer In-charge and/or representatives before dispatch.**

7.3 EXTENT OF WORK: -

- The scope of work shall consist of cost of all materials, labour i/c supervision, installation, calibration, adjustments as required for commissioning of the sub-station. The term complete installation shall mean, not only, major item of the plant and the equipments covered by these specifications, but also, incidental sundry components necessary for complete execution and satisfactory performance of installation with all labour charges, whether or not specifically mentioned in the tender documents, which shall be provided by the contractor at no extra cost.

7.4 COMPLETENESS OF TENDER: -

- All fittings, unit assemblies accessories, hardware foundation bolts, terminals blocks for connections, cable glands and miscellaneous materials and accessories of items of work which are useful and necessary for efficient assembly and working of the equipment shall be deemed to have been included within the scope of the work in the tender and within the overall details for complete item whether they have been specifically mentioned or not
- Within fifteen days of the signing of Agreement, the contractor shall have to notify in writing the name of his two authorized representatives one of them will always be available at the site of work to receive the orders / instructions by Engineer in charge and the other for issue of materials and other miscellaneous works. The contractor shall be fully responsible for the orders / instructions received by his representatives regarding quality, progress and materials from the Engineer-in-charge or any higher officer of NMRC.
- The contractor shall be fully responsible for setting out the works and for the correctness of the positions, levels, dimensions and alignments strictly according to the plan / architectural and structural drawings (shall be provided without any charge) and all necessary instruments, pegs poles and other material required for the purpose, failing which the contractor will be penalized as applicable.
- The contractor shall maintain and keep the area in agreed sanitary condition for the use of men engaged in the work by him and shall remove and clear all structures etc. which may have been setup by the contractor for accommodating his staff / labour on the completion of work to the satisfaction of the Engineer in charge.
- The contractors shall have to make their own arrangements of water for construction work, for temporary accommodations for the office staff and for the labourers' residence at the site of work. The water should be fit for drinking. In case the water is supplied by the department, the contractor shall have to bear charges at rates fixed by the authority.

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- The dust emissions from the construction site should be completely controlled and all precautions taken in that behalf.
- Every Project proponent shall be under obligation to provide all medical help, investigation and treatment to the workers involved in the construction of building and carry of construction material and debris relating to dust emission.
- Wind breaking walls around construction site and proper maintenance of greenbelt should be answered.
- All builders shall ensure that C&D waste is transported and disposed to the C&D waste site only and due record in that behalf shall be maintained by the builders and transporters.
- It shall be the responsibility of every builder that all the construction material and debris shall be carried in the trucks or other vehicles which are fully covered and protected so as to ensure that the construction debris or the construction material does not get dispersed into the air or atmosphere, in any form whatsoever.
- The vehicles carrying construction material and construction debris of any kind should be cleared before it is permitted to ply on the road after unloading of such material.

7.6 DATE OF ACCEPTANCE: -

- The contractor shall monitor the augmented job for a period of fifteen days after it is energized. The date of taking over of the substation shall be reckoned after its trouble free operation during the running in period.

7.7 Warrantee :-

- The contractor shall warrant the entire augmentation job as per specifications. All equipments shall be warranted for **one year or warrantee provided by OEM whichever is higher side** from the date of acceptance against unsatisfactory performance or break down due to defective design, manufacture and installation. The installation shall be covered by the conditions that whole installation or any part thereof found defective within one year from the date of taking over shall be replaced or repaired by the contractor free of charge as decided by the department. **The warranty shall cover the following:-**
 - a) Quality, strength and performance of materials used.
 - b) Safe mechanical and electrical stress on all parts under all specified conditions of operation.
 - c) Satisfactory operation during the maintenance period.
 - d) Performance figures and other particulars as specified by the tenderer under schedule of guaranteed technical particulars.

7.8 AFTER SALES SERVICES:-

- The contractor shall ensure adequate and prompt after sales services in the form of maintenance personnel and spares as and when required with a view to minimizing the break down period. Particular attention shall be given to ensure that all spares are easily available during the normal life of installation.

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8. Section 8: Draft Contract Agreement

THIS AGREEMENT made on theday of 2021 at Noida, District Gautam Budh Nagar, Uttar Pradesh Between **Noida Metro Rail Corporation Limited** (Hereafter referred to as “NMRC”), a company incorporated under Companies Act 2013, vide corporate identification Number: U60231UP2014SGC066849 and having its registered office at **Block-III, 3rd Floor, Ganga Shopping Complex, Sector-29, Noida -201301, District Gautam Budh Nagar, Uttar Pradesh, India** represented by.....of the company, by virtue of his designation and authorization by **Shri....., Managing Director, NMRC** (hereinafter called as the “Purchaser”), which expression shall unless excluded by or repugnant to the context or meaning thereof be deemed to include its successors and permitted assigns) of the one part,

AND

..... having its registered office atrepresented by(Herein after called the “**Contractor**”, which expression shall unless excluded by or repugnant to the context or meaning thereof be deemed to include its successors and permitted assigns) of the other part. WHEREAS the Purchaser desires that the Works known as the “.....”should be executed by the Contractor, and has accepted a contract by the Contractor for the execution and completion of these Works.

The Purchaser and the Contractor agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement -

Reference:

- (i) Tender No. Dated
- (ii) Bid Documents duly accepted and submitted by dated
- (iii) The Bidding Documents which include all the Sections specified below:
 - a. Section 1: General Information and Scope
 - b. Section 2: Terms of Reference
 - c. Section 3: Instructions to Bidders
 - d. Section 4: Qualification, Evaluation and Selection Process
 - e. Section 5: Special Conditions of Contract (SCC)
 - f. Section 6: Technical Specifications
 - g. Section 7: Other Conditions
 - h. Section 8: Draft Contract Agreement
 - i. Section 9: Forms
 - j. General Conditions of Contract (GCC)
 - k. Safety, Health and Environment Management (SHE)
 - l. Amendment/ Modification, if any
- (iv) Notice of Award (.....) issued by NMRC
- (v) Letter of Acceptance of NOA (.....) given by to NMRC
- (vi) Any other admitted correspondence documents between NMRC and the Bidder.

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3. Duration of Contract

The Corporation intends to appoint a Contractor to NMRC for a period of 4(Four) Months.

4. Price Schedule

NMRC shall consider the following price, as quoted by the Contractor as part of financial bid.

5. The courts at District GautamBudh Nagar, Uttar Pradesh shall have the exclusive jurisdiction to try all disputes arising out of this agreement between the parties.
6. In consideration of the payments to be made by the Purchaser to the Contractor as specified in this Agreement, the Contractor hereby covenants with the Purchaser to execute the Works and to remedy defects therein in conformity in all respects with the provisions of the Contract and Notice of Award issued. "Any conditions, deviation, assumption, exclusion, suggestion of alternative clauses, request of amendments in conditions & specifications of work submitted by bidders along with his Technical Bid or Financial bid, which is different from the Tender Document, Corrigendum, Addendum issued by NMRC any other correspondence in this regard, shall not be treated as a part of the contract Agreement & shall not be binding upon NMRC in anyway whatsoever at any stage of work during execution or thereafter."
7. The Purchaser hereby covenants to pay the Contractor in consideration of the execution and completion of the Works, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract and NOA.

IN WITNESS where of the parties hereto have caused this Agreement to be executed in accordance with the laws of India on the day, month and year specified above.

For and on behalf of the Contractor
Signature of the authorized official

For and on behalf of the Purchaser
Signature of the authorized official

Name of the official

Name of the official

Stamp/Seal of the Contractor Stamp/Seal of the Purchaser

In the presence of:

In the presence of:

Sign of Witness 1 _____

Sign of Witness 1 _____

Name _____

Name _____

Address _____

Address _____

Sign of Witness 2 _____

Sign of Witness 2 _____

Name _____

Name _____

Address _____

Address _____

Supply, Installation, Testing and Commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

9. Section 9: Forms

Form 1: Letter of Proposal Submission

[Location, Date]

To

GM/Technical

Noida Metro Rail Corporation (NMRC) Limited

Block-III, 3rd Floor, Ganga Shopping Complex,

Noida -201301,

District GautamBudh Nagar, Uttar Pradesh

Subject: Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

Dear Sir,

We, the undersigned, offer to provide the **Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station**, in accordance with your RFP Document dated [Insert Date] and our Proposal. We are hereby submitting our Technical and Financial Proposal, in a sealed envelope. We confirm that we have read the RFP Document in totality and abide by all the terms and conditions stated in the document.

I/we declare that I/we is/are the authorized signatory and have the power by Board Resolution.

We hereby declare that all the information and statements made in this Proposal are true and accept that any misinterpretation contained in it may lead to our disqualification. Our Proposal is binding upon us.

We understand you are not bound to accept any Bid you receive.

Yours Sincerely,

Authorized Signature [In full and initials]:

Name and Title of Signatory:

Name and address of Firm:

Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

Form 2: Firm Details

1.	Title and name of the Project: Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.
2.	State the structure of the Bidder's organization (Bidders to complete/delete as appropriate) Sole Bidder/Consortium
3.	For Bidders who are individual companies or firms, state the following: Name of Company or firm: Legal status: (e.g. incorporated private company, proprietorship, etc.) Registered address: Year of incorporation..... Principal place of business: Contact person: Contact person's title: Address, telephone, facsimile number and e-mail ID of contact person:
4.	Employees Provident Fund No. (attach documentary proof) -
5.	Employees State Insurance Acts in India No. (attach documentary proof) -
6.	GST Registration No. (attach documentary proof) -
7.	PAN (attach documentary proof) -

Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

Form 3: Capability Statement

It is Compulsory for the bidder to fill this statement and the bidder must upload those document that support this statement

Tender Reference No : _____

Name of Work : _____

Name of Bidder: _____

<u>S.No.</u>	<u>ELIGIBILITY CRITERIA</u>	(To be filled by the Bidder)
1	The Bidder should be Sole proprietorship/ partnership firm/ public limited company/ private limited company.	Yes/ No
2	<p>The Bidder should have completed in India during last 7 (Seven) years period ending last day of month previous to the one in which the bids are invited should be either of the following:</p> <ol style="list-style-type: none"> 1. One order of similar nature of value not less than Rs. 41.06 Lakh (Rupees Forty One Lakh Six Thousand only) or 2. Two orders of similar nature of value not less than Rs. 25.66 Lakh (Rupees Twenty Five Lakh Sixty Six Thousand only) each or 3. Three orders of similar nature of value not less than Rs. 20.53 Lakh (Rupees Twenty Lakh Fifty Three Thousand only) each <p>Similar work for this contract shall be "Supply/ installation testing and commission of 33 KV and above Auxiliary Sub station" in NMRC/ any other Metro Organization/ Central govt./ State govt./PSU's/ Private sector companies.</p>	7 Years

Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

S.No.	ELIGIBILITY CRITERIA		(To be filled by the Bidder)								
3	The Bidder should have minimum average annual turnover of Rs. 51.32 Lakh (Rupees Fifty-One Lakh Thirty Two Thousand only) in the last 3 (three) Financial Years (2018-19, 2019-20, 2020-21) preceding the Bid Due Date.	<table><tr><td>FY 2018-19</td><td></td></tr><tr><td>FY 2019-20</td><td></td></tr><tr><td>FY 2020-21</td><td></td></tr><tr><td>Total</td><td></td></tr></table>	FY 2018-19		FY 2019-20		FY 2020-21		Total		
FY 2018-19											
FY 2019-20											
FY 2020-21											
Total											
4.	The Profit of bidder before tax during any of the financial year should be positive during immediately preceding 3 financial years.	<table><tr><td>FY 2018-19</td><td></td></tr><tr><td>FY 2019-20</td><td></td></tr><tr><td>FY 2020-21</td><td></td></tr></table>	FY 2018-19		FY 2019-20		FY 2020-21				
FY 2018-19											
FY 2019-20											
FY 2020-21											
5.	The Bidder should not have been blacklisted/ banned/ declared ineligible for corrupt and fraudulent practices by the Government of India/ any State Government/ Government Agency and Supreme court and contracts have been terminated/ foreclosed by any company / department due to non- fulfillment of Contractual obligation in last 5 (five) financial years.										

Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

Form 4: Work Experience

The following format shall be used for statement of experience of Bidder:

SN	Similar Contract description	Contract Identification Number	Award date & Completion date	Employer's Name, address, telephone number, e-mail etc	Role in contract		If in JV/consortium then % participation	Completion cost	Value of similar work in completed work
					Individual	JV/ Consortium			
1									
2									
3									
4									
Add required number of rows									

Authorized signatory

Name:

Date:

Name of the Bidder with seal

NOTE:

- Only the value of contract as executed by the applicant/member in his own name should be indicated. Where a work is undertaken by a group, only that portion of the contract which is undertaken by the concerned applicant/member should be indicated and the remaining done by the other members of the group be excluded. This is to be substantiated with documentary evidence
- The tenderer shall upload details of work executed by them in the prescribed format for the works to be considered for qualification of work experience criteria. Documentary proof such as completion certificates from the client clearly indicating the nature/scope of work, actual completion cost and actual date of completion for such work should be uploaded. In case work is executed for private client documentary proof such as copy of work order, Bill of quantities, Bill wise details of payment received certified by CA, TDS certificates for all the payments received, copy of final/ last bill paid by the client should be uploaded. The offers submitted without this documentary proof will not be evaluated.
- Value of successfully completed portion of any ongoing work up to the last day of the previous month of tender submission will also be considered for qualification of work experience criteria.
- For completed works, value of work done shall be updated to the last day of the previous month of tender submission price level assuming 5% inflation for Indian Rupees every year and 2% for foreign currency portions per year. The exchange rate of foreign currency shall be applicable 28 days before the submission date of tender.
- In case of joint venture / Consortium, full value of the work, if done by the same joint venture shall be considered. However, if the qualifying work(s) were done by them in JV/Consortium having different constituents, then the value of work as per their percentage participation in such JV/Consortium shall be considered. This is to be substantiated with documentary evidence.
- If the above work(s) comprise(s) other works also, then client's certificate clearly indicating the amount of work done in respect of the "similar work" shall be furnished by the tenderer in support of work experience along-with their tender submissions.

Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

Form 5: Financial Capability Details

Bidder should submit their financial details as per the following:

This is to certify that the Average Annual Turnover of M/s

.....

having registered office at

....., as applicable, is as below:

1.

S.No.	Financial year	Name of the Bidder	Turnover from Similar Work
1.	2020-21		
2.	2019-20		
3.	2018-19		
	Average Annual Turnover		

2.

S.No.	Financial year	Name of the Bidder	Profit before tax
1.	2020-21		
2.	2019-20		
3.	2018-19		

Certificate of the Chartered Accountants/Statutory Auditors

Based on Audited Accounts and other relevant documents of _____ (Name of Bidder), we M/s _____, Chartered Accountants/ Statutory Auditors, certify that the above information pertaining to FY 2018-19, FY 2019-20 and FY 2020-21 is correct.

Signature and Seal of
Chartered Accountants/Statutory Auditors
(with membership no.)

Authorised Signatory (Name & Designation of Authorised Signatory)

In case the Financial Statements for the latest financial year are not audited and therefore the Bidder cannot make it available, the Bidder shall give an undertaking to this effect and the statutory auditor/charted accountant shall certify the same. In such a case, the Bidder shall provide the Audited Financial Statements for 2 (two) years preceding the year for which the Audited Financial Statement is not being provided. Also, pertaining to latest financial year, the bidder shall submit an affidavit certifying that "The Annual Accounts have not been audited so far. We are submitting the CA certified provisional accounts, which shall be substantiated by the Audited Accounts, when prepared."

NOTE:

1. All such documents reflect the financial data of the bidder and not that of sister or parent company.
2. The financial data in above prescribed format shall be certified by CA/ Company Auditor under his signature and stamp in original along with membership no.
3. The Bidder shall provide the audited annual financial statements as required.

Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

Form 6: Memorandum

Name of Work: *Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.*

I/We agree to keep the quoted rate open for acceptance for 180 days from the due date of submission thereof and not make any modification in its terms and conditions.

I/We hereby declare that I/We shall treat the quotation documents, drawings and other records connected with the works as secret/ confidential documents and shall not communicate information derived there from to any person other than the information in any manner prejudicial to the safety of NMRC.

Signature of the bidder with seal
Dated:

Witness:

Address:

Occupation

Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

Form 7: Undertaking

I confirm that We (Tenderer), _____

- a. Have not been banned /declared ineligible for corrupt and fraudulent practices by any government/government-undertaking/ semi-government/ govt. controlled institutions, any court of law having jurisdiction in India for the past 5 (five) years.
- b. Do not have any pending litigation & non-performing contracts during last 5 (five) years. Further, has not been barred by any government/government-undertaking/ semi-government/ govt. controlled institutions
- c. Have not abandoned any work in last 5 (five) years.
- d. Have not delayed in similar work completion during orders executed in last 5 (five) years.
- e. Do not ever been terminated due to poor performance.
- f. Have not suffered Bankruptcy/ insolvency in last 5 (five) years.
- g. Have not been blacklisted/ debarred by any organization during last 5 (five) years.
- h. Have not been be involved in any illegal activity and/or has not been charge sheeted for any criminal act during the last 5 (five) years.
- i. Have not submitted any misleading information in the Bid.
- j. Are financially sound to perform the work.

Authorized

signatory Name:

Date:

Name of the Bidder with seal

Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

Form 8: Power of Attorney

(To be on non-judicial stamp paper of appropriate value as per Stamp Act relevant to place of execution.)

Power of Attorney to be provided by the Bidding Company in favour of its representative as evidence of authorized signatory's authority.

Know all men by these presents, We(name and address of the registered office of the Bidding Company) do hereby constitute, appoint and authorize Mr./Ms.....(name and residential address) who is presently employed with us and holding the position of____, as our Attorney to do in our name and our behalf all or any of the acts, deeds or things necessary or incidental to submission of our Bid for **Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station** in response to the RFP Document dated_____issued by Noida Metro Rail Corporation ("NMRC" or "the Corporation"), including signing and submission of the Bid and all other documents related to the Bid, including but not limited to undertakings, letters, certificates, acceptances, clarifications, guarantees or any other document which the Corporation may require us to submit. The aforesaid Attorney is further authorized for making representations to the NMRC or any other authority, and providing information / responses to the NMRC, representing us in all matters before the NMRC, and generally dealing with the Corporation in all matters in connection with our Bid till the completion of the bidding process as per the terms of the RFP Document and further till the Contract is entered into with the NMRC and thereafter till the expiry of the Contract.

We hereby agree to ratify all acts, deeds and things done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall be binding on us and shall always be deemed to have been done by us.

All the terms used herein but not defined shall have the meaning ascribed to such terms under the RFP Document.

Signed by the within named

.....[Insert the name of the executant company]

through the hand of

Mr.

duly authorized by the Board to issue such Power of Attorney

Dated this day of

Accepted

.....

Signature of Attorney

(Name, designation and address of the Attorney)

Attested

.....

(Signature of the executant)

(Name, designation and address of the executant)

.....

Signature and stamp of Notary of the place of execution

Common seal of has been affixed in my/our presence pursuant to Board of Director's Resolution dated.....

Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

WITNESS

1.

.....
(Signature)
Name

Designation.....
2.

.....
(Signature)
Name

Designation.....

Notes:

- (1)

The mode of execution of the power of attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and the same should be under common seal of the executants affixed in accordance with the applicable procedure. Further, the person whose signatures are to be provided on the power of attorney shall be duly authorized by the executant(s) in this regard.
- (2)

In the event, power of attorney has been executed outside India, the same needs to be duly notarized by a notary public of the jurisdiction where it is executed.
- (3)

Also, wherever required, the executant(s) should submit for verification the extract of the charter documents and documents such as a board resolution / power of attorney, in favour of the person executing this power of attorney for delegation of power hereunder on behalf of the executant(s).

Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

Form 9: Salable Form for Tender Document

Job No.

The required fee of tender form has been deposited in_____Bank A/c No. _____
RTGS/NEFT and the scanned copy of UTR receipt with Transaction Id is being enclosed with E-tender documents. If the copy of UTR receipt is not uploaded with the E-tender the tender shall be rejected.

DETAILS OF EARNEST MONEY ATTACHED

The required amount of Earnest money has been deposited in_____Bank A/c No. _____
_____RTGS/NEFT and the scanned copy of UTR receipt with transaction Id is being enclosed with E-tender documents. If the copy of UTR receipt is not uploaded with the E-tender the tender shall be rejected.

BIDDER

Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

Form 10: Declaration of Refund of Earnest Money

**Noida Metro Rail Corporation (NMRC) Limited
Block-III, 3rd Floor,
Ganga Shopping Complex, Sector-29, Noida -201301,
District Gautam Buddha Nagar, Uttar Pradesh,
India**

[illegible]

The above provided information is true to the best of my knowledge.

Date:

Signature with Stamp/Seal

Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

Form 11: Undertaking pertaining to Personnel

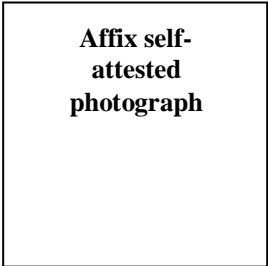
- We confirm to deploy personnel required to achieve progress of work as per approved construction of work program and conditions mentioned in the tender document.
- The contractor shall deploy resources as per the mentioned minimum requirement in the tender and also confirm to deploy manpower over and above the minimum numbers indicated above, if the work requires so.
- These minimum resources are as per the requirements of the various activities at different stages of works. All resources need not to be mobilised simultaneously, resources as per the requirement of various stages of works shall be mobilised in accordance with the instructions of the Engineer. The decision of the Engineer shall be final and bonding.
- The performance of project personal deployed will be evaluated periodically by Employer during the contract period. In case the performance of any of the personnel is not satisfactory, the contractor shall replace them with good personnel immediately as per the directions of the Engineer.

Date:

Signature with Stamp/Seal

Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

Form 12: Proposed Personnel



NAME :

FATHER’S NAME :

DATE OF BIRTH :

PERMANENT ADDRESS :

RESIDENTIAL ADDRESS :

MARITAL STATUS :

EDUCATIONAL QUALIFICATION :

TECHNICAL QUALIFICATION :

EXPERIENCE :

LANGUAGE KNOWN :

NATIONALITY :

CATEGORY :

DATE: 

PLACE: SIGNATURE

(To be filled by contractor)

Attested by authorised person:

Note: A staffing schedule containing the names, qualifications, professional experience and corporate affiliation of all proposed management personnel (above the level of shift supervisor) and specialists for this work. The submission shall include a provisional management structure and organisation chart showing areas of responsibility, relative seniorities and lines of reporting. The proposed staffing plan shall be in conformity with the “Section 4 – Personnel” of tender document.

Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

Form 13: Obligation/ Compliance to be ensured by Contractor

Sl. No.	Items	Compliance of Contractor (To be filled by contractor)	
		Yes	No
1	License for employing contract labour		
2	Compliance of minimum wages Act by payment of wage on 7th of every month through Bank or in the presence of nominated representative of employer (NMRC Supervisor/manager)		
3 (a)	Compliance of provision of ESI & EPF Act		
3 (b)	Ensure treatment in ESI hospital in case of accident/injuries suffered in performance of work and compensation under ESI Act.		
4	Send Accident report to Regional Labour Commissioner (RLC) & ESI authorities.		
5	Observance of working hours, weekly rest and overtime payments as per minimum wages Act-1948.		

Note: - A Non-filling or "No" by contractor will lead to non-eligibility for contractor in further tendering process.

S.N	Description	Reference Clause	Requirement
i	Latest "date for commencement" of the Works	Clause 8.1 of the GCC	Date given in NOA or Employer's Notice to Proceed
ii	Liquidated Damages	Clause 8.5 of the GCC	(i) 0.015% of contract price per day of delay in completion of whole work. (ii) Total maximum limit of LD including sums payable by the employer to designated contractors is 15% as mentioned in GCC.
iii	Insurance for workers/ employees	Clause 15.4 of the GCC	All of the contractor's employees shall have to be covered under ESI and ECA as per Special conditions of contract.
iv	Insurance cover for Contractor's All Risk and other requirements as specified in the GCC	Clause 15 of the GCC	100% of the Total Contract Price.
v	Amount of Third Party Insurance	Clause 15.3 of the GCC	INR 0.75 Million for any one incident, with no. of incidents unlimited.
vi	Period in which all insurances have to be effected	Clause 15.5 of the GCC	Within 1 week from the "date of commencement"

Signature of authorized signatory of Tenderer

Supply, Installation, Testing and Commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

Form 14: Performa for Clarifications / Amendments on the RFP

Sl. No.	Document	Clause No. and Existing Provision	Clarification required	Suggested Text for the Amendment	Rationale for the Clarification or Amendment

Authorized signatory

Name:

Date:

Name of the Bidder with seal

Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

Form 15 : Bid Capacity Information

Name and brief particulars of contract (Clearly indicate the part of the work assigned to the applicants)	Name of client with telephone number and fax number	Contract Value In Rupees Equivalent (Give only the value of work assigned to the applicant(s))	Value of balance work yet to be done in Rupee equivalent as on last day of the previous month of tender submission	Date of Completion as per Contract Agreement	Expected Completion Date	Delay if any, with reason	Value of work to be done during next 4 months with effect from the first day of the month of tender submission
Total							

S.No.	Financial year	Total Value of Works done as per audited financial statements
1	FY 2020-21	
2	FY 2019-20	
3	FY 2018-19	

Bid Capacity (Bidder shall calculate, mention his bid capacity and enclose the supporting calculation)

A = Rs.

N =years

$$B = R_s \dots\dots\dots$$

Assessed available bid capacity = $2 \cdot A \cdot N - B$

Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

Certificate of the Chartered Accountants / Company Auditor

We, M/s _____, Chartered Accountants/ Company Auditors, certify that the above information is correct.

Name of Chartered Accountants / Company Auditor

Signature and Seal of Chartered Accountants/ Company Auditor

Membership Number & UDIN No. of Chartered Accountants/ Company Auditor

Authorised Signatory

(Name & Designation of Authorised Signatory)

NOTE:

1. The financial data in above prescribed format shall be certified by Chartered Accountant/ Company Auditor in original under his signature & stamp along with audited financial statements
2. Value of existing commitments for on-going works during period of 4 months w.e.f. from the first day of the month of tender submission has to be uploaded by the tenderer in Form. These data shall be certified by the Chartered Accountant with his stamp and signature in original with membership number.

Supply, Installation, Testing and Commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

Form 16: Bid Offer/ BOQ

To

GM/Technical
Noida Metro Rail Corporation (NMRC) Limited
Block-III, 3rd Floor, Ganga Shopping Complex
Noida -201301,
District GautamBudh Nagar, Uttar Pradesh

Sub: Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

Dear Sir,

I/we have read and examined the RFP document, general terms and conditions.

I/we hereby quote for the Total Price for **Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station** specified below, payable by NMRC.

S. No.	Description	Total Amount in Rs.	Amount in Words
1	Estimated value of work	51,31,672.00	(Rupees Fifty One Lacs Thirty One Thousands Six Hundred Seventy Two only)

S.N.	Quoted amount (Rs.)	
1	In words	
	In figures	
2	Rebate in % (percentage) if any	
	In words	
	In figures	

Signature and Name of the Authorized Person

NAME OF THE BIDDER AND SEAL

Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

BOQ/PRICE SCHEDULE

GENERAL DESCRIPTION:

a) Transformer should be type tested and the report should not be more than 5 years old. Transformer shall also comply with standards in force when the transformer is manufactured, particularly IEC 60076, Latest version, IS 2026; Latest version and IS 11171/1985.

Maximum size available (L-2600mm, W-2000mm, H-2550mm)

b) Augmenting existing LV Panel of M/s Neptune make, shall strictly be as per IEC-61439.

The additional cubicle being made for housing 800 Amps, 415V ACB shall have Type tested design as per IEC-61439. The cubicle shall pass the internal arc fault containment test in accordance with IEC 61641 for fault current rating of 50 kA for 0.3 seconds.

Panel augmentation & modification shall be minimum complying form 4b-type5 design. The colour of cubicle shall have the same RAL code as existing LV Panel.

LT panel bus bar shall be capable of withholding the mentioned rated and fault current, the same shall be type tested as per IEC-61439 and temperature rise as per IEC 60890.

c) Statutory sanctions such as E.I.G. clearance shall be under the scope of contractor.

Application for grant of EIG shall be sent after performing the site test reports as per relevant IS/IEC.

d) Type test certificate shall not be more than 5 year old of any equipment.

e) The work/Equipment shall be in compliance of particular specification & BOQ.

f) The manufacturing clearance of transformer shall be given after GTP approval by Engineer- in charge and dispatch clearance shall be given after satisfactory completion of FAT.

g) The contractor shall submit the design documents for Augmentation of LV Panel such as GAD control wiring drawing and other relevant certificates. The augmentation clearance shall be given after approval of design documents.

h) The contractor shall provide fault discrimination chart after augmenting LV Panel.

S.N.	Description of Items	Qty.	Unit	Rate	Amount
1	TRANSFORMER: SITC of Cast Resin Dry Type, 1000KVA, 33/0.415kV, 3 Phase, 50Hz, Dyn11 vector Group, Aluminium wound, Air Natural Cooling, Class F insulation associated with winding Temperature indicator/controller actuated by means of resistance temperature detector embedded in LV windings, indoor type Transformer with Approximately 6% impedance, OFF load tap changer, tapping on HV side in steps @0, $\pm 2.5\%$ and $\pm 5\%$ voltage range, having cable end termination on HV side suitable for 3X1Cx95 Sqmm Cu XLPE cable of 33KV grade and LT Cable termination of 4Rx3.5Cx240Sqmm armoured Aluminium conductor cables on L.V. side with neutral bought out separately including supplying and laying of copper conductor multicore control cable from Transformer to HT Breaker for safety tripping and the magnetic	1	Set		

Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

	<p>circuit of transformer shall be in low loss oriented - grain silicon steel sheet.</p> <p>The connection with different terminals of transformer shall be through C-Type or suitable connector for sufficient clearances from transformer windings. HV connections of transformers shall be connected through insulated cables. HV terminals shall have suitable arrangement to provide sufficient clearance to 33 kV cables from the transformer windings.</p> <p>Transformer shall be fitted with a temperature protection system that allows winding temperatures to be monitored (this shall consist of two sensors placed on each low voltage winding; one alarm sensor and one trip out sensor).</p> <p>The transformer may be supplied in cubicle with enclosure without any HV portion exposed. The door shall be provided with a mechanical system interlock (Castle lock & key type).</p> <p>Transformer fire protection scheme shall cover supply, installation, testing and commissioning of automatic clean agent flooding system considering the following when computing volume to verify suitability and to establish design limitations complete for dry type transformer.</p> <p>*Volume of hazard area</p> <p>*Specific volume of clean agent</p> <p>*Discharge time and flow rates</p> <p>*Design concentration and design factors</p> <p>*detector/discharge tubing placement</p> <p>Gas flooding of 4.2 percent cleaning agent concentration by volume as per NFPA- 2001 along with FACP and should have interface with main control fire alarm system.</p> <p>Approved make of transformer- M/s ABB / M/s RAYCHEM or equivalent.</p>				
	1000KVA Transformer as described above				
2	HT CABLE				
	i)- Supply & laying of 33 kV grade 3x1Cx95 sqmm Copper XLPE insulated PVC sheathed cable as per attached GTP.	30	mtr		
	ii)- Termination of above cable at GIS end	3	Nos		
	iii)-Termination of above cable at Transformer end	3	Nos		
3	MODIFICATION IN EXISTING MAIN DISTRIBUTION PANEL (INDOOR TYPE) - Neptune Make				
	Incoming from Transformer (1000KVA) :- 1Nos. In existing enclosure.				
	i) Supply, Installation, Testing & commissioning of 1Nos. 1600Amps., 415V, 50kA,4P with 100% neutral electrically operated draw out type, ACB complete with safety shutters, 240V AC shunt trip coil & closing coil and having microprocessor based (EMI & EMC Certified) with (1) Communication capability (2) Provision for	1	Set		

Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

	<p>measurement of three phase current (3) Protection against long time+ short time+earth fault (all with adjustable time delays) + instantaneous (4) Zone selective interlocking unit for total discrimination (5) Communication Options to remotely read and set parameters for the protections functions, Transmission of ammeter measurements (6) Signaling of the cause of alarm & tripping, maximeter reset etc (7) 6NO+6NC contacts for interlock & indications (8) 1 no. of CT in the neutral to connect with the trip unit along with following items:</p> <ol style="list-style-type: none"> 1Nos. Motor wound spring closing mechanism 1Nos. Microprocessor release PR122 (EMI & EMC Certified) for over current, earth fault & short circuit protection, instantaneous fault 3Nos. CT's for APFCR relay 1Nos. Undervoltage Release Castle Lock & Key arrangement on Panel SCADA integration incorporating signals specified as per specifications. Existing multifunctional meter, APFCR relay, indication lamps, TNC switch, ALR switch, priority selector switch shall be used for metering & instrumentation purpose. 				
4	Shifting of Existing 800A ACB to New Enclosure				
	<p>Installation, Testing & commissioning of new enclosure of size W600xH2125xD800 and shifting of existing 800A ACB with following accessories The contractor shall also incorporate the existing clean agent based fire suppression system in its entire cubicle.</p> <ol style="list-style-type: none"> 1Set. Phase indicating lamps suitable for 230 V AC fittings with back up hrc fuse/MCB. 4Nos. Breaker ON/OFF/TRIP/'Spring Charged', indicating lamps. 1Nos. T-N-C breaker control switch. (Trip/Neutral/Close) 3Nos. CT's for APFCR relay 1Nos. auto/Local/Remote selector switch 1Nos. Undervoltage Release 3 Nos. Metering CT (800/5A, CL-0.5, 15VA) SECURE/L&T make energy meter of 0.5s class Having provision for SCADA integration for signals as per specifications. 	1	Set		
5	Replacement of Horizontal Bus Bars				
	<p>Existing Tinned Copper Bus bar of 630A (size 2x40x10)mm shall be replaced with 1600A (Size 2 x 60x 10)mm for LHS part up to buscoupler section. Bus bars shall be colour coded and insulated by heat shrinkable sleeves & clip on shrouds for joints.</p> <p>Note: - Work shall complete with interlocking of new Incoming Breaker with Bus coupler and Other incomer with necessary changes in control wiring. The existing LV panel is manufactured acc. To</p>	1	Set		

Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

	IEC 61439-1, the new cubical shall also having type tested certificate as per IEC 61439-1.				
6	LT CABLES:				
	a) Supply and laying of 3.5C, 240 sqmm Aluminium XLPE insulated, 1100 V grade armoured FRLSH aluminum cable on existing cable tray including supports, clamps and dressing in all respect etc.	50	mtr		
	b) Supply & Termination of above cable having bimetallic lug (Cu-Al).	2	Set		
	c) Supply & Termination of above cable having Aluminium lug.	2	Set		
7	EARTHING				
	Providing and fixing of 50x6 sqmm GI flat strip for connection on surface or in recess for connections as required.	50	mtr		
8	Dismantling existing 315kVA transformer and its transportation from Sec-137 metro station to RS depot.	1	Set		
Total amount					
Total amount including GST					

Please Note:

The Bidder with the lowest quoted cost for "Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station" (L1 bidder) shall be selected for the award of contract.

The Bidder shall be required to quote the percentage in the BOQ.

It will be deemed to include Duties, Taxes, GST Octroi, Royalty etc., cost of all plants, labour, supervision, materials, transport, all temporary works, erection, maintenance, utility identification, contractor's profit and establishment/ overheads, together with preparation of design and drawings, all general risks, insurance liabilities, compliance of labour laws and obligations set out or implied in the contracts.

The work executed against the BOQ items in would be paid on measurement basis.

The Contractor may raise their 'On Account' payments on monthly basis as per the status of work on the last day of the respective month.

The Financial Bid submitted is unconditional and fulfils all the requirements of the TOR Document.

We have completely read and understood the Bid Document. The Financial Tender submitted is unconditional and fulfils all the requirements of the Tender Document.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from contract negotiations, up to expiration of the validity period of the Proposal. We understand you are not bound to accept any Proposal you receive.

Signature and Name of the Authorized Person

NAME OF THE BIDDER AND SEAL

Supply, Installation, testing and commissioning of 1000 kVA transformer with one no. LT breaker, removal of existing 315kVA transformer and other associated work at Sector -137 metro station.

Form 17: Bid Details

The following list is intended to help the tenderers in submitting offer which are complete. An incomplete offer is liable to be rejected. Tenderers are advised to go through the list carefully and take necessary action.

S.No.	Particulars	Attached Yes / No / Not Applicable	Page no. (Mandatory)
1	Bid Processing Fees		
2	Earnest Money Deposit		
3	Form 1: Letter of Proposal Submission		
4	Form 2: Firm details		
5	Form 3: Capability Statement		
6	Form 4: Work Experience		
7	Form 5: Financial Capability Details		
8	Form 6: Memorandum		
9	Form 7: Undertaking		
10	Form 8: Power of Attorney		
11	Form 9: Salable Form for Tender Document		
12	Form 10: Declaration of Refund of Earnest Money		
13	Form 11: Undertaking pertaining to Personnel		
14	Form 12: Proposed Personnel		
15	Form 13: Obligation/ Compliance to be ensured by Contractor		
16	Form 14: Performa for Clarifications / Amendments on the RFP		
17	Form 15: Bid Capacity Information		
18	Form 16: Bid Offer/ BOQ		
19	Statutory proof of existence as the legal entity		
20	Work Order/ Signed Contracts/ Completion Certificates, clearly indicating the value and nature of experiences		
21	A copy of the Audited balance sheets and Profit and Loss Statements for the last 3 (three) financial years		
22	Self attested copy of ITR for the last 3 (three) financial years		
23	Copy of PAN		
24	Self attested copy of GST registration certificate, EPF, ESI		
25	Valid Electrical Contractor License		
26	Any other document asked by the Corporation if submitted, specify the documents Or Any other document which the Bidder considers relevant		

GENERAL CONDITIONS OF CONTRACT



NOIDA METRO RAIL CORPORATION LTD.

(A joint venture of Govt. of India and Govt. of U.P.)

JUNE 2020

GENERAL CONDITIONS OF CONTRACT

NOIDA METRO RAIL CORPORATION LTD.

BLOCK -III,3rd FLOOR, GANGA COMPLEX,

SECTOR -29,NOIDA-201 301

DISTRICT GAUTAM BUDH NAGAR,UTTAR PRADESH,INDIA

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	1	DEFINITIONS AND INTERPRETATION
Definitions	1.1	In the contract (as defined below) the words and expressions defined below shall have the meanings assigned to them, except where the context requires otherwise. Words indicating persons or parties include corporations and other legal entities except where the context requires otherwise.
	1.1.1	Documents
	1.1.1.1	"Appendix to Form of Tender" means the completed pages in title Appendix, which are appended to and form part of the Tender.
	1.1.1.2	"Bill of Quantity" means a document containing various items of payment and contains schedule of Payment also.
	1.1.1.3	"Construction and/or Manufacture Documents" means all drawings, operation and maintenance manuals, and other manuals and information of a similar nature, to be submitted by the Contractor.
	1.1.1.4	"Contract" means the Contract Agreement, the Letter of Acceptance, the letter of tender, General Conditions of Contract, Special Conditions of Contract, the Employer's Requirements, the Notice Inviting Tender, Instructions To Tenderers, the Contractor's Proposal, the Schedules, and such further documents which are listed in the Letter of Acceptance or Contract Agreement (in completed).
	1.1.1.5	"Contract Agreement" means the contract agreement referred to in Sub-clause 1.4. It shall also include all subsequent modifications/ amendments to the Contract as a result of the communications or negotiation proceedings between the parties.
	1.1.1.6	"Contractor's Proposal" means the proposal submitted by the Contractor with the Tender, as modified and accepted by the Employer and included in the Contract. Such documents may include the Contractor's preliminary design.
	1.1.1.7	"Contractor's Document" means the calculations, computer programme and other softwares, drawings, manuals and other documents of a technical nature(if any) supplied by the Contractor under the Contract.
	1.1.1.8	"Design Data" means all specifications, plans, drawings, details, graphs, sketches, models, levels, setting-out dimensions, calculations duly checked by the Contractor and other documents relating to the design of the Works prepared or to be prepared by or on behalf of the Contractor.
	1.1.1.9	"Drawings" means the Employer's Drawings and the Drawings submitted by the Contractor and any modification of such drawings as any, from time to time, be furnished or for which the Engineer has issued a Notice of No Objection.
	1.1.1.10	"Employer's Requirements" means the description of the scope, standard, design criteria, specifications, drawings, programme of work, indigenization programme (where applicable) as included in the Contract, and any alterations and modifications thereto in accordance with the Contract.
	1.1.1.11	"Interim Payment Schedule" means the schedule included for each Cost Centre in the Pricing Document and accepted by the Employer to be

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used for interim payments in relation to achievement of milestones under that Cost Centre, as the same may be revised from time to time in accordance with Clause 11.

- 1.1.1.12 **"Letter of Acceptance"** means the formal acceptance to work by the Employer of the Tender.
- 1.1.1.13 **"Notice to Proceed"** means the notice issued by the Employer to the Contractor communicating the date on which the Works are to be commenced.
- 1.1.1.14 **"Letter of Tender"** means the document entitled letter of tender, which was completed by the Contractor and includes the signed offer to the Employer for the Works.
- 1.1.1.15 **"Conditions of Contract on Safety & Health and Environment"** means the Employer's manual containing the requirements and conditions to be met during the execution of the Works by the Contractor.
- 1.1.1.16 **"Schedules"** means the information and data submitted with the Tender, as included in the Contract.
- 1.1.1.17 **"Tender"** means the Contractor's priced offer to the Employer for the designing where ever applicable, execution, manufacture, and completion of the whole of Works, testing and commissioning (including Integrated Testing and Commissioning where ever applicable) and remedying of any defects therein, as accepted by the Letter of Acceptance.
- 1.1.1.18 **"Schedule of Milestones"** means the schedule included in each Cost Centre in the Pricing Document, describing the Milestones and stipulating dates by which the Milestones are to be achieved under that Cost Centre in order to maintain interim payments by the Employer to the Contractor in accordance with the Interim Payment Schedule for that Cost Centre, as the same may be revised from time to time in accordance with the Contract.
- 1.1.1.19 **"Schedule of Payment"** means the schedule included in the Bill of Quantity for payment in various stages on part of the works.
- 1.1.1.20 **"Special Conditions of Contract"** means any special conditions of contract issued by the Employer prior to submission of the Tender or negotiated and agreed in writing by the Employer and the Contractor prior to conditional upon acceptance of the Tender.
- 1.1.1.21 **"Works Programme"** means the programme showing the sequence, method and timing of investigations, design, issue of No Objection Notices, execution, manufacture, delivery to site, erection, installation, testing, commissioning of the Works (including Integrated Testing and Commissioning), indigenization (where applicable) and related activities in the form and content prescribed by the Employer's Requirements, or any amended or varied version thereof, as submitted by the Contractor and for which the Engineer has issued a Notice of No Objection.

1.1.2 Persons

- 1.1.2.1 **"Party"** means the Employer or the Contractor as the context requires.
- 1.1.2.2 **"Tenderer or Bidder"** means the person submitting a bid/Tender.
- 1.1.2.3 **"Contractor"** means the person whose Tender has been accepted by the Employer and the legal successors in title to such person, but not

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(except with the consent of the Employer) any assignee of such person.

- 1.1.2.4 **"Contractor's Representative"** shall mean a person named by the Contractor in the Contract or appointed from time to time by the Contractor under Sub-clause 4.3 to act on behalf of Contractor.
- 1.1.2.5 **"Designated Contractors"** means any of the following whose activities or the works they are engaged to carry out, affect or are affected by the Works, in any way or at any time:
- a. contractors, design consultants and utility authorities engaged on the Project from time to time by the Employer;
 - b. Sub-contractors of any tier of the contractors above; provided that the definition shall exclude the Contractor and his Sub-contractors of any tier in relation to the Works.
- 1.1.2.6 **"Other Contractor"** means a person employed by or having Contract directly or indirectly with the Employer otherwise than through the Contractor.
- 1.1.2.7 **"Designer"** means the Contractor, or part of the group forming the contractor, person, firm or company or group of companies, or any replacement, carrying out the Design of Works or part thereof.
- 1.1.2.8 **"Employer"** means NOIDA METRO RAIL CORPORATION LIMITED (NMRC), its legal successors and assignees.
- 1.1.2.9 **"Engineer"** means any person nominated or appointed from time to time by the Employer to act as the Engineer for the purposes of the Contract and notified as such in writing to the Contractor.
- 1.1.2.10 **"Engineer's Representative"** means any Assistant of the Engineer appointed from time to time by the Engineer under Sub-clause 3.3
- 1.1.2.11 **"Sub-contractor"** means any person named in the Contract as a sub-contractor, manufacturer or supplier for a part of the Works or any person to whom a part of the Works has been sub-contracted with the consent of the Employer and the legal successors in title to such person, but not any assignee of such person.
- 1.1.3 **Dates, Times and Periods**
- 1.1.3.1 **"Commencement Date"** means the date on which the Contractor shall commence the Works on the written instructions of the Employer contained in the Notice to Proceed.
- 1.1.3.2 **"Contract Period"** means the period from the Commencement Date to the end of Defects Liability Period including Integrated Testing and Commissioning and as certified by the Engineer under Clause 7.11 (or as extended under Sub-clause 10.3).
- 1.1.3.3 **"Day"** means a calendar day, **"Week"** means 7 calendar days, **"Month"** means a calendar month and **"Year"** means 365 days.
- 1.1.3.4 **"Effective Date"** means the date on which the Contract comes into force and effect.
- 1.1.3.5 **"Gazetted Holiday"** means every holiday which is observed by NOIDA METRO Rail Corporation Limited as a gazetted holiday as well as a weekly holiday.
- 1.1.3.6 **"General Holiday"** means Sunday.

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- 1.1.3.7 **"Key Date"** means a date identified as such in the Contract.
- 1.1.3.8 **"Milestone"** means the completion of a part of the Works or the occurrence of an event identified as such in the Schedule of Milestones.
- 1.1.3.9 **"Milestone Date"** means the date prescribed in the Schedule of Milestone by which a Milestone is to be achieved, if Interim Payments for the Cost Centre in which the Milestone is included are not to be suspended.
- 1.1.3.10 **"Stage"** means level of progress of the works identified as such and more particularly described in the Employer's Requirements for which a Key Date for the achievement thereof is stipulated in the Contract.
- 1.1.3.11 **"Time for Completion"** means the time for completing the Works or a section or a part thereof (as the case may be), and passing the Tests on Completion, including Integrated Testing and Commissioning, as stated in the contract, calculated from the Commencement Date.
- 1.1.4 Tests and Completion**
- 1.1.4.1 **"Factory Tests"** means the tests required to be carried out in the factory premises on components, equipment, subsystem, system, etc. during and/or after manufacture in the factory.
- 1.1.4.2 **"Integrated Testing"** in the contracts where applicable means the programme of tests performed by the Contractor at the direction of the Engineer following satisfactory completion of Contractor's tests on his equipment, sub-systems or system to verify and confirm the compatibility and compliant performance of his equipment/ sub-system/ system with the equipment/ sub-system/ system provided by others.
- 1.1.4.3 **"Milestone Certificate"** means the certificate to be issued by the Engineer in relation to the achievement or otherwise of Milestones.
- 1.1.4.4 **"Performance Certificate"** means the certificate issued by the Engineer under Sub-clause 10.9.
- 1.1.4.5 **"Taking Over Certificate"** means a certificate issued under Clause 9.1.
- 1.1.4.6 **"Tests on Completion"** means the tests specified in the Contract and designated as such, including Integrated Testing where applicable and any other such tests as may be agreed by the Engineer and the Contractor, or instructed as a Variation, which are to be carried out before the Works, or any Section are taken over by the Employer.
- 1.1.5 Money and Payments**
- 1.1.5.1 **"Contract Price"** means the sum stated in the Letter of Acceptance as payable to the Contractor, subject to such additions thereto or deductions therefrom as may be made under the provisions of the Contract.
- 1.1.5.2 **"Cost"** means all expenditure properly incurred (or to be incurred) by the Contractor, whether on or off the Site,
- 1.1.5.3 **"Cost Centre Amount"** means the amount apportioned to a Cost Centre as set out in the Pricing Document, as the same may be revised from time to time in accordance with the Contract.
- 1.1.5.4 **"Final Payment Certificate"** means the payment certificate issued by the Engineer under Sub-clause 11.9.

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- 1.1.5.5 **"Final Statement"** means the agreed statement defined in Sub-clause 11.10.
- 1.1.5.6 **"Foreign Currency"** means a freely convertible international trading currency in which part of the Contract Price is payable, but not the Local Currency.
- 1.1.5.7 **"Interim Payment Certificate"** means any payment certificate issued by the Engineer under Sub-clause 11.5, other than the Final Payment Certificate.
- 1.1.5.8 **"Local Currency"** means Indian Rupees (INR).
- 1.1.6 **Other Definitions**
- 1.1.6.1 **"Approval or Approved"** means Approval in writing including subsequent written confirmation of previous verbal approval.
- 1.1.6.2 **"Contractor's Equipment"** means all machinery, apparatus, appliances, other things of whatsoever nature required for purpose of the Contract, including without limitation, Contractor's Plant and Equipment, or Materials to or from the Site, but does not include Plant, or Materials intended to form or forming part of the Permanent Works.
- 1.1.6.3 **"Cost Centre"** means a group of activities and/ or items of work identified as such in the Pricing Document.
- 1.1.6.4 **"Materials"** means things of all kinds (other than Plant) to be provided and incorporated in the Permanent Works by the Contractor, including the supply-only items (if any), which are to be supplied by the Contractor as specified in the Contract.
- 1.1.6.5 **"Plant"** means the machinery, equipment, and apparatus and the likes, intended to form or forming part of the Permanent Works, including the supply-only items (if any), which are to be supplied by the Contractor as specified in the Contract.
- 1.1.6.6 **"Section"** means a part of the Works specifically designated in the Appendix to Form of Tender as a Section (if any)
- 1.1.6.7 **"Site"** means the places provided by the Employer where the Works are to be executed and to which Plant, Rolling Stock and Materials are to be delivered and any other place as may be specifically designated in the Contract as forming part of the Site. Site includes Depot, where Rolling Stock will be delivered, tested and commissioned as provided in the Contract.
- 1.1.6.8 **"Scheduled Bank"** means a bank included in the second schedule to the Reserve Bank of India Act, 1934, or modifications thereto.
- 1.1.6.9 **"Specification"** means the Specification referred to in the contract and any modification thereof or addition thereto, as may from time to time be furnished or approved in writing by the Engineer.
- 1.1.6.10 **"Test"** means such Tests as are prescribed in the Specifications or by the Engineer or Engineer's Representative, whether performed by the Contractor or by the Engineer or his Representative or any agency acting under the direction of the Engineer.
- 1.1.6.11 **"Variation"** means any alteration and/ or modification to the Employer's Requirements, which is instructed by the Engineer or approved as a variation by the Engineer, in accordance with Clause 12.
- 1.1.6.12 **"Works"** means the work, both permanent and temporary, or services to

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be carried out, designed, manufactured, fabricated, delivered to Site, erected, installed, completed, tested, commissioned, (including Integrated Testing and Commissioning) and remedying of any defects, and/ or supplied in accordance with the Contract and include Plant, Rolling Stock and Materials and their accessories.

1.1.6.13 **"Permanent Works"** means the permanent works to be designed and executed in accordance with the Contract.

1.1.6.14 **"Temporary Works"** means all temporary works of every kind (other than Contractor's Equipment) required for the execution and completion of the Works, and the remedying of any defects.

1.1.6.15 **"Project"** means Noida-Greater Noida Mass Rapid Transport System (MRTS),

Interpretation

1.2 In the Contract except where the context requires otherwise:

- 1.2.1 a. words indicating one gender include all genders;
- b. words indicating the singular also include the plural and words indicating the plural also include the singular and
- c. "written" or "in writing" means hand-written, type written, printed or electronically made and resulting in a permanent record.

The marginal words and other headings shall not be taken into consideration in the interpretation of these conditions.

1.2.2 Terms and expressions not herein defined" shall have the meanings assigned to them in the "Indian General Clauses Act, 1897" or the Indian Contract Act or the Indian Sale of Goods Act or any other applicable Indian Law, as the case may be.

Law and Language

1.3 The Contract shall be governed by the Acts and Laws of India, the rules, regulations and bye-laws of the concerned public bodies and authorities. Language of the Contract shall be English.

Contract Agreement

1.4 The Employer and the Contractor shall execute a Contract Agreement, with such modifications as may be necessary to record the Contract. The costs of stamp duties and similar charges imposed by law shall be borne by the Contractor.

Priority of Documents

1.5 The documents forming the Contract are to be taken as mutually explanatory of one another. If there is an ambiguity or discrepancy or inconsistency in the documents, the Engineer shall issue any necessary clarification or instruction to the Contractor, and the priority of the documents shall be as follows:

- a. The Contract Agreement;
- b. The Letter of Acceptance;
- c. Pre and Post bid proceeds
- d. Form of Tender
- e. BOQ/Payment schedule
- f. NIT
- g. ITT
- h. The Outline Design Specifications (Design Criteria) and Outline

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- Construction Specifications; or any other specification
- i. Drawings
 - j. The Employer's Requirements
 - k. The Special Conditions of Contract;
 - l. The General Conditions of Contract;
 - m. The Contractor's Proposal; and
 - n. Any other document forming part of the Contract.
- Care and Supply of Construction and/or Manufacture Documents** **1.6** The Construction and/or Manufacture Documents shall be in the custody and care of the Contractor during the Contract. Unless otherwise stated in the Employer's Requirements, the Contractor shall provide three copies for the use of the Engineer and Assistants (as referred to in Sub-clause 5.3).
- The Contractor shall keep, on the Site, one complete set of the documents forming the Contract, the Construction and/or Manufacture Documents, Variations, other communications given or issued from time to time and the documents/samples mentioned in Sub-clause 5.3. The Employer, the Engineer and their Assistants (as referred to in Sub-clause 3.3) shall have the right to access these documents at all reasonable times.
- On discovery of any technical error or defect in a document intended to be used for the purpose of Contract, the Contractor shall promptly give notice to the Engineer of such error or defect.
- Communications** **1.7** Communications between parties, unless otherwise specified shall be effective only when made in writing. A notice will be effective only when delivered sent to the address of the Party by registered post or by telex or telefax or by an e-mail to the email ID of the Party or delivered by hand to the Party.
- Employer's Use of Contractor's Documents** **1.8** As between the Parties, the Contractor shall retain the copyright and other intellectual property rights in the Contractor's Documents and other design documents made by (or on behalf of) the Contractor.
- The Contractor shall be deemed (by signing the Contract) to give to the Employer a non-terminable, transferable, non-exclusive royalty-free licence to copy, use and communicate the Contractor's Documents, including making and using modifications of them. This licence shall:
- a. apply throughout the actual or intended working life (whichever is longer) of the relevant parts of the Works,
 - b. entitle any person in proper possession of the relevant part of the Works to copy, use and communicate the Contractor's Documents for the purposes of completing, operating, maintaining, altering, adjusting, repairing and demolishing the Works, and
 - c. in the case of Contractor's Documents which are in the form of computer programs and other software, permit their use on any computer on the Site and other places as envisaged by the Contract, including replacements of any computers supplied by the Contractor.
- After payment of the consideration under the Contract to the Contractor all the intellectual property rights of Contractor vested in the Works, executed under the Contract, should get transferred and vested in the Employer.

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- Contractor's Use of Employer's Documents** 1.9 As between the Parties, the Employer shall retain the copyright and other intellectual property rights in the Employer's Requirements and other documents made by (or on behalf of) the Employer. The Contractor may, at his cost, copy, use, and obtain communication of these documents for the purposes of the Contract.
- They shall not, without the Employer's consent, be copied, used or communicated to a third party by the Contractor, except as necessary for the purposes of the Contract.
- Compliance with Statutes, Regulations and Laws** 1.10 The Contractor shall familiarise themselves and conform in all aspects with:
- the provision of any enactment in India as applicable from time to time
 - the regulations or bye-laws of any local body and utilities.
 - The Contractor shall be bound to give all notices required by statute, regulations or bye-laws, as aforesaid and to pay all fees and bills payable in respect thereof. The Contractor will arrange necessary clearances and approvals before the Work is taken up.
- Ignorance of Rules, Regulations and Bye-laws shall not constitute a basis for any claim at any stage of work.
- The Contractor shall indemnify the Employer against all penalties and liabilities of every kind of breach of any such enactment, laws, regulations, bye-laws or rules.
- Joint and Several Liability** 1.11 If the Contractor is (under applicable Laws) a joint venture, consortium, or other incorporated or unincorporated grouping of two or more Persons:
- these Persons shall be deemed to be jointly and severally liable to the Employer for the performance of the Contract;
 - these Persons shall notify the Employer of their leader who shall have authority to bind the Contractor and each of these persons; and
 - the Contractor shall not alter its composition or legal status without the prior consent of the Employer.
- 2 THE EMPLOYER**
- General Obligations** 2.1 The Employer shall provide the Site/area of works and shall pay the Contractor in accordance with the Contract.
- Access to and Possession of the Site** 2.2 The Employer shall grant the Contractor right of access to, and / or possession of, the Site progressively for the completion of Works. Such right and possession may not be exclusive to the Contractor. The Contractor will draw/modify the schedule for completion of Works according to progressive possession/right of such sites.
- If the Contractor suffers delay from failure on the part of the Employer to grant right of access to, or possession of the Site, the Contractor shall give notice to the Engineer in a period of 28 days of such occurrence. After receipt of such notice, the Engineer shall proceed to determine any extension of time to which the Contractor is entitled and shall notify the Contractor accordingly.
- For any such delay in handing over of site, Contractors will be entitled to

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		only reasonable extension of time and no monetary claims, whatsoever shall be paid or entertained on this account.
Permits, Licences or Approvals	2.3	<p>It shall be Contractor's exclusive responsibility to get approvals, permits or license required for the Contract. However, the Employer may (where he is in a position to do so) provide reasonable assistance to Contractor at the request and cost of the Contractor in getting Permits, License or Approvals required during the Contract.</p> <p>The rendering of such assistance by the Employer shall not be interpreted as a pretext by the Contractor as condoning of any delay or non-performance of any of the Contractors obligations. The following-up of all such applications shall be the responsibility of the Contractor.</p>
Assignment by the Employer	2.4	<p>The Employer shall be fully entitled without the consent of the Contractor, to assign the benefit of the part thereof and any interest therein or thereunder to any third Party.</p>

3

THE ENGINEER

Appointment of Engineer	3.1	<p>The Employer shall notify the Contractor in writing of the appointment and identity of the Engineer and of any replacement from time to time, in absence of any written communication from the Employer about the appointment/identity/replacement of the Engineer, the Chief Project Manager/HOD of the Employer, in charge of the Works being executed by the Contractor, would be the Engineer under the Contract..</p>
Duties and Authorities of the Engineer	3.2	<p>The Engineer shall carry out the duties specified in the Contract. The Engineer shall have no authority to amend the Contract.</p> <p>The Engineer may exercise the authority specified in, or necessarily to be implied from the Contract. If the Engineer is required to obtain the specific approval of the Employer before exercising such authority, such requirements shall be as stated in Special Conditions of Contract. Any requisite approval shall be deemed to have been given by the Employer for any such authority exercised by the Engineer.</p> <p>The Engineer shall have no authority to relieve the Contractor of any of his duties, obligations, or responsibilities under the Contract. Any proposal, inspection, examination, testing, consent, approval or similar act by the Engineer (including absence of disapproval) shall not relieve the Contractor from any responsibility, including responsibility for his errors, omissions, discrepancies, and non-compliance with Sub-clause 5.4.</p> <p>The Engineer shall copy to the Employer all communications given or received by him in accordance with the Contract.</p>
Engineer's Authority to Delegate	3.3	<p>(i) The Engineer may from time to time assign and delegate authority to Engineer's Representatives/Assistants and may also revoke such assignments and delegations. The delegation or revocation shall be in writing and shall be applicable only after same has been notified in writing to the Contractor.</p> <p>(ii) Each Assistant to whom duties have been assigned or authority has</p>

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been delegated shall be authorized to issue instructions to the Contractor to the extent defined by the delegation. Any determination, approval, check, certificate, consent, examination, inspection, instruction, notice, proposal, request, test or similar act by an Assistant shall have the same effect as though the act had been an act of the Engineer. However:

- a. Any failure to disapprove any Plant, Goods, Material, Design and Workmanship shall not prejudice the right of the Engineer to reject such Plant, Goods, Material, Design and Workmanship;
- b. if the Contractor questions any determination or instruction of an Assistant of the Engineer, the Contractor may refer the matter to the Engineer within three days of such decision having been given, who shall confirm, reverse or vary such determination or instruction.

Engineer's Instructions

3.4

The Contractor shall comply with instructions given by the Engineer in accordance with the Contract.

The Contractor shall give reasonable notice to the Engineer of any instruction, which he considers necessary for the execution of the Works, to enable the Engineer to issue the instruction so that progress of the Works is not delayed. The Engineer shall not, however, be bound to issue any instruction which, in his opinion, is unnecessary.

No act or omission by the Engineer or the Assistants to the Engineer in the performance of any of the Engineer's duties or the exercise of any of the Engineer's powers under the Contract shall, in any way, operate to relieve the Contractor of any of the duties, responsibilities, obligations or liabilities imposed upon the Contractor by any of the provisions of the Contract.

Engineer to Attempt Agreement

3.5

When the Engineer is required to determine value, cost or extension of time, he shall consult with the Contractor and the Employer in an endeavour to reach agreement. If agreement is not achieved, the Engineer shall determine the matter fairly, reasonably and in accordance with the Contract, with the approval of Employer.

4

THE CONTRACTOR

General Obligations

4.1

The Works as completed by the Contractor shall be wholly in accordance with the Contract and fit for the purposes for which they are intended, as defined in the Contract. The Works shall include any work which is necessary to satisfy the Employer's Requirements, the Contractor's Proposal and Schedules, or is implied by the Contract, or arises from any obligation of the Contractor, and all works not mentioned in the Contract but which may be inferred to be necessary for stability, or completion, or the safe, reliable and efficient operation of the Works.

The Contractor shall design, if in the scope of work, manufacture, execute, install, complete, test (including Integrated Testing in case of rolling stock and signalling contracts) and commission, the Works, including providing Construction and/or Manufacture Documents, within the Time for Completion and shall remedy any defects within the Contract Period. The Contractor shall provide all superintendence, labour, Plant, Materials, Contractor's Equipment, Temporary Works and

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all other things, whether of a temporary or permanent nature, required in and for such design, works and remedying of defects.

Before commencing design, if in the scope of the Contract, the Contractor shall satisfy himself regarding the Employer's Requirements (including design criteria and calculations, if any) and the items of reference mentioned in Sub-clause 4.8.

The Contractor shall give notice to the Engineer of any error, fault or other defect in the Employer's Requirements or such items of reference. After receipt of such notice, the Engineer shall determine whether Clause 12 shall be applied, and shall notify the Contractor accordingly.

The Contractor shall take full responsibility for the adequacy, stability and safety of all Site operations, of all methods of construction, manufacture, and of all the Works, irrespective of any approval or consent by the Engineer.

The Contractor shall be deemed to have satisfied himself before submitting his Tender as to the correctness and sufficiency of his Tender to cover all his risks, liabilities and obligations set out in or implied by the Contract and all matters and things necessary for the proper design, manufacture, execution, installation, completion, testing, Integrated Testing whichever is in the scope of the Contract, commissioning of the Works and remedying of the Defects.

The Contractor acknowledges responsibility for ascertaining and securing at his own cost:

- a. conditions bearing upon the proper transportation, disposal, handling and storage of materials (including but not limited to hazardous toxic substances and excavated materials);
- b. availability of electricity, water and gas;
- c. availability of skilled manpower;
- d. the character of equipment and facilities needed preliminary to and during the manufacture, installation, execution, testing, Integrated Testing, and commissioning of the Works and remedying of any defects;
- e. the protection of the environment and adjacent structures which will be necessary preliminary to and during the manufacture, installation, execution, testing, Integrated Testing, and commissioning of the Works and remedying of any defects;
- f. the location of and the authorization required for and the means of diversion of any services and facilities required for the purposes of the Works.

The Contractor shall whenever required by the Engineer, submit details of the arrangement and methods which the Contractor proposed to adopt for the execution of the Works. No alteration to these arrangements or methods shall be made without the approval of the Engineer.

**Performance
Security Amount**

4.2

4.2.1

Within 30 days from date of issue of the Letter of Acceptance, the successful Tenderer shall furnish Performance Security, for an amount of ten per cent of the Contract value in types and proportions of currencies in which the Contract Price is payable either in the form of a Bank Draft, FDR or in the form of a Bank Guarantee from a branch in India of a scheduled foreign bank or from a scheduled commercial bank in India

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acceptable to the Employer. The Extension of time for submission of Performance Security beyond 30 (Thirty) days up to 60 days from date of issue of LOA may be given by the Authority who is competent to sign the Contract Agreement. However, a Penal Interest of 15% per annum shall be charged for the entire period i.e. from the date of issue of LOA to the date of submission of Performance Security. In case the Contractor fails to submit the requisite Performance Security within 60 days from the date of issue of LOA, the Contract shall be annulled duly forfeiting Tender Security and other dues, if any payable against the Contract. The failed Contractor shall be debarred not only from participating in re-tender for that work but also in any other tender of NMRC for a period of one year from date of issue of LOA. The approved form provided in the "Instructions to Tenderers" shall be used for Bank Guarantee.

The successful Tenderer shall have the following options for submission of Performance Security;

(i) Performance Security for an amount of 10% of Contract value, if the same is in the form of Bank Guarantee/FDR, it shall be valid up to 6 months beyond the Defect Liability Period, or

(ii) Performance Security in the form of two Bank Guarantees/FDRs, each for an amount of 5% of Contract Value with one Bank Guarantee/FDR valid up to 6 months beyond the date of completion of work and second Bank Guarantee/FDR valid up to 6 months beyond the Defect Liability Period, or

(iii) One part of Performance Security for an amount of 5% of Contract value, if the same is in the form of Bank Guarantee/FDR, it shall be valid up to 6 months beyond the Defect Liability Period. For 2nd part of Performance Security for an amount of 5% of Contract value, amount shall be deducted at the rate of 5% of the gross amount of each running on-account bill. The Performance Security so deducted from running on-account bill, shall be released on completion of entire work in terms of Clause 4.2.3(i) of GCC. After achieving every 25% of financial progress w.r.t. Original Contract Value, Contractor can ask for release of such amount deducted towards Performance Security on submission of Bank Guarantee/FDR for an equal amount with validity up to 6 months beyond the date of completion of work. The Contractor shall always have the option during the currency of Contract to submit 2nd part of Performance Security for an amount of 5% of Contract value in the form of Bank Guarantee/FDR with validity up to 6 months beyond the date of completion of work. In such a case, further deduction of Performance Security amount from running on-account bill shall be stopped and the amount deducted towards Performance Security shall be released.

In case, if Contract is terminated due to Contractor's default in terms of GCC Clause 13.2, the full 10% Performance Security amount shall be forfeited. Shortfall amount, if any, shall be recovered by the Employer from monies due to the Contractor under the Contract including, without limitation, and the Employer shall have the power to recover any balance from monies due to the Contractor under any other Contract between the Employer and the Contractor.

In case the Contract value exceeds beyond 25% of the Original Contract Value, the Contractor shall have to submit additional Performance Security as follows:

If variation amount on plus side exceeds 25% of the Original Contract Value either due to Employer's variation or due to Contractor's variation,

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the Contractor shall submit additional performance security equal to an amount of 10% of the variation amount exceeding 25% of the Original Contract Value.

No additional Performance Security will be required to be submitted if the variation amount on plus side is within 25% of the Original Contract Value.

Forfeiture

4.2.2

Failure of the successful Tenderer to furnish the required Performance Security shall be a ground for the annulment of the award of Contract and forfeiture of the Tender Security.

The whole of the Performance Security amount shall be liable to be forfeited by the Employer at the discretion of the Employer, in the event of any breach of contract on the part of the Contractor. The forfeiture of the Performance Security amount by the Employer would be without prejudice to any amount(s) of money that the Employer may recover as Liquidated Damages or any other damages from the Contractor. The forfeiture of Performance Security amount by the Employer, would not operate as bar/set off/ adjustment from any amount of money which becomes recoverable or is recovered by the Employer. In case of the Performance Security Amount Bank Guarantee being invoked and forfeited by the Employer, the Contractor would immediately replenish the amount of Performance Security Bank Guarantee.

Release

4.2.3

i. On completion of the entire Work/part Work, one half of the proportionate Performance Security shall be refunded to the Contractor, on issue of Taking Over Certificate/part Taking Over Certificate by the Engineer, in accordance with Sub-clause 9.1 and 9.2 of these conditions. The above shall not relieve the Contractor from his obligations and liabilities, to make good the defects that may be detected during the Defect Liability Period

ii. The balance amount shall become due and shall be paid to the Contractor on signing of the Performance Certificate after the expiry of the final Defect Liability Period as per Clause 10.9 of these conditions.

Guarantees and Warranties

4.2.4

Within 30 days of the date of Letter of Acceptance of the Tender, the Contractor shall submit to the Employer:

i. An Undertaking in the approved format from a Parent Company, the identity of which shall have been submitted in writing to the Employer prior to acceptance of the Tender and against which the Employer shall have raised no objection.

ii. A written Guarantee in the approved format from a Parent Company, the identity of which shall have been submitted in writing to the Employer prior to acceptance of the Tender and against which the Employer shall have raised no objection.

iii. A warrantee in the approved format from the Contractor.

In the event that the Contractor shall comprise two or more members, corporations acting in partnership, joint venture, consortium or otherwise each such member or corporation shall submit a Parent Company Undertaking and Guarantee.

Notwithstanding any other provision of the Contract:

a. submission by the Contractor of the requisite Performance security, Parent Company Undertakings and written Guarantees shall be condition precedent to the Contractor's entitlement to any payment,

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under the Contract; and

b. failure by the Contractor to provide a Performance Security or Parent Company Undertakings or Parent Company Guarantees shall entitle the Employer either to suspend the Works or to terminate the Contract forthwith by notice in writing to that effect, notwithstanding that the Contractor may have been permitted to proceed with the Works, and the Contractor shall not be entitled to any compensation whatsoever as a consequence of such suspension or termination.

**Representation
on Works** 4.3

Unless the Contractor's Representative is named in the Contract, the Contractor shall, within 14 days of Notice to Proceed, submit to the Engineer for consent the name and particulars of the person the Contractor proposes to appoint. The Contractor shall not revoke the appointment of the Contractor's Representative without the prior consent of the Engineer. The Contractor's Representative so nominated shall have full authority to act on behalf of the Contractor. The Contractor's Representative shall give his whole time to directing the preparation of the Construction and/or Manufacture Documents and the execution of the Works. The Contractor's Representative shall receive (on behalf of the Contractor) all notices, instructions, consents, no objection certificate, approvals, certificates, determinations and other communications under the Contract. Whenever the Contractor's Representative is to be absent from the Site, a suitable replacement person shall be appointed, with prior consent of Engineer.

Failure on part of the Contractor to comply with these provisions shall constitute a breach of Contract leading to action under Sub-clause 13.2.

The Contractor's Representative may delegate any of his powers, functions and authorities to any competent person, and may at any time revoke any such delegation. Any such delegation or revocation shall be in writing and shall not take effect until the Engineer has given prior consent thereto. The Contractor's Representative and such persons shall be fluent in the language of day to day communication and the Contractor shall be bound by and fully liable for the acts or omissions of the Contractor's Representatives or any of his employees and/or delegates, agents or nominees.

**Facilities for and
co-ordination
with Others.** 4.4

The Contractor shall not impede and shall afford all necessary facilities, access and/or services to the Employer, Engineer, Designated Contractors, utility undertakings, other relevant authorities and other Contractors (whether employed by the Employer or not) who are carrying out on, or in the vicinity of, the Site, Works not included in the Contract but forming part of the Project:

a. The Contractor shall take all reasonable steps to ensure that the Works are co-ordinated and integrated with the design, manufacture, installation execution and testing of such other Works and shall in particular (but without limitation):

i. comply with any direction which the Engineer may give for the integration of the design of the Works with the design of any other part of the Project;

ii. consult, liaise and co-operate with those responsible for carrying out such other Works, including where necessary, in the preparation of the respective designs, the preparation of co-ordinated programmes, method statements, co-ordination drawings and specifications together

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with arrangements of service priorities and zoning;

- iii. participate in Integrated Testing and Commissioning of the system with Designated Contractors and demonstrate to the satisfaction of the Engineer that the Works have been designed and constructed in a manner compatible with the Works of Designated Contractors.
- b. The Contractor shall undertake design co-ordination with other Contractors who are carrying out Works forming part of the Project as described in the Employer's Requirements. At the end of each such co-ordination period, the Contractor and the other Contractor with whose Works the interface period refers shall jointly state in writing that their design co-ordination activities are complete and that their respective designs are integrated and can be finalised without interference with each other's designs or the designs with which their designs have already been integrated. A copy of this joint written statement shall be provided to the Engineer within 7 days of the end of the said design co-ordination period. Unless and until copies of all relevant and necessary design co-ordination statements have been submitted to the Engineer, the Engineer shall be entitled to suspend any review or further review of the Contractor's or the other Contractor's design submissions. Such suspension shall not be grounds for the Contractor to claim nor shall be entitled to receive an extension of time or additional payments.
- c. The Contractor shall provide within the Site, staging, storage and unloading areas for the use of Designated Contractors, if any, who are undertaking trackwork, fare collection system, supply, testing and commissioning of Rolling Stock, escalators, lifts, signalling and telecommunications and traction power installation Works, etc. Separate locations shall be provided for each such Contractor. The exact size and location of these staging, storage and unloading areas, and the commencement date shall be co-ordinated and agreed during the design interface period with each Designated Contractor.
- d. Any other contract which depends for its execution on the Contract or upon which the Contract is dependent for its own execution shall be identified by the Engineer as a "Designated Contract". The Contractor shall provide attendance on Designated Contractors in accordance with the Employer's Requirements and as instructed by the Engineer. The identity of the Contractor for a Designated Contract may not be known before the execution of the Contract but this shall not be a ground for the Contractor to object to the subsequent appointment of a Designated Contractor.
- e. The Contractor shall in accordance with the requirements of the Engineer co-ordinate his own Works with that of Designated Contractors through Co-ordinated Installation Programme (CIP) stated in the Employer's Requirements, or as the Engineer may require, and shall afford the Designated Contractors all reasonable opportunities for carrying out their Works.
- f. The Contractor shall afford all reasonable opportunities, for carrying out their Work, to other Contractors employed by the Employer and their workmen respectively and the workmen of the Employer who may be engaged on or near the Site of any Work, ancillary to the Works, but, not included in the Contract and shall not cause them

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inconvenience.

g. If the Contractor suffer delay by reasons of failure by any Designated Contractor to meet the specified installation interfacing and co-ordination, completion dates and if such delay has been caused otherwise than the fault of the Contractor, or, if compliance with Sub-clause (f) herein shall involve the Contractor in delay beyond that which could be reasonably foreseen by an experienced Contractor at the time of Tender, then the Engineer shall take such delay into account in determining any extension of time to which the Contractor is entitled under the Contract.

h. It shall be the responsibility of the Contractor to ensure that the full extent of the Works under the Contract and the Works to be carried out by Designated Contractors within the Works or, in, on, under, through and over the Site are co-ordinated and integrated in their design, manufacture, installation and construction. Such responsibility shall neither be mitigated nor in any other way affected by virtue of similar responsibilities being placed on other Contractors.

The Contractor shall be deemed to have made adequate allowance in the Contract Price and in the Works Programme in respect of these obligations.

If any act or omission of the Contractor whether directly or indirectly results in the delay in the execution of the Works of a Designated Contractor, the Contractor, in addition to his liability in respect of Liquidated Damages if they become due, shall pay to the Employer, or the Engineer may deduct from Interim Payment Certificates such amount as the Engineer shall have certified in respect of additional payments or costs to the Designated Contractor in respect of such delay.

Sub-contractors 4.5

4.5.1 The Contractor shall not sub-contract the whole of the Works.

4.5.2 Unless otherwise stated in the Special Conditions of Contract:

a. the Contractor shall not be required to obtain consent for purchases of Materials which are in accordance with the makes specified in the Contract or provisions of labour or for the sub-contracts for which the Sub-contractor is named in the Contract;

b. the prior consent of the Engineer shall be obtained for other proposed Sub- contractors;

c. not less than 28 days before the intended date of each Sub-contractor commencing work, the Contractor shall notify the Engineer of such intention; and the Contractor shall give fair and reasonable opportunity for Contractors in India to be appointed as Sub contractors.

4.5.3 The Contractor shall be responsible for observance by all Sub-contractors of all the provisions of the Contract. The Contractor shall be responsible for the acts or defaults of any Sub-contractor, his representatives or employees, as fully as if they were the acts or defaults of the Contractor, his representatives or employees and nothing contained in Sub-clause (a) of clause 4.5 shall constitute a waiver of the Contractor's obligations under this Contract. The Contractor shall provide to the Engineer of all the Sub-contracts including terms, conditions and pricing. The Contractor shall endeavour to resolve all matters and payments amicably and speedily with the Sub-contractors.

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- 4.5.4** The Contractor shall ensure that their Sub-contractors, material/equipment Suppliers, Consultants and other Agencies deployed by them in connection with execution of the Contract do not make any claim or raise any dispute before NMRC. For this, necessary provision is to be made in the agreement between Contractor and their Sub-contractors/Consultants/other Agencies. Similarly the agreement should also incorporate the provision of dispute resolution. An undertaking in the following format shall be submitted by Contractor in respect of each such agency:-

"Name of Work.....

In connection with above Work, M/s....., Contractor has/is engaging M/s....., as Sub-contractor(or Consultant or material/equipment Supplier or Service provider). For this, the terms and conditions of agreement include necessary provisions for resolution of dispute if any arising between Contractor and Sub-contractor.

It is confirmed by the Sub-contractor that any claim/dispute arising out of the above Work shall be resolved in terms of agreement and shall not be raised before NMRC and also shall not make any claim against NMRC before any forum/court.

Signature of Contractor

Assignment of Contractor's and Sub-contractor's Obligations

- 4.6** The Contractor shall not assign a right or benefit under the Contract without first obtaining Employer's prior written consent, otherwise than by :

charge in favour of the Contractor's bankers of any money due or to become due under the Contract.

If a Sub-contractor's obligations extend beyond the expiry date of Defects Liability Period then the Contractor shall assign the benefits of such obligations to the Employer.

In the event that a Sub-contractor of any tier provides to the Contractor or any other Sub-contractor a warranty in respect of Plant, Materials or Services supplied in connection with the Works, or undertakes a continuing obligation of any nature whatsoever in relation to such Plant, Materials or Services (including without limitation an obligation to maintain stocks of spare parts) extending for a period exceeding that of the Defects Liability Period or where there is more than one Defects Liability Period exceeding that of the latest Defects Liability Period, and if the Engineer so directs in writing within 21 days of the expiry of the Defects Liability Period or the latest Defects Liability Period (as the case may be), the Contractor shall immediately assign or obtain the assignment of the benefit of such warranty or obligation to the Employer or at the direction of the Employer, to any third Party referred to in Sub-Clause 2.4.

Compensation for Breach

- 4.7** Any breach of Sub-clauses 4.5 to 4.6 shall entitle the Employer to rescind the Contract under Clause 13.2 of these conditions and also render the Contractor liable for loss or damage arising due to such cancellation.

Setting Out

4.8

Accurate Setting Out

4.8.1

- The Contractor shall be responsible for
- a. the accurate setting out of the Works in relation to the original

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points, lines and levels of reference given by the Engineer in writing

b. the correctness of position, levels, dimensions and alignments of all parts of the Works

c. the provisions of all necessary instruments, equipment, apparatus and labour in connection with the foregoing responsibilities

d. Carefully protecting and preserving all bench marks, sight-rails, pegs and other things used in setting out the Works

The checking of any setting-out or of any line or level by the Engineer shall not in any way relieve the Contractor of his responsibility for the accuracy or correctness thereof and the Contractor shall carefully protect and preserve all bench-marks, sight-rails, pegs and other things used in setting out the Works.

Errors in Setting out 4.8.2

If at any time during the execution of the Work, an error appears in the positions, levels, dimensions or alignment of any part of the Works, the Contractor on being required to do so by the Engineer shall, at Contractor's cost, rectify such error to the satisfaction of the Engineer.

Site Data 4.9

i. The Employer shall have made available to the Contractor with the Tender documents such relevant data in Employer's possession on hydrological and sub-surface conditions. The accuracy or reliability of the data/studies/reports and of any other information supplied at any time by the Employer or Engineer is not warranted including with respect to the viability of his design and execution of Works and the Contractor shall be responsible for interpreting validity, and interpretation of all such data. The Contractor shall conduct further investigations considered necessary by him at his own cost and any error, discrepancies if found in Employer's data at any stage will not constitute ground for any claim for extra time, damages and costs.

ii. The Contractor shall be deemed to have obtained all necessary information as to risks, contingencies and other circumstances which may influence or affect the Tender or Works.

iii. The Contractor shall also be deemed to have inspected and examined the Site, its surroundings, the above data and other available information including with respect to the viability of his design and execution of Works and to have satisfied himself before submitting the Tender, as to all the relevant matters including without limitation:

a. the form and nature of the Site, including the sub-surface conditions; the hydrological and climatic conditions;

b. the extent and nature of the Work, Plant, and Materials necessary for the execution and completion of the Works and the remedying of any defects;

c. the applicable laws, procedures and labour practices

d. The Contractor's requirement for access, accommodation, facilities, personnel, power, transport and other services.

e. the risk of injury or damage to property adjacent to the Site and to the occupiers of such property or any other risk.

Sufficiency of accepted Contract Amount 4.10

The Contractor shall be deemed to have satisfied himself as to the correctness and sufficiency of the Contract Price. Unless otherwise stated in the Contract, the Contract Price shall cover all his obligations under the Contract and all things necessary for the proper design,

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execution and completion of the Works, testing and commissioning (including Integrated Testing and Commissioning) and remedying of any defects.

Access Route 4.11

The Contractor shall be deemed to have satisfied himself as to the suitability and availability of the access routes he chooses to use. The Contractor shall (as between the Parties) be responsible for the maintenance of access routes. The Contractor shall provide at his cost signs or directions, which he may consider necessary or as instructed by Engineer for the guidance of his staff, labour and others. The Contractor shall obtain any permission concessions and related easement right that may be required from the relevant authorities for the use of such routes, signs and directions.

The Employer will not be responsible for any claims which may arise from the use or otherwise of any access route. The Employer does not guarantee the suitability or availability of any particular access route, and will not entertain any claim for any non-suitability or non-availability for continuous use during construction of any such route.

Rights of Way and Facilities 4.12

The Employer will acquire and provide land for Permanent Works and right of way (within NMRC's land) for access thereto over routes established by the Contractor. The Contractor shall bear all cost and charges for special or temporary rights of way which he may require including those for access to the Site. The Contractor shall also obtain, at his risk and cost, any additional facility outside the Site which he may require for the purpose of the Works. The Employer reserves the right to make use of these service roads/rights of way for itself or for other Contractors working in the area, as and when necessary without any payment to the Contractor.

Programmes 4.13

The Contractor shall submit a detailed Programme to the Engineer after receipt of the Letter of Acceptance not later than 28 days from the date of receipt of Letter of Acceptance. The Contractor shall also submit a revised Programme whenever the Engineer finds that the previous Programme is inconsistent with actual progress or with the Contractor's obligations.

Each Programme shall include the following:

- a. the order in which the Contractor proposes to carry out the Works (including each stage of design, procurement, manufacture, delivery to Site, construction, erection, testing and commissioning),
- b. all major events and activities in the production of Construction or Manufacture Documents; and
- c. the sequence of all tests specified in the Contract including Integrated Testing and Commissioning.

Unless otherwise stated in the Contract, the Programmes shall be developed using precedence networking techniques, showing early start, late start, early finish and late finish dates.

No significant alteration to the Programmes, or to such arrangements and methods, shall be made without obtaining consent of the Engineer. If the progress of the Works does not conform to the Programmes, the Engineer may instruct the Contractor to revise the Programmes, showing the modifications necessary to achieve completion within the Time for Completion.

Consent by the Engineer to Programmes shall not relieve the Contractor

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of any of his responsibilities or obligations under the Contract. If the Programmes indicate that a Key Date has not, or will not be met, it shall not, by itself entitle the Contractor to an extension of time in relation to such Key Date or would entitle the Contractor for any amount of money/damages/compensation.

Progress Reports 4.14

The Contractor shall submit to the Engineer by the end of each calendar month his Monthly Progress Report which shall, amongst other things, highlight actual or potential departures from the Works Programmes and/or the Design Submission Programme and state the measures which the Contractor proposes to take in order to make good or reduce any delay. The submission of Monthly Progress Report by the Contractor would not absolve the Contractor of its obligation/right to notify any events/information to the Employer. The submission of Monthly Progress Report by Contractor would not amount to admission of its content by the Employer.

If requested by the Engineer, the Contractor shall submit to the Engineer, at weekly intervals, a written report as to the progress of off-Site manufacture of Plant, Rolling Stock and Materials.

The Contractor shall also submit to the Engineer such other reports as may reasonably be required by him or any relevant authority or public body.

The progress reports shall conform to the Employer's Requirements.

Contractor's Equipment

4.15

4.15.1

All Contractor's Equipment and Temporary Works provided by the Contractor shall, when brought on to the site, be deemed to be exclusively intended for execution of the Works and not be removed without the consent in writing of the Engineer. Such consent shall not be unreasonably withheld or delayed.

4.15.2

Upon completion of the Works, the Contractor shall remove from the Site all the said Constructional Plant and his unused materials

4.15.3

The Employer shall not, at any time, be liable for the loss or damage to any of the Constructional Plant, Temporary Works or materials save as mentioned in Clauses 14.1.

4.15.4

In respect of any Constructional Plant which the Contractor shall have imported for the purpose of the Works, the Employer may assist the Contractor, where required, in procuring any necessary Government consent for re-export of the same after the completion of the Works.

4.15.5

The Employer may assist (but is not obligated to) the Contractor, where required, in obtaining clearance through the Customs of Constructional Plant, materials and other things required for the Works.

Safety of Works

4.16

The Contractor shall throughout the execution of the Works including the carrying out of any testing, commissioning (including Integrated Testing and Commissioning), or remedying of any defect:

a. take full responsibility for the adequacy, stability, safety and security of the Works, Plant, Rolling Stock, Contractor's Equipment, Temporary Works, operations on Site and methods of manufacture, installation, construction and transportation;

b. have full regard for the safety of all persons on or in the vicinity of the Site (including without limitation persons to whom access to the

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Site has been allowed by the Contractor), comply with all relevant safety regulations, including provision of safety gear, and in so far as the Contractor is in occupation or otherwise is using areas of the Site, keep the Site and the Works (so far as the same are not completed and occupied by the Employer) in an orderly state appropriate to the avoidance of injury to all persons and shall keep the Employer indemnified against all injuries to such persons.

c. provide and maintain all lights, guards, fences and warning signs and watchmen when and where necessary or required by the Engineer or by laws or by any relevant authority for the protection of the Works and for the safety and convenience of the public and all persons on or in the vicinity of the Site; and

d. where any work would otherwise be carried out in darkness, ensure that all parts of the Site where Work is being carried out are so lighted as to ensure the safety of all persons on or in the vicinity of the Site and of such Work.

Contractor is required to take note of all the necessary provisions in Employer's Conditions of Contract on Safety & Health and Environment and the Contractor's price shall be inclusive of all the necessary costs to meet the prescribed safety standards. In the case, the Contractor fails in the above, the Employer may provide the necessary arrangements and recover the costs from the Contractor.

Protection of the Environment 4.17

The Contractor shall take all reasonable steps to protect the environment (both on and off the Site) and to avoid injury, damage and nuisance to people and property resulting from pollution, noise and other results of his operations. The Contractor shall ensure that air emissions, surface discharges and effluent from the Site during the Contract Period shall not exceed the values indicated in the Employer's Requirements, and shall not exceed the values prescribed by law. The Contractor shall conform to the Employer's Requirements and shall indemnify the Employer against any liability or damages or claims arising out of his operations. The Contractor shall be responsible and liable for any stoppage, closure or suspension of the works due to any contravention of statutory requirements relating to the protection of the environment and shall indemnify and keep indemnified the Employer in this regard.

The Contractor's Site Environmental Plan shall be developed from his Employer's Conditions of Contract on Safety & Health and Environment, as per the Employer's Requirements and Special Conditions of Contract. Nothing extra shall be payable to the Contractor on this account and his Tender price shall be inclusive of expenditure required to be incurred for working as per Conditions of Contract on Safety & Health and Environment.

Electricity Water and Gas 4.18

The Contractor shall be responsible for making his own arrangements at his own cost to obtain supply of water, electricity or gas for the Works. The Employer where feasible may at its discretion assist the Contractor in this respect.

Tools, Plants and Equipment Supplied by the Employer 4.19

Except for any specific item mentioned in the Special Conditions of Contract or in Employer's Requirements, the Contractor shall provide all Tools, Plants and Equipment for the Works. In respect of such exceptional Tools, Plants or Equipment committed to be provided by the Employer under terms and conditions specified in the Special Conditions of Contract, the Contractor shall take all reasonable care and shall be

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responsible for all damages or loss caused by him, his representatives, sub- contractors or his workmen or others while they are in his charge.

On completion of the Works, the Contractor shall hand over the unused balance of the Tools, Plants and Equipments to the Employer in good order and repair, fair wear and tear expected, and shall be responsible for any failure to account for the same or any damage done thereto.

The decision of the Engineer as to the amount recoverable from the Contractor on this account shall be final and binding.

**Employer's
Materials &
Excavated
Materials**

4.20

(i) Except for items mentioned in the Special Conditions of Contract, the Contractor shall provide all materials for the Works. Material if any, to be provided by Employer will be done only in a phased manner as per pre-approved program, against a Bank Guarantee for the value of the Material and at terms and conditions for issue, upkeep, usage, return and recovery of such Materials as specified in Special Conditions of Contract.

(ii) Unless otherwise specified, the Contractor shall not sell or remove, except for the purpose of this Contract, sand, stone, clay, ballast, earth, rock or other materials obtained from the Work Site and these shall be the property of the Employer and will be disposed off only in the manner instructed by him.

**Sheds, Stores,
Yards**

4.21

It shall be the responsibility of the Contractor to provide at his own expense the required sheds, store houses, and yards for both Permanent and Temporary Works and provide free access to the Engineer and the Engineer's Representative who will have right of inspection including that of instructing the Contractor to remove a particular material from the stores and not to use the same on the Works.

**Temporary
Works**

4.22

All temporary Works necessary for the proper execution of the Works shall be provided and maintained by the Contractor at his own cost and subject to the consent of the Engineer shall be removed by Contractor at his own expense when they are no longer required and in such manner as the Engineer shall direct. In case the Contractor fails to remove the temporary Works on completion, the Engineer is authorized to get the same removed and recover the cost thereof from the Contractor.

**Unforeseeable
Physical
Conditions**

4.23

In this Clause "physical conditions" means natural physical conditions, which the Contractor encounters at Site while executing the Works excluding climatic conditions.

If, during the execution of the Works, the Contractor shall encounter physical conditions, which, in his opinion, could not have been reasonably foreseen by an experienced Contractor, the Contractor shall forthwith give written notice thereof to the Engineer and if, in the opinion of the Engineer, such conditions could not have been reasonably foreseen by an experienced Contractor, then the Engineer may certify and the Employer shall may pay reasonable additional cost to which the Contractor shall have been put by reason of such conditions in the following cases:

a. for complying with any instruction which the Engineer may issue to the Contractor in connection therewith, and

b. for any proper and reasonable measures approved by the Engineer which the Contractor may take in the absence of specific instructions from the Engineer, as a result of such conditions or

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obstructions being encountered.

The decision of the Engineer as to the additional cost shall be final and binding.

Access for Engineer **4.24** The Contractor shall allow the Engineer or the Engineer's Representative or any other person authorised by him, at all times access to the Site, and to any place where Work in connection with the Contract is being carried out or is intended to be carried out and to any place where materials or plant are being manufactured, fabricated and/or assembled for the Works. The Contractor shall ensure that sub-contracts if any shall contain provisions entitling the Engineer or any person authorised by him to have such access.

Access Road and Way Leaves **4.25** Providing access roads/ way leaves to the site will be Contractor's responsibility.

Contractor to keep Site Clear **4.26** During the execution of the Works, the Contractor shall keep the Site free from all unnecessary obstruction, and shall store or dispose of any Contractor's Equipment or surplus materials. The Contractor shall clear away and remove from the Site, any wreckage, rubbish or Temporary Works which are no longer required.

On completion of the Works, the Contractor shall clear away and remove from site all Contractor's Plant, surplus material and Temporary Works. He should leave the whole of the site and Works in a clean, tidy and workman like condition to the satisfaction of the Engineer.

On completion of Work, the Contractor shall also clear away the labour camps, hutments and other related installations and restore the land to its original condition to the satisfaction of the Engineer within 45 days of the physical completion of Work. The cost on account of delay in return of land and reinstatement to its original condition within the stipulated time as determined by Engineer, will be recovered from the Contractor's dues.

No final payment in settlement of the accounts for Works shall be made or held to be due to the Contractor, till, in addition to any other condition necessary for such final payment, site clearance and clearances of labour camps etc. shall have been effected by him. Such clearance may be made by the Engineer through any other agency at the expense of the Contractor, in the event of the Contractor's failure to comply with this provision within 7 days after receiving notice to that effect from the Engineer. All expenses on such removal/clearance shall be debitable to the Contractor as loans due from the Contractor to the Employer, and the Employer shall be competent to recover the same from Contractor's on-account or final bills, or from Performance Security amount or from any other amount payable to the Contractor in any other Contract.

Security of the Site **4.27** The Contractor shall be wholly responsible for security of Site and Works.

~~Unless otherwise stated in Special Conditions of Contract~~

a. the Contractor shall be responsible for keeping unauthorized persons off the Site; and

b. Authorized persons shall be limited to the Employees of the Contractor, Sub-contractor or persons authorized by the Engineer.

Contractor's Operations on **4.28** The Contractor shall confine his operations to the Site, and to any additional area which may be provided to the Contractor and agreed by

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Site		the Engineer as working areas. The Contractor shall take all necessary precautions to keep his personnel and equipment within the Site and such additional areas, and to keep and prohibit them from encroaching on adjacent land.
Discoveries	4.29	All fossils, coins, articles of value or antiquity, structures and other remains or things of geological or archaeological interest, in addition to oil and other minerals discovered on the Site shall be the absolute property of the Government of India. The Contractor shall take all the necessary precautions to prevent its workmen or its Sub-contractors' workmen or any other person from removing or damaging any such article or thing and shall immediately upon discovery thereof, acquaint the Engineer of such discovery and carry out the instructions of the Engineer.
Publicity	4.30	The Contractor shall not publish or otherwise circulate alone or in conjunction with any other person, any articles, photographs or other materials relating to the Contract, the Site, the Works, the Project or any part thereof, nor impart to the Press, or any radio or television network any information relating thereto, nor allow any representative of the media access to the Site, Contractor's Works Areas, or off-Site place of manufacture, or storage except with the permission, in writing, of the Employer. The Contractor shall ensure that his Sub-contractors of any tier shall be bound by similar obligation and shall, if so required by the Employer, enforce the same at his own expense. The provisions of this Sub-clause shall not exempt the Contractor from complying with any statutory provision in regard to the taking and publication of photographs.
Disclosure of Relationship	4.31	If the Contractor or any partner of the Contractor or Director of the Contractor's company is closely related to any of the Officers of the Employer or the Engineer, or alternatively, if any close relative of an officer of the Employer or the Engineer has financial interest/stake in the Contractor's firm, the same shall be disclosed by the Contractor at the time of filing his tender. Any failure to disclose the interest involved, shall entitle the Employer to rescind the Contract, without payment of any compensation to the Contractor. The Contractor shall note that he is prohibited from developing such interest during the Contract period also.
Use of Explosives	4.32	Explosives if required on the Work shall be used by Contractor only with prior Approval of the Engineer and in the manner and to the extent permitted by him. The Contractor shall be responsible for safe upkeep of such explosives in a special magazine as per the law on explosives as well as for taking all the precautions in the usage of the explosives with proper license and at Contractor's cost, sole risk and responsibility. The Contractor shall hold the Employer harmless and indemnify for the above.
Corrupt /or Fraudulent/ Collusive/ Coercive Practices	4.33	
Definition	4.33.1	The Employer requires that the Bidders/Contractors, their designated Contractors and/or their Agents observe the highest standards of ethics during Tendering and execution of this Contract. In pursuance with this Policy, the Employer:

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a. defines, for the purpose of these provisions, the terms set forth below as follows:

(i) "corrupt practice" means the offering, giving, receiving or soliciting of anything of value to any officer/employee of NMRC or Engineer or to any other person to influence in the procurement process or in Contract execution and/or after the execution of the Contract.

(ii) "fraudulent practice" means a concealment or misrepresentation of facts in order to influence a procurement process or during the execution of a Contract and/or after the execution of the Contract, which may or may not be to the detriment of the Employer and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Employer of the benefits of free and open competition and further includes concealment or misrepresentation of facts leading to breach of any of the Contract condition during execution of the Contract which may or may not be to the detriment of the Employer.

(iii) "collusive practice" means amongst Bidders (prior to or after bid submission) a scheme or arrangement designed to establish bid prices at artificial non-competitive levels and to deprive NMRC of the benefits of free and open competition.

(iv) "coercive practice" means impairing or harming or threatening to impair or harm directly or indirectly, any Agency or NMRC or its employees/ consultants or its property, to influence improperly the actions of an Agency or NMRC or its employees/ consultants, obstruction of any investigation or auditing of a Procurement/ Contract process.

(v) Breach of any of the contract condition during execution.

(vi) "Suspension": Business dealings with an Agency may be suspended in exceptional cases if there is gross and blatant violation of the provisions of the Suspension/ Banning Policy by the Agency and it is considered not desirable to continue the business with the Agency pending detailed enquiry for Banning of Business Dealing. Suspension shall be for a period upto six months from the date of approval of decision of Suspension.

(vii) "Banning": Shall mean officially debarring or forbidding an Agency from participating as Vendor/ Supplier/Contractor etc. with NMRC, for its requirement related to all Tenders / Contracts. Business dealings with an Agency may be banned if it violates/ infringes the provisions of the Suspension/ Banning policy of the NMRC. Banning shall be for a period ranging from one year from the date of issue of Banning Order or Suspension Order (If suspension imposed on the Agency) and upto five years.

(a) If it is found that the Bidder/Contractor has indulged in corrupt/fraudulent/ collusive/coercive practices, actions such as rejection of bid/forfeiture of Tender Security or rescission/termination of Contract/forfeiture of Performance Security etc. shall be taken as per Suspension/Banning Policy of NMRC.

(b) The successful Bidders/Contractors shall apprise the Employer through Chief Vigilance Officer, NMRC of any fraud/suspected fraud/corrupt practices as soon as it comes to their notice.

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Compensation to Contractor on rescission of Contract 4.33.2 In the event of rescission of Contract under Sub-clause 4.33.1, the Contractor shall not be entitled to any compensation whatsoever, except for the Work done up to the date of rescission, payable as per the provisions of the Contract.

5 DESIGN

The clauses under the head 'Design' are applicable only in 'Design & Build' Contracts and in case of 'Part Design & Build' Contracts, these are applicable only to part of the Contract in which the design is the responsibility of the Contractor.

General Obligations 5.1 The Contractor shall design and provide all necessary specifications for the Works in accordance with the site plans and Employer's requirements. Any design detail, plan, drawing, specifications, notes, annotations, and information required shall be provided in such sufficient format, details, extent, size and scale and within such time as may be required to ensure effective execution of Works and/or as otherwise required by the Engineer.

The Contractor holds himself, and his Designers as having the experience and capability necessary for the design. The Contractor undertakes that the Designers shall be available to attend discussions with the Engineer at all reasonable times during the Contract Period.

The Designer shall be the same entity as proposed by the Contractor at the time of pre-qualification, unless otherwise approved by the Employer. The Contractor shall furnish Designer's Warranty in the format approved by the Employer.

Contractor's warranty of design 5.2 a. The Contractor shall be fully responsible, for the suitability, adequacy, integrity, durability and practicality of the Contractor's proposal and design.

b. The Contractor warrants that the Contractor's Proposals and design meet the Employer's Requirements and is fit for the purpose thereof. Where there is any inadequacy, insufficiency, impracticality or unsuitability in or of the Employer's Requirements or any part thereof, the Contractor's Proposal shall take into account, address or rectify such inadequacy, insufficiency, impracticality or unsuitability at Contractor's OWN COST.

c. The Contractor warrants that the Works have been or will be designed, manufactured, installed and otherwise constructed and to the highest standards available using proven up-to-date good practice

d. The Contractor warrants that the Works will, when completed, comply with enactments and regulations relevant to the Works

e. The Contractor warrants that the design of the Works and the manufacture of Plant have taken or will have taken full account of the effects of the intended manufacturing and installation methods, Temporary Works and Contractor's Equipment

f. The Contractor shall also provide a Guarantee from the Designer for the design for suitability, adequacy, practicality of design for Employer's Requirements

g. The Contractor shall indemnify the Employer against any damage, expense, liability, loss or claim, which the Employer might

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incur, sustain or be subject to arising from any breach of the Contractor's design responsibility and/or warranty set out in this Clause.

h. The Contractor further specifies and is deemed to have checked and accepted full responsibility for the Contractor's Proposal and warrants absolutely that the same meets the Employer's Requirements:

(i) Notwithstanding that such design may be or have been prepared, developed or issued by the Employer, any of Contractor's Consultants, his Sub-contractors and/or his qualified personnel/persons or cause to be prepared, developed or issued by others.

(ii) Notwithstanding any warranties, guaranties and/or indemnities that may be or may have been submitted by any other person.

(iii) Notwithstanding that the same have been accepted by the Engineer

The Contractor shall be fully responsible for the Plants, Materials, goods, workmanship, preparing, developing and coordinating all design Works to enable that part of the Works to be constructed and/or to be fully operational in accordance with the Contract's requirements.

Apart from the Contractor, the above warranty shall also be applicable for his Designer. This warranty shall be a part of his Sub-contract with the Designer and should be made available at the time of signing of the Agreement.

No claim for additional payment or extension of time shall be entertained and/or the Contractor shall not be relieved from any obligation/liability under the Contract, for any delay, suspension, impediment to or adverse effect upon the progress of the Works due to any mistake, inaccuracy, discrepancy or omission in or between the Contractor's, the Definitive Design and the final design, or any failure by the Contractor to prepare any Design Data or submit the same to the Engineer in due time and the Contractor shall promptly make good any such defect at his own cost.

**Construction
and/or
Manufacture
Documents**

5.3

The Manufacture Documents shall comprise the technical documents specified in the Employer's Requirements, documents required to satisfy all regulatory approvals, documents described in Sub Clause 5.6 (As Built Document), and Sub Clause 5.7 (Operations and Maintenance Manuals). The Contractor shall prepare all Manufacture Documents in sufficient detail and shall also prepare any other document necessary to instruct the Contractor's personnel. The Engineer shall have the right to inspect the preparation of all these documents wherever they are being prepared.

Each of the Construction and/or Manufacture Documents shall, when considered ready for use, be submitted to the Engineer for pre-construction or pre-manufacture review. Unless otherwise stated in Employer's Requirements, each review by the Engineer shall not exceed 21 days, calculated from the date on which the Engineer receives the Manufacture Document.

The Engineer may during the review period, give notice to the Contractor that a Manufacture Document fails (to the extent stated) to comply with the Employer's Requirements, it shall be rectified, resubmitted and reviewed (and if specified, approved) in accordance with this Sub-clause, at the Contractor's cost.

For each part of the Works, and except to the extent that the prior

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consent of the Engineer shall have been obtained:

a. In the case of a Construction and/or Manufacture Document which has (as specified) been submitted for the Engineer's approval

(i) The Engineer shall give notice to the Contractor that the Construction and/or Manufacture Document is provided with no objection, with or without comments, or that it fails (to the extent stated) to comply with the Contract

(ii) Execution of such part of the Works shall not commence until the Engineer has provided with no objection for the Construction and/or Manufacture Document; and

(iii) The Engineer shall be deemed to have provided with no objection for the Construction and/or Manufacture Document upon the expiry of the review periods for all the Construction and/or Manufacture Documents which are relevant to the design and execution of such parts, unless the Engineer has previously notified otherwise in accordance with sub-paragraph (i)

b. construction and/or manufacture of such part of the Works shall not commence prior to the expiry of the review of the Construction and/or Manufacture Documents which are relevant to its design and execution;

c. construction and/or manufacture shall be in accordance with such reviewed (and if specified, approved) Construction and/or Manufacture Documents; and (d) if the Contractor wishes to modify any design or document which has previously been submitted for such pre-construction and/or pre-manufacture review, the Contractor shall immediately notify the Engineer, and based on Engineer's approval shall subsequently submit revised documents to the Engineer in accordance with the above procedure.

If the Engineer instructs that further Construction and/or Manufacture Documents are necessary for carrying out the Works, the Contractor shall promptly and at Contractor's cost prepare such documents,

Errors, omissions, ambiguities, inconsistencies, inadequacies and other defects if found at any stage in construction or any operations manufacture documents, then shall be rectified by the Contractor at his own cost and any approval or consent or review (under this sub-clause or otherwise) by the Employer/Engineer of the Manufacture and Construction Documents under this Sub-clause shall not relieve the Contractor from any obligations or responsibility under the Contract.

Technical
Standards and
Regulations

5.4

The design, the Construction and/or Manufacture Documents, the execution and the completed Works (including remedying of defects therein) shall comply with the specifications, technical standards, building construction, safety and environmental regulations and other standards specified in the Employer's Requirements applicable to the Works or defined by the applicable laws and regulations

Samples

5.5

The Contractor shall submit at his own cost the following samples and relevant information to the Engineer for pre-construction and/or pre-manufacture review in accordance with the procedure for Construction and/or Manufacture Documents described in Sub-clause 5.3:



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- a. manufacturer's standard samples of Materials,
- b. samples (if any) specified in the Employer's Requirements. Each sample shall be labelled as to origin and intended use in the Works

**As-Built
Drawings and
Documents** 5.6

This clause is applicable for 'Build' part of Contract also. The Contractor shall prepare, and keep up-to-date, a complete set of "as-built" records of the execution of the Works, showing the exact "as-built" locations, sizes and details of the Works as executed, with cross references to relevant specifications and data sheets. These records shall be kept on the Site and shall be used exclusively for the purposes of this Sub-clause. Six copies shall be submitted to the Engineer prior to the commencement of the Tests on Completion.

In addition, the Contractor shall prepare and submit to the Engineer "as-built drawings" of the Works, showing all Works as executed. The drawings shall be prepared as the Works proceed, and shall be submitted to the Engineer for his inspection. The Contractor shall obtain the consent of the Engineer as to their size, the referencing system, and other pertinent details.

Prior to the issue of any Taking Over Certificate, the Contractor shall submit to the Engineer one soft copy and four printed copies of the relevant "as-built drawings", and any further Construction and/or Manufacture Documents specified in the Employer's Requirements. The Works shall not be considered to be completed for the purposes of Taking Over under Sub-clause 9.1 until such documents have been submitted to the Engineer.

**Operation and
Maintenance
Manuals** 5.7

Prior to commencement of the Tests on Completion, the Contractor shall prepare, and submit to the Engineer, Operation and Maintenance Manuals in accordance with the Employer's Requirements and in sufficient detail for the Employer to operate, maintain, dismantle, reassemble, adjust and repair the Works. The Works shall not be considered to be completed for the purposes of Taking Over under Sub-clause 9.1 until such Operation and Maintenance Manuals have been submitted to the Engineer and received his consent.

**Intellectual
Property Rights
and Royalties** 5.8

The Contractor shall indemnify the Employer and the Engineer from and against all claims and proceedings on account of infringement (or alleged infringement) of any patent rights, registered designs, copyright, design, trademark, trade name, know-how or other Intellectual Property Rights in respect of the Works, Contractor's Equipment, machines, work method, or Plant, or Materials, or anything whatsoever required for the Works and from and against all claims, demands, proceedings, damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto. The Contractor shall pay all traffic surcharges and other royalties, licenses fees, rent and other payments or compensation, if any, for getting stone, sand, gravel, clay or other materials, machine, process, systems, work methods, or Contractor's Equipment required for the Works. The Contractor shall, in the event of infringement of Intellectual Property Rights, rectify, modify or replace at his own cost the Works, Plant or materials or anything whatsoever required for the Works so that infringement no more exist or in the alternative shall procure necessary rights/license so that there is no infringement of Intellectual Property Rights.

The Contractor shall be promptly notified of any claim under this Sub-Clause made against the Employer. The Contractor shall, at his cost, conduct negotiations for the settlement of such claim, and any litigation

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or arbitration that may arise from it. The Employer or the Engineer shall not make any admission which might be prejudicial to the Contractor, unless the Contractor has failed to take over the conduct of the negotiations, litigation or arbitration within a reasonable time after having been so requested. In the event of Contractor failing to act at Engineer's notice, the Employer shall be at full liberty to deduct any such amount of pending claim from any amount due to the Contractor under this Contract or any other Contract.

Insofar as the patent, copyright or other intellectual property rights in any Plant, Design Data, plans, calculations, drawings, documents, Materials, know-how and information relating to the Works shall be vested in the Contractor, the Contractor shall grant to the Employer, his successors and assignees a royalty-free, non-exclusive and irrevocable licenses (carrying the right to grant sub-licenses) to use and reproduce any of the works, designs or inventions incorporated and referred to in such Plant, documents or Materials and any such know-how and information for all purposes relating to the Works (including without limitation the design, manufacture, installation, reconstruction, Testing, commissioning, completion, reinstatement, extension, repair and operation of the Works).

If any patent, registered design or software is developed by the Contractor specifically for the Works, the title thereto shall vest in the Employer and the Contractor shall grant to the Employer a non-exclusive irrevocable and royalty-free licenses (carrying the right to grant sub-license) to use, repair, copy, modify, enhance, adapt and translate in any form such Software for his own use.

If the Contractor uses proprietary software for the purpose of storing or utilizing records, the Contractor shall obtain at his own expense the grant of a licenses or sub-licenses to use such software in favors of the Employer and shall pay such licenses fee or other payment as the grantor of such licenses may require provided that the use of such software under the licenses may be restricted to use relating to the design, construction, reconstruction, manufacture, completion, reinstatement, extension, repair and operation of the Works or any part thereof.

The Contractor's permission referred to above shall be given, inter alia, to enable the Employer to disclose (under conditions of confidentiality satisfactory to the Contractor) programmes and documentation for a third Party to undertake the performance of services for the Employer in respect of such programmes and documentation.

If any software is developed under the Contract or used by the Contractor for the purposes of storing or utilizing records over which the Contractor or a third Party holds title or other rights, the Contractor shall permit or obtain for the Employer (as the case may require) the right to use and apply that Software free of additional charge (together with any modifications, improvements and developments thereof) for the purpose of the design, manufacture, installation, reconstruction, testing, commissioning, completion, reinstatement, extension, repair, modification or operation of the Works, or any part thereof, or for the purpose of any Dispute.

The Employer reserves the right to use other Software on or in connection with the Works.

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6 STAFF AND LABOUR

Engagement of Staff and Labour

6.1 The Contractor shall make his own arrangements for the engagement of staff and labour at his own cost.

Rates of Wages and Conditions of Labour

6.2 Full compliance of statutory requirements apart, the Contractor shall pay rates of wages and observe conditions of labour not less favourable than those fixed by appropriate Government for the industry.

The Contractor shall make himself aware of all labour regulations and their impact on the cost and build up the same in the Contract Price. During the Contract Period, no extra amount in this regard shall be payable to the Contractor, for whatsoever reason including any revision of rates payable to the labour due to revision of rates payable in Minimum Wages Act.

Labour provided by the Contractor, either directly or through Sub-contractors, for the exclusive use of the Employer or the Engineer, shall, for the purpose of this Sub-clause, be deemed to be employed by the Contractor.

In the event of default being made in the payment of any money in respect of wages of any person employed by the Contractor or any of its Sub-contractors of any tier in and for carrying out of this Contract and if a claim therefore is filed in the office of the Labour Authorities/Court and proof thereof is furnished to the satisfaction of the Labour Authority/Court, the Employer may, failing payment of the said money by the Contractor, make payment of such claim on behalf of the Contractor to the said Labour Authorities/Court and any sums so paid shall be recoverable by the Employer from the Contractor.

Persons in the service/ retired of Employer/ Engineer

6.3 a. The Contractor shall not recruit or attempt to recruit, staff and labour from amongst the Employer and the Engineer's personnel.

b. The Contractor either at the tendering stage or during construction stage will not employ any retired employee of Employer or Engineer of the Employer in any capacity unless such employee has completed at least two years post retirement period or has obtained the no-objection certificate from Employer for being employed with the Contractor. It will be responsibility of the Contractor to collect the Employer's no objection certification from such retired employee and submit the same back to the Employer.

In case of non-compliance of above, in addition to any or several of the courses, referred in Sub-clauses 13.2 being adopted by the Employer, the Contractor on Termination of the Contract for the aforesaid reasons will have no claim whatsoever against the Employer except for actual value of the Work executed till the time of Termination.

Labour Laws

6.4 a. In dealing with labour and employees, the Contractor and his Sub-contractors (including piece rate and petty Contractors) shall comply fully with all laws and statutory regulations pertaining to engagement, payment and upkeep of the labour in India.

b. The Contractor shall have a Labour Welfare Organisation which shall be responsible for labour welfare and compliance with prevalent labour laws, statutes and guidelines. The Labour Welfare Organization

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of Contractor shall comprise of such competent officials having requisite qualification as prescribed in Conditions of Contract on Safety & Health and Environment. In no case, an under qualified person may be appointed in Labour Welfare Organisation of Contractor. In this context the Contractor is also required to familiarize himself with NMRC's Labour Welfare Fund Rules as specified in Special Conditions of Contract or elsewhere in the Contract and comply with the same.

c. The Labour Welfare Organisation of Contractor shall prepare and submit a monthly compliance/Status Report of adherence to labour laws to the Engineer.

d. The Contractor will ensure to open bank accounts for each worker employed by him and his Sub-contractors and all the payments to workers will be released through bank accounts.

e. The violation of Labour Laws viz. Contractor Labour (Regulation & Abolition) Act, 1970 & Central Rules, 1971 made thereunder or other applicable Labour Laws under the jurisdiction shall attract following penalties in addition to the penalties imposed by Statutory Authorities in terms of applicable Act/Rules:-

(i) Delay in payment of dues to any: workmen	₹100/-per day workman
(ii) Non-compliance(s) of any other: provision of labour laws, pointed out by Employer/Engineer or their representative	₹5000/- for each non- compliance informed in writing, under the contract

The decision of Engineer with regard to the merits of imposition of penalty, determination of non-compliance and amount of penalty shall be final and binding on Contractor. The 'Contract' under this Sub-clause shall include any workmen employed by Contractor working within premises of Works at Employer's establishment whether directly or through Sub-contractor etc.

f. The Contractor shall ensure the registration of all his eligible workers inclusive of Sub-contractor and Petty Contractors with BOCW (Building and Other Construction Workers) Board.

Working Hours 6.5

The Contractor, if required, shall carry out work during night hours or in shifts, unless specifically provided otherwise in the Contract. No increase in rates or extra payments shall be admissible for night work.

The Contractor shall provide adequate lighting and safety arrangements. The Contractor shall also provide rest room if the work is being carried out in night shift.

Facilities for Staff and Labour 6.6

The Contractor shall provide and maintain at his own expense, all necessary accommodation and welfare facilities as per prevailing labour & welfare laws for his (and his Sub-contractor's) staff and labour. This includes good practices like provision of temporary crèche (BalMandir) where 50 or more women are employed at a time. All accommodation shall be maintained in a clean and sanitary condition, by the Contractor at his own cost. Separate rest room, toilets needs to be provided for female workers.

Health and Safety 6.7

Precaution shall be taken by the Contractor to ensure the health and safety of his staff and labour. The Contractor shall, in collaboration with

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and to the requirements of the local health authorities, ensure that medical staff, first aid facilities, sick bay and ambulance service are available at the accommodation and on the Site at all times, and that suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics. The Contractor shall maintain records and make reports concerning health, safety and welfare of persons, and damage to property, as per the Engineer's requirement and will ensure complete compliance with relevant clauses of Employer's Health, Safety and Environment Manual (SHE Manual) Conditions of Contract on Safety & Health and Environment.

The Contractor's Site Safety Plan shall be developed from his Outline Safety Plan as per Employer's Requirements and Conditions of Contract on Safety & Health and Environment of the Employer.

The Contractor shall appoint a member of his staff at the Site to be responsible for maintaining the safety, and protection against accidents, of personnel on the Site. This person shall be qualified for the work and shall have the authority to issue instructions and take protective measures to prevent accidents.

**Contractor's
Superintendence** 6.8

The Contractor shall provide all necessary superintendence during the design and execution of the Works, and as long thereafter as the Engineer may consider necessary for the proper fulfilling of the Contractor's obligations under the Contract. Such superintendence shall be provided by sufficient persons having adequate knowledge of the operations to be carried out (including the methods and techniques required, the hazards likely to be encountered and methods of preventing accidents) for the satisfactory and safe execution of the Works.

**Provision of
Efficient and
Competent Staff** 6.9

The Contractor shall employ (or cause to be employed) only persons who are careful and appropriately qualified, skilled and experienced in their respective trades or occupations. The Engineer may require the Contractor to remove (or cause to be removed) any person employed on the Site or Works, including the Contractor's Representative, who in the opinion of the Engineer:

- a. persists in any misconduct,
- b. is incompetent or negligent in the performance of his duties,
- c. fails to conform with any provisions of the Contract, or persists in any conduct which is prejudicial to safety, health of workers, or the protection of the environment.

**Preservation of
Peace and
orderly conduct** 6.10

6.10.1 The Contractor shall be responsible for preservation of peace and orderly conduct at the site and its neighborhood by Contractor's employees, Representatives, petty Contractors, Sub-contractors etc. In case, deployment of a Special Police Force becomes necessary at or near Site, during the tenure of Works, the expenses for the same shall be borne by the Contractor.

6.10.2 The Contractor shall at all times take all reasonable precautions which will include that no labour or employee is permitted to work at site in an intoxicated state or under influence of drugs, to prevent any unlawful, riotous or disorderly conduct by or amongst his staff and labour, and to preserve peace and protection of persons and property in the

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neighborhood of the Works against such conduct.

Labour to be Contractor's Employee 6.11 If, the Contractor directly or through petty Contractors or Sub-contractors supplies any labour to be used wholly or partly under the direct orders and control of the Engineer or the Employer, whether in connection with any Work being executed by the Contractor or otherwise for the purposes of the Employer, such labour shall, for the purpose of this clause, be deemed to be persons employed by the Contractor.

Report of Accidents to Labour 6.12 The Contractor shall be responsible for safety of all employees, employed by him on Works, directly or through petty Contractors or Sub-contractors, and shall report accidents relating to any of them, however, and wherever occurring on Works, to the Engineer or the Engineer's Representative and shall make every arrangement to render all possible assistance and to provide prompt and proper medical attention. The compensation for affected workers or their relatives shall be paid by the Contractor in such cases with utmost expeditiously in accordance with the Workmen's Compensation Act or ESI Act as applicable.

Claim on account of violation of Labour laws 6.13 The Contractor shall be solely accountable for violation of any labour law by it, its petty Contractors or Sub-contractors and will pay any such claim/damage to the authorities forthwith on demand. If any money shall, as a result of any instructions, directions or decisions from the Authorities/Court or claim or application made under any of the labour laws or regulations, be directed to be paid by the Employer, such money shall be deemed to be money payable to the Employer by the Contractor and he will pay the same to the Employer forthwith on demand, without demur and without asking for any reasons/explanations from the Employer. On failure of the Contractor to repay the Employer any money paid or to be paid by it as aforesaid within seven days after the same shall been demanded, the Employer shall be entitled to recover the amount from any money due or accruing to the Contractor under this or any other Contract with the Employer.

Maintenance of Records 6.14 The Contractor shall maintain all records pertaining to labour as mandated by the law of the land and shall keep it preserved at least for three years after the completion of the Project.

7 **QUALITY CONTROL**

Manner of Execution 7.1 All Plant, goods, and Materials to be supplied shall be manufactured, and all Work to be done shall be executed, in the manner set out in the Contract. Where the manner of manufacture and execution is not set out in the Contract, the work shall be executed in a proper, workman like and careful manner, with properly equipped facilities and non-hazardous Materials, and in accordance with modern recognized good practice.

Source of Materials 7.2 Sources of Materials being supplied shall be intimated to the Engineer and are subject to his approval. Materials that are not specified in the Contract document shall conform to the relevant Indian Standards or in their absence, shall conform to any International Standard approved by the Engineer.

Save as otherwise expressly provided in the Contract, samples shall be supplied by the Contractor at his own cost.

Delivery to Site 7.3 The Contractor shall be responsible for procurement, transport, receiving, unloading and safe keeping of all Plant, Rolling Stock, and Construction, Materials, Contractor's Equipment and other things

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- required for the completion of the Works.
- Inspection** **7.4** The Employer and the Engineer shall at all reasonable times
- a. have full access to all parts of the Site and to all places from which natural materials are being obtained, and
- b. during production, manufacture, fabrication and construction (at the site and elsewhere) be entitled to inspect, examine, measure and test the materials and workmanship, and to check the progress of manufacture, of all Plant, goods, construction and Materials to be supplied under the Contract.
- The Contractor shall give the Engineer full opportunity to carry out these activities including providing access, facilities, permissions and safety equipments. No such activity/inspection shall relieve the Contractor from any obligation or responsibility.
- Testing** **7.5** This sub clause shall apply to all tests specified in the Contract, other than the Tests after Completion.
- The Contractor shall provide all documents and other information necessary for all types of testing and such assistance, labour, materials, electricity, fuel, stores, apparatus and instruments as are necessary to carry out such tests efficiently.
- The Contractor shall agree, with the Engineer, the time and place for the testing of any Plant, goods, Materials and other parts of the Works as specified in the Contract. The Employer/Engineer may instruct the Contractor for any additional test, at Employer's cost.
- The Engineer shall give the Contractor not less than 24 hours' notice of his intention to attend the tests.
- If the Engineer does not attend at the time and place agreed, or if the Contractor and the Engineer agree that the Engineer shall not attend, the Contractor may proceed with the tests, unless the Engineer instructs the Contractor otherwise. Such tests shall be deemed to have been made in the Engineer's presence.
- The Contractor shall promptly forward to the Engineer duly certified reports of the tests. If the Engineer has not attended the tests, he shall accept the readings as accurate. When the specified tests have been passed, the Engineer shall endorse the Contractor's test certificate, or issue a certificate to him, to that effect.
- The expense of conducting such Tests shall be borne by the Contractor. No such testing shall relieve the Contractor from any obligation or responsibility.
- Rejection** **7.6** i. If, as a result of inspection, examination or testing, any Plant, goods, Material, design or workmanship is found to be defective or otherwise not in accordance with the Contract, the Engineer may reject the same duly giving notice to the Contractor with reasons. The Contractor shall then promptly make good the defect and ensure that the rejected item after rectification complies with the Contract.
- ii. If the Engineer requires such Plant, Goods, Material, Design or Workmanship to be retested, the tests shall be repeated under the same terms and conditions. If such rejection and retesting cause the Employer to incur additional costs, such costs shall be recoverable from the Contractor by the Employer, and may be deducted by the Employer

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from any sum due, or to become due, to the Contractor.

i. Notwithstanding any previous Test or certification, the Engineer shall have the authority to instruct the Contractor:-

a. To remove from the Site and replace any plant or Materials which is not in accordance with the Contract.

b. To remove and re-execute any other work which is not in accordance with the Contract.

/. Execute any work which is urgently required for the safety of the Works, whether because of an accident, unforeseeable event or otherwise.

/. In case of default on the part of the Contractor in carrying out such order, the Employer shall be entitled to employ and pay other Parties, to carry out the same, and all expenses consequent thereof or incidental thereto, shall be recoverable from the Contractor or may be deducted by the Employer from any sum which may be due to the Contractor.

Liability after
Inspection and
Testing

7.7

The Contractor shall not be released from any liability or obligation under the Contract by reason of any such inspection or testing or witnessing of testing, or by the submission of reports of inspection or testing to the Engineer.

Ownership of
Plant and
Materials

7.8

Each item of Plant, goods, and Material shall become the property of the Employer, when it is delivered to Site or payment thereof, either in part or full, has been made. The Contractor shall however continue to bear the risk in respect of such items which continue to remain in his custody.

Cost of
Employer's
Attendance
Including Travel

7.9

The Employer shall bear the costs of attendance including travel by the Employer or his Representative for the purposes of Sub-clauses 7.4 and 7.5 above. The cost of attendance including travel by the Employer, Engineer or his Representative for the purpose of Sub-clause 7.6 shall be borne by the Contractor.

Covering up of
Works

7.10

Examination of
Work before
covering up

7.10.1

No Work or part of Work shall be covered up or put out of view, without the prior approval of the Engineer or the Engineer's Representative.

Cost of
uncovering the
Work already
covered up

7.10.2

The Contractor shall uncover any part or parts of the Works, or make openings in or through the same, as the Engineer may from time to time direct, and shall reinstate and make good such part or parts, to the satisfaction of the Engineer. If any such part or parts have been covered up, or put out of view after compliance with the requirement of Sub-clause 7.11.4 and the Works are found to be executed in accordance with the Contract, the expenses of uncovering, making openings in or through, reinstating and making good the same, shall be borne by the Employer, but if the Works are found to be defective, costs shall be borne by the Contractor.

In case after completion of a part of the Work, the part of Work is not fully consistent with the Employer's Requirements and there is no way to change the same, in that case, the same (provided it has no implication on safety and operation) shall be accepted only at a Contractor's deemed variation at lower negotiated price.

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The decision of the Engineer in this regard shall be final and binding on the Contractor.

Tests after Completion 7.11

Contractor's Obligations 7.11.1

The Contractor shall carry out the Tests on Completion at his own cost in accordance with the Contract after providing the documents in accordance with Sub-clauses 5.4 and 5.5. The Contractor shall give, to the Engineer, 21 days' notice of the date after which the Contractor will be ready to carry out the Tests on Completion. Unless otherwise agreed, such Tests shall be carried out within 14 days after this date, on such day or days as the Engineer shall instruct.

Unless otherwise stated in Special Conditions of Contract, the Tests on Completion shall be carried out in the following sequence

- a. pre-commissioning test, which shall include appropriate instructions and ("dry" or "cold") functional tests to demonstrate that each item of the Plant, goods and Work can safely undertake the next stage
- b. Commissioning Test shall include the specified operational tests to demonstrate that Works or Sections can be operated safely and as specified under all available operating condition
- c. trial operation which shall demonstrate that the Works or Section perform reliably and in accordance with the Contract

The Contractor at his cost shall arrange all tools, equipments, gadgets, facilities or as deemed necessary by the Engineer for such tests, In considering the results of the Tests on Completion, the Engineer shall make allowances for the effect of any use of the Works by the Employer on the performance or other characteristics of the Works. As soon as the Works, or a Section, have passed the Tests on Completion described in sub-paragraphs (a), (b) or (c), the Contractor shall provide the Engineer and the Employer with a certified report of the results of all such Tests

Delayed Tests 7.11.2

If the Engineer opines that Tests on Completion are being unduly delayed by the Contractor, the Engineer may by notice require the Contractor to carry out such Tests within 21 days after the receipt of the notice. The Contractor shall carry out such Tests on such day or days as the Contractor may fix and of which he shall give notice to the Engineer.

If the Contractor fails to carry out the Tests on Completion within 21 days, the Engineer may proceed with such Tests at the risk and cost of the Contractor. The Tests on Completion then shall be deemed to have been carried out in the presence of the Contractor and the results of such Tests shall be accepted as accurate.

Retesting 7.11.3

If the Works, or a part thereof, or a Section, fail to pass the Tests on Completion, Sub-clause 7.6 "Rejection" shall apply, and the Engineer or the Employer may require such failed Tests, and the Tests on Completion on any related work, to be repeated under the same terms and conditions.

Failure to Pass Tests on Completion 7.11.4

If the Works, or a part thereof, or a Section, fail to pass the Tests on Completion, repeated under Sub-clause 7.11.3, the Engineer shall be entitled to:

- a. order further repetition of Tests on Completion under Sub-clause

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7.11.3; or

b. reject the Works, or a part thereof, or a Section (as the case may be), in which event the Employer shall have the same remedies against the Contractor as are provided under Clause 13; or

c. issue a Taking Over Certificate, if the Employer so requires. The Contract Price shall then be reduced by such amount as determined by the Engineer and as shall be appropriate to cover the reduced value to the Employer as a result of this failure. The Contractor shall then proceed in accordance with his other obligations under the Contract.

Integrated testing and system commissioning 7.12

Integrated Testing 7.12.1 Tests on Completion shall also include Integrated Testing where applicable as per the Contract conditions. The Contractor shall, following satisfactory completion of tests on his Works, equipment, sub-systems or system, perform, at the direction of the Engineer, programme of tests to verify and confirm the compatibility and complete performance of his Works, equipment, sub-systems or system with the Works, equipment, sub-systems or system provided by others.

Compilation of Test Results 7.12.2 The results of the Integrated Testing and Commissioning shall be compiled and evaluated by the Engineer and the Contractor.

Retesting 7.12.3 If the Works, or a part thereof, or a Section, fail to pass the Integrated Testing and Commissioning, the Engineer shall require such failed Tests, to be repeated under the same terms and conditions. If such failure and retesting result from a default of the Contractor and cause the Employer to incur additional costs, the same shall be recoverable from the Contractor by the Employer, and may be deducted by the Employer from any money due, or to become due, to the Contractor.

Failure to Pass Test 7.12.4 If the Works, or a part thereof, or a Section, fail to pass Integrated Testing and Commissioning and the Contractor in consequence proposes to make any adjustment or modification to the Works or a part thereof, or a section, the Engineer may, with the approval of the Employer, instruct the Contractor to carry out such adjustment or modification, at his own cost and to satisfy the requirements of Integrated Testing and Commissioning within such time as the Employer / Engineer may deem to be reasonable.

Statutory Requirements 7.12.5 The Contractor along with others shall carry out all statutory tests and trials, under the supervision of the Engineer, necessary for obtaining sanction of the competent authority for opening the system for public carriage of passengers.

8 TIME MANAGEMENT

Commencement of Works 8.1 The Contractor shall commence the Works on the date specified in the Letter of Acceptance or if no date is specified in the Letter of Acceptance, on the date specified in an instruction in writing to that effect from the Engineer (Notice to Proceed). Thereafter the Contractor shall proceed with due diligence, without delay, and in accordance with the programme or any revised or modified programme of the Works. Time will be the essence of Contract and time for Completion shall reckon from the date the Contractor is required to commence the Works under this Clause.

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The Contractor shall not commence the construction, manufacture or installation of the Works or of any part of the Works unless and until the Engineer has endorsed the relevant Working Drawings in accordance with the Employer's Requirements.

Time for Completion 8.2

Time is the essence of Contract and will remain so at all times during the pendency of the Contract including the extended period of Contract. The Contractor shall ensure defect free completion and passing of tests on the completion, including integrated testing wherever provided in the scope of Work and commissioning of the whole of the Works and/or parts thereof before the same is taken over by the Employer.

Delay 8.3

In case of delay on the part of the Contractor, the Contractor shall be liable to pay Liquidated Damages and any other compensation for the damages suffered by the Employer as per clause 8.5. This is without prejudice to the right of the Employer to rescind the Contract.

Failure or delay by the Employer or the Engineer, to hand over to the Contractor the Site necessary for execution of Works, or any part of the Works, or to give necessary notice to commence the Works, or to provide necessary Drawings or instructions or clarifications or to supply any material, Plant or Machinery, which under the Contract, is the responsibility of the Employer, shall in no way affect or vitiate the Contract or alter the character thereof; or entitle the Contractor to damages or compensation thereof but in any such case, the Engineer shall extend the time period for the completion of the Contract, as in his opinion is/are reasonable.

Extension of Time for Completion 8.4

Extension of Time 8.4.1

The Contractor may apply for an extension of the Time for Completion if the Work is or will be delayed either before or after the Time for Completion by any of the following causes:

- a. "Force Majeure" referred to in Clause 16
- b. The Contractor's work held up for not being given possession of or access to the Site in accordance with the Contract
- c. Instruction of the Engineer to suspend the Works and the Contractor not being in default as to reasons of suspension.
- d. Acts or omissions of other Designated Contractors in executing Work not forming part of this Contract and on whose performance, the performance of the Contractor necessarily depends.
- e. Any act of prevention or Breach of Contract by the Employer and not mentioned in this Clause
- f. Any order of Court restraining the performance of the Contract in full or in any part thereof
- g. Any other event or occurrence which, according to the Employer is not due to the Contractor's failure or fault, and is beyond his control without Employer being responsible for the same.
- h. An Employer's Variation

However, the Contractor shall not be entitled to any extension of time where the instructions or acts of the Employer or the Engineer are necessitated by or intended to cure any default of or breach of Contract by the Contractor or where any delay is due to

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- a. the failure of Sub-contractor, to commence or to carry out Work in due time,
- b. non-availability, or shortage of Contractor's equipment, labour, utility services, Plant and Materials,
- c. inclement weather conditions, and
- d. the Contractor not fulfilling his obligations under Sub-clause 4.4.

If the Contractor considers himself to be entitled to an extension of time for Completion, he shall give notice to the Engineer of such intention as soon as possible and in any event within 28 days of the start of the event giving rise to the delay and full and final supporting details of his application within 21 days of the last day of delay, together with any notice required by the Contract and relevant to such Clause.

The Engineer shall proceed in accordance with Sub-clause 3.5 to agree or determine either prospectively or retrospectively such extension of the Time for Completion as may be due. The Engineer shall notify the Contractor accordingly. The extension of time including that of key date shall not entitle the Contractor to retain the Advances which shall be governed by Clause 11.2.

**Extension of time 8.4.2
for completion
for other reasons**

The Contractor shall not be entitled to an extension of time by reason of any delay to any activity in carrying out of the Works unless in the opinion of the Engineer such delay results in or may be expected to result in a delay to completion of the Works, or achievement of any Stage by the relevant Key Date. Whether or not the Contractor fails to achieve any Milestone by reason of any delay shall not by itself be material to the Contractor's entitlement to an extension of time.

Any extension to a Key Date shall not by itself entitle the Contractor to an extension to any other Key Date.

**Extension of time 8.4.3
for delays due to
Contractor**

If the delay in the completion of the whole Works or in achieving Key Date for stages of Work defined in Contract, for which an earlier completion period is stipulated, is due to the Contractor's failure or fault, and the Engineer is of the view that the remaining Works or subsequent linked Key Date for remaining stages of Work can be completed by the Contractor in a reasonable and acceptable short time, then, the Engineer may allow the Contractor extension or further extension of time at its discretion with or without Liquidated Damages, or with or without freezing of escalation indices in Price Variation formula, for completion, as he may decide.

**Liquidated 8.5
Damages for
Delay**

Time is the essence of the Contract. Appendix-1 to the Form of Tender shall include in respect of the Works and in respect of any Stage, a percentage of the total Contract value which will be recoverable from the Contractor as Liquidated Damages for delay in completion of the Works or in achievement of a stage by a particular Key Date. The total amount of Liquidated Damages in respect of the Works in all stages shall, however, not exceed the limit of Liquidated Damages stated in the Appendix to the Form of Tender. The aforesaid Liquidated Damages do not, however, include the sums payable by the Employer to Designated Contractors on account of delay caused by the Contractor to Designated Contractors. Such sums shall be recoverable from the Contractor in addition to any Liquidated Damages payable under this clause, the total ceiling limit of which is 15% of the Contract value including Liquidated Damages levied under the provision of Appendix 1 to the Form of

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Tender.

The Liquidated Damages are recovered by the Employer from the Contractor for delay and not as penalty. The Parties agree that amount of Liquidated Damages leviable under the Contract are the genuine pre-estimate of the loss suffered by the Employer because of which the Liquidated Damages have been levied on the Contractor. The Liquidated Damages may be recovered from any amount of money due from the Contractor under the Contract or any other Contract which the Contractor has with the Employer. The Liquidated Damages may also be recovered from the amount of Performance Security Bank Guarantee and in that case the Contractor would be liable to replenish the amount of Performance Security Bank Guarantee.

The Employer may, without prejudice to any other method of recovery, deduct the amount of such damages from any sum due, or to become due, to the Contractor. In the event of an extension of time being granted under Sub- Clause 8.3 and the amount due under this Sub-clause shall be recalculated accordingly, if excess recovery has been done, same will be refunded. The payment or deduction of such damages shall not relieve the Contractor from his obligations to complete the Works, or from any other of his duties, obligations or responsibilities under the Contract.

The Contractor shall use and continue to use his best endeavors to avoid or reduce further delay to the Works, or any relevant Stages.

At any time after the Employer has become entitled to Liquidated Damages, the Engineer may give notice to the Contractor under Sub-clause 13.1, requiring the Contractor to complete the Works within a specified reasonable time. Such action shall not prejudice the Employer's entitlements to recovery of Liquidated Damages, under this Sub-clause and to terminate under Sub-clause 13.2.

The decision of the Engineer as to the Liquidated Damages payable by the Contractor under this Clause shall be final and binding.

Rate of Progress 8.6

If for any reason which does not entitle the Contractor to an extension of time, the rate of progress of the Works is at any time, in the opinion of the Engineer, too slow to ensure timely completion of the Works or achievement of any Stage by the relevant Key Date, the Engineer may so notify the Contractor in writing. The Contractor shall thereupon take such steps as are necessary, or in default of taking such steps, shall take such steps as the Engineer may reasonably instruct in writing, to expedite progress so as to complete the Works or any Section in time or achieve any Stage by the relevant Key Date. The Contractor shall not be entitled to any additional payment for taking such steps.

If any steps taken by the Contractor in meeting his obligations under this Sub- Clause cause the Employer to incur additional costs, such costs shall be recoverable from the Contractor by the Employer, and shall be deducted by the Employer from any sum due, or to become due, to the Contractor.

If, in the opinion of the Engineer, the steps taken by the Contractor to expedite the progress are not adequate, the Engineer may take a recourse as per Clause 13.2.4 of this GCC.

Suspension of 8.7

The Engineer may at any time instruct the Contractor to suspend

GENERAL CONDITIONS OF CONTRACT

Work

progress of part or all of the Works. During suspension, the Contractor shall protect, store and secure such part or whole of the Works against any deterioration, loss or damage.

Consequences of Suspension 8.8

The Contractor shall not be entitled to extra cost (if any), incurred by him, during the period of suspension of Work., if such suspension is

- provided for in the Contract, or
- necessary for proper execution of Works or by reasons of weather condition or by some default on the part of the Contractor, or
- necessary for the safety of Works or any part thereof or
- necessary for the safety of adjoining public or other property or safety of the public or workmen or those who have to be at the site or
- to ensure safety and to avoid disruption of traffic and utilities, as also to permit fast repairs and restoration of any damaged utilities, or
- due to instructions of NGT/ EPCA or any other statutory authority on account of high pollution.

If suspension is ordered by the Engineer for reasons other than those mentioned in Sub-clause 8.8 then the Contractor's entitlement are in the table below:

Suspension Period	Extension of Time	Compensation for the suspension period	Remarks
Upto 14 days	No	No	Engineer may, at his sole discretion, give extension of time in exceptional circumstances.
15-30 days	Yes	No	Extension of time as considered proper by the Engineer
Above 30 days	Yes	<ul style="list-style-type: none"> As per Daily rate of wages for idle labour/employees 70% of the rate for hire charges/ equivalent hire charges for idle plant and machinery hired/owned (excluding cost of fuel and lubricants) 15% above all these items to cover overhead costs. 	Compensation as assessed by the Engineer for entire suspension period on submission of documentary proof by the contractor to Engineer's satisfaction.
Above 90 days If contractor asks for fore closure	No	As per Clause 13.3.4	Contractor may ask for closure of the Contract, or deletion from the Contract of that part of Works which has been suspended.

Resumption of Work 8.9

After receipt of permission or of an instruction to proceed, the Contractor shall, after notice to the Engineer, and together with the Engineer, examine the Works, Plant, Rolling Stock and Materials affected by the

suspension. The Contractor shall make good any deterioration or defect in or loss of the Works, Plant, Rolling Stock and Materials, which has occurred during the suspension.

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EMPLOYER'S TAKING OVER

Taking Over
Certificate

9.1

The Works shall be taken over by the Employer when they have been completed in accordance with the Contract, have passed the Tests on Completion, including Integrated Testing and Commissioning wherever applicable as per the Contract, and a Taking Over Certificate for the Works shall be issued. If the Works are divided into Sections, the Contractor shall be entitled to apply for a Taking Over Certificate for each Section.

The Contractor may apply by notice to the Engineer for a Taking-Over-Certificate not earlier than 14 days before the Works or Section (as the case may be) will, in the Contractor's opinion, be complete and ready for Taking Over. The Engineer shall, within 28 days after the receipt of the Contractor's application shall conduct a complete joint survey of the Works including carrying out any tests prescribed in the Contract and prepare a list of defects and outstanding Works and :

a. issue the Taking Over Certificate to the Contractor, stating the date on which the Works or Section were completed, including the Tests on Completion and Integrated Testing and Commissioning wherever applicable as per the Contract in accordance with the Contract if defects and/or outstanding Works are minor that does not affect the use and safety of the Works or Section for their intended purposes. The list of such Works alongwith the target date of completion for each Work shall be enclosed with the Taking Over Certificate and completion of all these Works / Rectification of defects within the stipulated time shall be the responsibility of the Contractor and any failure in it may be considered a reason by the Engineer to cancel the Taking Over Certificate issued earlier; or

b. reject the application, giving his reasons and specifying the Work required to be done by the Contractor to enable the Taking Over Certificate to be issued. The Contractor shall then complete such Work before issuing a further notice under this Sub-clause.

c. Issue of Taking Over Certificate by the Employer would not absolve Contractor from any liability under the Law and Contract, arising from any hidden / latent defect in the Works / Section executed under the Contract by the Contractor. The Employer would be entitled to recover from the Contractor any compensation / damages / loss arising from such hidden / latent defect in the Works executed by the Contractor.

Taking over of
Parts of the
Works

9.2

The Engineer may, at the sole discretion of the Employer issue a Taking Over Certificate for any part of the Permanent Works by following the procedure stipulated in Clause 9.1 above if:

a. the Employer uses thatpart of the Works for revenue service before the Taking Over Certificate is issued for the entire Work.

b. the balance part is not completed, not due to the fault of the Contractor and contractual date of completion for the completed part is over.

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DEFECTS LIABILITY

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- Completion of Outstanding Work and Remedying Defects** 10.1 "Defects Liability Period" shall mean the Defects Liability Period stated in the Special Conditions of Contract calculated from the date of taking over of the Works. Provided that, if any part of the Works or sub-systems or component of that part has been replaced, renewed or repaired except minor repair, the "Defects Liability Period" in respect of that part or sub-system or components of that part shall start from the date such replacement, renewal or repair has been completed to the satisfaction of the Engineer.
- The expiry of Defect Liability Period would not absolve the Contractor from any liability under the Law and Contract arising from any hidden / latent defect in the Works / Section executed under the Contract by the Contractor. The Employer would be entitled to recover from the Contractor any compensation / damages / loss arising from such hidden / latent defect in the Works executed by the Contractor.
- In order that the Construction and/or Manufacture Documents and the Works shall be in the condition required by the Contract (fair wear and tear excepted) at, or as soon as practicable after the expiry of the Contract Period, the Contractor shall execute all such Work of amendment, reconstruction, and remedying defects or damage, as may be instructed in writing by the Employer or the Engineer during the Defect Liability Period.
- Cost of Remedying Defects** 10.2 All Work referred to in Sub-clause 10.1 shall be executed by the Contractor at his own cost, if the necessity for such Work is due to:
- the design of the Works;
 - Plant, Rolling Stock, Materials or workmanship not being in accordance with the Contract; or
 - failure by the Contractor to comply with any of his other obligations.
- If in the opinion of the Engineer, such necessity is due to any other cause, he shall determine an adjustment to the Contract Price, with the approval of the Employer, and shall notify the Contractor accordingly. In this event, Sub-clause 12.3 shall apply to such Work.
- Extension of Contract Period** 10.3 The Contract Period shall be extended by a period, after the Works are taken over, during which the Works or any Section or item of Plant, Rolling Stock, cannot be used, for the purposes for which they are intended, by reason of a defect or damage.
- When delivery of Plant, Rolling Stock, and/or Materials, or erection of Plant, or installation of Materials, has been suspended under Sub-clause 8.7, the Contractor's obligations under this Sub-clause shall not apply to any defects or damage occurring more than three years after the Plant, Rolling Stock and/or Materials would otherwise have been delivered, erected and taken over.
- Failure to Remedy Defects** 10.4 If the Contractor fails to remedy any defect or damage within such time as the Employer / Engineer may deem to be reasonable, the Employer or the Engineer may fix a date on or by which to remedy the defect or damage, and give the Contractor reasonable notice of such date. If the Contractor fails to remedy the defect or damage by such date and the necessity for such Work is due to a cause stated in Sub-clause 10.2(a), (b) or (c), the Employer may (at his sole discretion):

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a. carry out the Work himself or by others, in a reasonable manner and at the Contractor's risk and cost, but the Contractor shall have no responsibility for such Work: the costs incurred by the Employer in remedying the defect or damage shall be recoverable from the Contractor by the Employer;

b. require the Engineer to determine and certify a reasonable reduction in the Contract Price; or

c. if the defect or damage is such that the Employer has been deprived of substantially the whole of the benefit of the Works or parts of the Works, terminate the Contract in respect of such parts of the Works as cannot be put to the intended use, the Employer shall then be entitled to recover all sums paid for such parts of the Works together with the cost of dismantling the same, clearing the Site and returning Plant, Rolling Stock and Materials to the Contractor, and Sub-clause 13 shall not apply.

Notwithstanding anything contained herein the Employer would be entitled in urgent and critical situation(s)/events to remedy the defects in the Work by himself or through others, at the Contractor's risk and cost. The cost incurred by the Employer in remedying the defect or damage shall be recoverable from the Contractor by the Employer.

Removal of Defective Work 10.5

If the defect or damage is such that it cannot be remedied expeditiously on the Site and if the Employer gives consent, the Contractor may, remove from the Site for the purposes of repair any part of the Works, which is defective or damaged. This consent may require the Contractor to increase the amount of Performance Security by the full replacement cost of these items or to provide other appropriate Security acceptable to the Employer.

Further Tests 10.6

If the remedying of any defect or damage is such that it may affect the performance of the Works, the Engineer may require that Tests on Completion, including Integrated Testing, be repeated to the extent necessary. The requirement shall be made by notice within 28 days after the defect or damage is remedied. Such Tests shall be carried out in accordance with Clause 7.11

Right of Access 10.7

Until the Performance Certificate has been issued, the Contractor shall have the right of access to all parts of the Works and to records of the working and performance of the Works, except as may be inconsistent with any reasonable security restrictions by the organisation responsible for operating the Works.

Contractor to Search 10.8

The Contractor shall, if required by the Engineer, search for the cause of any defect, under the direction of the Engineer. Unless the defect is one for which the Contractor is liable, the Cost of such search shall be added to the Contract Price.

Performance Certificate 10.9

The Contract shall not be considered to be completed until the Performance Certificate has been signed by the Engineer or authorized official of the Employer and delivered to the Contractor at the end of 'Defect Liability Period, stating the date on which the Contractor completed his obligations related to completion of works and rectification of defects during Defect Liability Period to the Engineer's satisfaction. Only the Performance Certificate shall be deemed to constitute approval of the Works.

Notwithstanding anything contained herein the Contractor would continue to remain liable to the Employer for any cost, loss, damage or

GENERAL CONDITIONS OF CONTRACT

		compensation which arises from hidden or latent defect in the work executed by the Contractor under the Contract, even if such hidden and latent defects arise after the expiry of Defect Liability period or grant of Performance Certificate by the Employer under the Contract to the Contractor.
Unfulfilled Obligations	10.10	After the Performance Certificate has been issued, the Contractor and the Employer shall remain liable for the fulfilment of any obligation, which remains unperformed at that time. For the purposes of determining the nature and extent of any such obligation, the Contract shall be deemed to remain in force.
Emergency defect rectification	10.11	If any defect or damage is one requiring immediate attention from safety, environmental or operational viewpoint, the Engineer has the authority to proceed with rectification in any manner suitable and deduct such sums from the Contract Price.
	11	CONTRACT PRICE AND PAYMENT
The Contract Price Inclusions/ Exclusions	11.1	
	11.1.1	(i) Unless otherwise stated in the Special Conditions of Contract, the Contract Price, subject to any adjustment thereto in accordance with the Contract, shall be all inclusive (including all taxes, duties, royalties etc.) (ii) Nothing extra shall be payable over the quoted rates, notwithstanding any provision to the contrary in any law for the time being in force, save and except what is specifically provided in General or Special Conditions of Contract. (iii) The reimbursement (as per this Sub-clause) of whatsoever nature shall be provided only for Permanent Works. No reimbursement (as per this Sub-clause) shall be provided for Temporary Works and fuel.
Maintaining Records and Availing Exemptions	11.1.2	(i) In the event of exemption of custom duties, GST (CGST/IGST/SGST etc.) or any other cess/levy being granted by the Government in respect of the Works, the benefit of the same shall be passed on to Employer. The Contractor shall therefore maintain meticulous records of all the taxes and duties paid and provide the same as and when required by the Employer, so that the Employer is able to avail the reimbursement for which NMRC may issue a procedure order separately. Alternatively, the Employer may direct the Contractor to get the reimbursements based on exemption certificates / government's order and it shall be obligatory on part of the Contractor to get the reimbursements from the statutory authorities and pass on the benefit to NMRC. (ii) In case of Contractor's failure in availing the exemptions as stipulated above, the recovery of equivalent amount will be made from Contractor's dues.
Adjust in Contract Price	11.1.3	Adjustment in Contract price shall be done if a "Price Variation Formula" is given in the Special Conditions Of Contract otherwise it will be a fixed price contract.
Change in Taxes/Duty	11.1.4	The Contract Price shall not be adjusted to take into account any increase or decrease in cost resulting from any change in taxes, duties, levies from the last date of submission of the Tender to the completion date including the date of the extended period of Contract unless a

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GENERAL CONDITIONS OF CONTRACT

contrary provision exists in Special Conditions of Contract.

Advances 11.2

Mobilisation Advance 11.2.1

a. Mobilization Advance shall be generally limited to 5% of Original Contract Value payable in two equal installments or as mentioned in the Special Conditions of Contract. The first installment shall be paid after mobilization has started and next installment shall be paid after satisfactory utilization of earlier installment.

b. Mobilization Advance shall be paid interest free against acceptable Bank Guarantee from a scheduled commercial bank in India. The value of Bank Guarantee taken towards security of "Mobilization Advance" shall be 110% of the Advance taken by the Contractor. The Contractor, once the 50% of Mobilization Advance has been recovered, shall have a one-time option to reduce the Bank Guarantee for the Mobilization Advance by the amount recovered.

Advance against Plant and Machinery 11.2.2

Plant and Machinery Advance shall generally be limited to 5% of Original Contract Value or as specified in Special Conditions of Contract. This Advance shall be paid interest free against acceptable Bank Guarantee from a scheduled commercial bank in India. The value of Bank Guarantee taken towards Security of "Plant & Machinery Advance" shall be 110% of the Advance taken by the Contractor. The Contractor, once the 50% of Plant & Machinery Advance has been recovered, shall have a one-time option to reduce the Bank Guarantee for the Plant & Machinery Advance by the amount recovered. This Advance is payable against Plant, Equipment and Machinery, provided the same have reached the site or in the case of new items meant specifically for the work, firm purchase order has been placed and the invoices received. The Advance will be given only if the Plant / Machinery has been purchased for this Contract and not for those which are already in the books of the Contractor. The Plant and Machinery shall be valued by the Engineer as follows:

(i) New Items : 80% of purchase price

(ii) Second hand items in working order : 80% of the depreciated value as assessed by the Engineer

(iii) Items valued at less than : not to be considered
Rs 5.00 lakh per unit

Written Request for Advances 11.2.3

a. All Advances as admissible, shall be payable only on Contractor's written request to the Employer.

b. No advance shall be given after 40% of the original Contract amount has been paid.

Recovery of Advances 11.2.4

a. The recovery of Advances shall commence when 20% of the Original Contract Value of the Work has been paid and it will be completed by the time, 85% of the Original Contract Value has been paid or the original completion date whichever is earlier. As far as possible, the recovery of Advances shall be limited to 30% of on-account bill.

b. The Contractor shall always have the option to have the recoveries commenced and/or completed earlier, and/or to have recoveries affected in instalments of higher amount and also to repay part or whole of the Advance by direct payment rather than through on-account Bills.

GENERAL CONDITIONS OF CONTRACT

c. In case the Contract is terminated due to default of the Contractor or rescinded / foreclosed, due to any other reason, the Contractor shall return the unrecovered amount of all Advances within 15 days of issue of notice of termination / rescission / foreclosure of the Contract and if the Contractor fails to do so due to any reason whatsoever, then interest at rate equal to State Bank of India's Marginal Cost of fund based Lending Rate (MCLR) applicable for the tenure of 01 year prevailing on the date of issue of notice of termination / rescission / foreclosure plus 3% Penal Interest per annum shall be charged on the unrecovered amount of such Advances from 16th day onwards compounded quarterly till the same is returned by the Contractor.

Interest in Case of Delay in Repayment of Advances 11.2.5

Should there be delay in the progress and completion of Work, as a result of which it is not possible to recover the Advances and interest thereon, before the date of completion stipulated in the Contract, then the interest to be charged from the Contractor on the remaining portion of the Advances beyond the original completion date specified in the Contract, shall be equal to State Bank of India's Marginal Cost of fund based Lending Rate (MCLR) applicable for the tenure of 01 year prevailing on the original completion date specified in the Contract plus 3% Penal Interest per annum.

Advances to be Used only for this Work. 11.2.6

The Advances shall be used by the Contractor strictly for the purpose of the Contract, and for the purpose for which they are paid. Under no circumstances, shall the Advances be diverted for other purposes. Any such diversion shall be construed as a breach of the Contract and the Contractor shall be asked to return the Advances at once and pay interest at 15% per annum till the Advances are recovered back from him. The Contractor shall return the Advances and pay the interest in one go without demur.

Employer retains the right for any other remedy prescribed for breach of Contract in this regard.

The Contractor, if required by the Engineer shall provide the details of utilization of Mobilization Advance.

Provisional Payment Against Material at Site 11.3

11.3.1

A provisional payment on account of main construction materials required for the Permanent Works, shall be paid on request of the Contractor after these materials are brought to Site, against an Indemnity Bond in a form acceptable to Employer is duly executed. The payment shall be limited to 80% of the actual value or assessed value of these materials and the total of such provisional payment on account of construction materials at a time shall be limited to three percent of Original Contract Value or likely average consumption of such materials for three months, whichever is less and at any time the total outstanding provisional payment against material at site shall not exceed four percent of the Original Contract Value. The valuation of the average consumption of such main construction materials shall be approved by the Engineer, whose decision shall be final. Materials which are of perishable nature should be adequately insured.

Written Request for Advances/ Provisional Payment against 11.3.2

The provisional payments as admissible, shall be payable only on Contractor's written request to the Employer/Engineer.

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Material at Site

**Recovery of
Advances/
Provisional
Payment against
Material at Site**

11.3.3 In case of provisional payment against Materials, the amount consumed every month shall be recovered from the next month's on-account bill and the recovery to be completed in 3 monthly installments. In case recovery could not be made due to any reason, interest will be charged at the rate equal to State Bank of India's Marginal Cost of fund based Lending Rate (MCLR) applicable for tenure of 01 year prevailing on the due date of recovery..

**Application for
Interim Payment
Certificates**

11.4

11.4.1 In case of 'Lump Sum' Contract with cost centre and Milestone payment, the fixed Lump Sum Price shall be apportioned by the Contractor amongst the various Cost Centers. The amount thus apportioned under each Cost Centre will be further apportioned amongst various Milestones with the approval of the Employer. The Contractor shall be entitled to submit to the Engineer requests for interim payments only upon the achievement of one or more of the Milestones described in the Cost Centre.

At the beginning of each month, the Engineer shall issue to the Contractor certificate in respect of each Milestone due to be achieved in the preceding month stating:

- (i) the date on which the Milestone was achieved; or
- (ii) the non-achievement of the Milestone.

The Contractor shall submit a statement in three copies to the Engineer at the beginning of each month, in a form approved by the Engineer, showing the amounts to which the Contractor is entitled, together with supporting documents, including Milestone Certificates. The statement shall include the following items, as applicable, which shall be expressed in the various currencies in which the Contract Price is payable, in the sequence listed:

- a. the amount due in respect of Milestones is certified by the Engineer as achieved under each Cost Centre;
- b. any amounts to be added and deducted for the Advance payments and recovery thereof;
- c. any other additions or deductions is due and approved by the Engineer in accordance with the Contract; and
- d. the deduction of the amounts certified in all previous Interim Payment Certificates.

The Contractor shall not submit more than one request for interim payment per month.

If any Milestone is not achieved by the end of the month in which it is scheduled to be achieved, the Engineer shall suspend the payment relating to the Cost Centre in which the Milestone is included.

Payments suspended under this Clause shall be resumed by being included in the next application for interim payment made after the Milestone is achieved.

11.4.2

In case of 'Lump Sum' or Item rate' Contracts with payment schedule, the Contractor shall be entitled to be paid from time to time, normally once in a calendar month, by way of 'on-account' bill as per the payment

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- schedule indicated in Bill of Quantity(BOQ) or as finally approved by the Engineer.
- Issue of Interim Payment Certificates** 11.5 No amount will be certified or paid until the Employer has received, and approved, the Performance Security and the Parent Company Undertakings and Guarantees in accordance with Sub-clause 4.2 and signing of the Contract Agreement. Thereafter, the Engineer shall, within 21 days of receiving a statement and supporting documents, deliver to the Employer, with a copy to the Contractor, an Interim Payment Certificate showing the amount which the Engineer considers to be due; if no payment is considered to be due, the Engineer shall promptly notify the Contractor accordingly.
- Where only a part of the payment applied for is disputed, payment certificate shall be issued for the undisputed amount.
- The Engineer shall have the power to omit from any of the Contractor's requests for payment, the value of any Work executed or Materials supplied or Services rendered, with which he may for the time being be dissatisfied and for that purpose and for any other reason which to him may seem proper, may delete, correct or modify the sum(s) previously certified by him as being due to the Contractor.
- Payment- Interim and Final** 11.6 Unless otherwise stated in Special Conditions of Contract,
- After preliminary scrutiny and certification by the Engineer, payment of 80% of the certified interim amount shall be made by the Employer within 07 days. The amount certified shall account for all deductions, including statutory deductions, recoveries for Advances and any amounts due from the Contractor. The balance 20% shall be paid within 28 days, from the date of the preliminary certification of the bill by the Engineer.
 - Next 80% interim payment shall be made only after 100% payment of preceding interim payment certified has been completed.
 - Any such payment made to Contractor by Employer, shall not constitute any acceptance of the measurements or bill of quantities by the Employer and the Employer shall have the right to alter, modify, reduce or diminish the quantities or classification entered in the measurement books or bills. The Employer shall have right to recover any excess payment made in either 80% interim payment of bill or earlier bill from balance 20% bill or subsequent bill respectively. However, if such excess payment exceeds the balance 20% bill or subsequent bill respectively, the Contractor shall on demand from the Engineer or Employer immediately refund the extra amount to the Employer within 7 days, failing which the Contractor shall have to pay interest at the rate equal to State Bank of India's Marginal Cost of fund based Lending Rate (MCLR) applicable for the tenure of 01 year prevailing on date plus 3% Penal interest per annum with monthly rest till the said extra amount is paid back by the Contractor.
 - The Employer shall pay the amount certified in the final payment certificate within 56 days from the date of issue of certificate.
- Payments shall be made into a bank account, nominated by the Contractor in Indian rupees in a bank in India unless otherwise permitted in Special Conditions of Contract. If payments are to be made in more than one currency, separate bank accounts may be nominated by the contractor for each currency, and payment shall be made by the

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GENERAL CONDITIONS OF CONTRACT

- Employer accordingly.
- Statement at Completion** 11.7 Not later than 60 days after the issue of the Taking Over Certificate for the whole of Works, the Contractor shall submit, to the Engineer, three copies of a statement at completion with supporting documents, showing in detail, in the form approved by the Engineer under Sub-clause 11.4.:
- the final value of all Work done in accordance with the Contract, up to the date stated in such Taking Over Certificate,
 - any further sums which the Contractor considers to be due, and
 - an estimate of amounts which the Contractor considers will become due to him under the Contract.
- The estimated amounts shall be shown separately in such statement at completion. The Engineer shall certify payment under Sub-clause 11.5.
- Application for Final Payment Certificate** 11.8 Not later than 56 days after the issue of the Performance Certificate, the Contractor shall submit to the Engineer three copies of a draft final statement with supporting documents showing in detail, in a form approved by the Engineer:
- the value of all Work done in accordance with the Contract, and
 - any further sums which the Contractor considers to be due to him under the Contract or otherwise.
- If the Engineer disagrees with or cannot verify any part of the draft final statement, the Contractor shall submit such further information as the Engineer may reasonably require and shall make changes in the draft as may be agreed between them. The Contractor shall then prepare and submit to the Engineer the Final Statement as agreed.
- If, following discussions between the Engineer and the Contractor and any changes to the draft final statement which may be agreed between them, it becomes evident that a dispute exists, the Employer shall pay those parts of the draft final statement as certified by the Engineer as not being in dispute. The remainder of the dispute may then be resolved under Clause 17, in which case the Contractor shall then prepare and submit to the Engineer a Final Statement in accordance with the outcome of the dispute.
- Discharge** 11.9 When submitting the final statement, the Contractor shall submit a written discharge which confirms that the total of the Final Statement represents full and final settlement of all monies due to the Contractor under the Contract. Such discharge may state that it shall become effective only after payment due under the Final Payment Certificate has been made and the Performance Security referred to in Sub-clause 4.2 has been returned to the Contractor.
- Issue of Final Payment Certificate** 11.10 The Engineer shall issue to the Employer, with a copy to the Contractor, the Final Payment Certificate within 28 days after receiving the Final Statement and written discharge in accordance with Sub-clause 11.8 and 11.9 respectively, stating:
- the amount which is finally due, and
 - after giving credit to the Employer for all amounts previously paid by the Employer and for all sums to which the Employer is entitled, the balance, if any, due from the Employer to the Contractor or from the

GENERAL CONDITIONS OF CONTRACT

Contractor to the Employer, as the case may be.

If the Contractor has not applied for a Final Payment Certificate in accordance with Sub-clauses 11.8 and 11.9, the Engineer shall request the Contractor to do so. If the Contractor fails to make such an application within a period of 28 days, the Engineer shall issue the Final Payment Certificate for such amount as he considers to be due.

Notwithstanding anything contained herein the issue of Final Payment Certificate would not restrict/hinder the right of the Employer in Law/under the Contract to recover from the Contractor in loss, damage, compensation arising out of fraudulent practice/corrupt practices indulged into by the Contractor prior to the execution of the Contract, during the execution of the Contract and after the completion of the Contract.

Notwithstanding anything contained herein, the issue of Final Payment Certificate would not absolve the Contractor from any liability/loss/damage/ compensation towards the Employer in Law and/or under the Contract arising out of latent and hidden defects in the Works executed by the Contractor under the Contract.

Cessation of Employer's Liability	11.11	In respect of any matter or thing arising out of (or in connection with) the Contract or execution of the Works before the issue of the Taking Over Certificate for the whole of the Works, the Employer shall not be liable to the Contractor unless the Contractor shall have included a claim for it in his Statement at Completion described in Sub-clause 11.7. For any such matter or thing arising after the issue of the Taking Over Certificate for the whole of the Works, the Employer shall not be liable to the Contractor unless the Contractor shall have included a claim for it in his Final Statement.
Calculation of Payments in Foreign Currency	11.12	All payments made by the Employer pursuant to the terms of the Contract shall be in the currency or currencies specified in the Contract. Wherever any sum in a foreign currency has to be converted into Indian Rupees for any purpose, the exchange rate to be employed for such conversion shall be the selling rate of exchange at the close of business of the State Bank of India, 28 days before the latest date of submission of Tenders.
Round off	11.13	In every payment to the Contractor, sums of less than fifty paise shall be omitted and sums of fifty paise and more up to one rupee shall be reckoned as one rupee.
Payment By Cheque and E-Payment	11.14	All payments to the Contractor will be made by cheque or "E-Payment" as desired by the Employer.
Tax Deduction at Source	11.15	Tax deductions will be made at source as per statutory requirement from every payment made to the Contractor at rates notified from time to time.
Production of Vouchers	11.16	i. The Contractor shall, whenever required by the Engineer, produce or cause to be produced for examination by the Engineer, any quotation, invoice, cost or other account books, vouchers, receipts, letters, memoranda or any copy of or extract from any such documents and also furnish information and returns, as may be required, relating to the execution of this Contract or relevant for verifying or ascertaining the cost of execution of this Contract or ascertaining the Materials supplied by the Contractor are in accordance with the Specifications laid down in the Contract. The Engineer's decision on the question of relevancy of

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any documents, information or returns shall be final and binding on the Parties.

- i. If any part or item of the Work is allowed to be carried out by a Sub- contractor, assignee or any subsidiary or allied Firm, the Engineer shall have power to secure the books of such Sub-contractor, assignee or any subsidiary or allied Firm through the Contractor, and shall have power to examine and inspect the same. The above obligations are without prejudice to the obligations of the Contractor under any statute, rules or orders.

**Withholding and
Lien for Sums
Claimed**

11.17

- i. The Employer shall have lien over all or any moneys that may become due and payable to the Contractor under the Contract, and/or over the deposit of Performance Security or other amount or amounts made under the Contract and which may become payable to the Contractor.

- i. And further, unless the Contractor pays and clears immediately on demand any claim of the Employer, the Employer shall at all times be entitled to deduct the amount of the said claim from the moneys, securities and / or deposits which may have become or will become payable to the Contractor under the presents, or under any other Contract or transaction whatsoever between the Employer and the Contractor even if the matter stands referred to Arbitration. The Contractor shall have no claim for any interest or damage whatsoever in respect of any amounts withheld or treated as withheld under the lien referred to above and duly notified as such to the Contractor.

**Signature on
Receipts for
Payments**

11.18

Every receipt of payment to Contractor including refund of the Performance Security shall be signed by the person authorized to do so on his behalf. In the event of death of any of the Contractor's partners in case the Contractor is a partnership firm, during the currency of the Contract, it is hereby expressly agreed that every receipt by any one of surviving Contractor's partners, shall, if so signed as aforesaid, be a good and sufficient discharge as aforesaid, provided that nothing in this Clause shall be deemed to prejudice or affect any claim, which the Employer may hereafter have against the legal representatives of any Contractor's partner so dying, for or in respect of breach of any of the conditions of the Contract. Provided also that nothing contained in this clause shall be deemed to prejudice or affect the respective rights and obligations of the Contractor's partners, or of the legal heirs / representatives of any deceased Contractor / partner interest.

**Post Payment
Audit**

11.19

It is an agreed term of the Contract, that the Employer reserves to himself the right to carry out a post payment audit and / or technical examination of the Works, and the Final bill including all supporting vouchers, abstracts, etc., and to make a claim on the Contractor for the refund of any excess amount paid to him, If as a result of such examination, any over-payment to him is discovered to have been made in respect of any Work done or alleged to have been done by the Contractor, under the Contract. If any under-payment is discovered, the same shall be paid by the Employer to the Contractor. Such payments or recoveries, however, shall not carry any interest.

**Recovery of
money due to the
Employer**

11.20

All damages (including, without limitation, Liquidated Damages), costs, charges, expenses, debts, or sums for which the Contractor is liable to the Employer under any provision of the Contract may be deducted by the Employer from monies due to the Contractor under the Contract

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(including, without limitation, Liquidated Damages) and the Employer shall have the power to recover any balance not so deducted from monies due to the Contractor under any other Contract between the Employer and the Contractor.

When the Contractor has as per the provision of the Contract assigned to a third Party the right to receive monies due, or, to become due, under the Contract to the Contractor or charged such monies in favour of a third Party, the Employer's right to deduct damages (including without limitation Liquidated Damages), costs, charges, expenses, debts or sums for which the Contractor is liable to the Employer from monies due to the Contractor under the Contract shall be limited to the right expressed above.

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VARIATIONS**Right to Vary**

12.1

All Variations shall be recorded in a written instruction from the Engineer either as a Contractor's Variation or as an Employer's Variation, and shall not be implemented by the Contractor without such an instruction in writing from the Engineer. No Variation shall in any way vitiate or invalidate the Contract. The Contractor shall not make any alteration and/or modification of the Works, unless and until the Engineer instructs or gives consent to a Variation. If the Construction and/or Manufacture Documents or Works are not in accordance with the Contract, the rectification shall not constitute a Variation.

Contractor's Variations

12.2

Variation Proposals

12.2.1

The Contractor may submit to the Employer, in writing at its own cost, any engineering proposal as Contractor's Variation for modifying the Employer's Requirements, provision of additional land, access or feasibility over and above that is provided in the Contract for the purpose of saving in time, construction or manufacture costs. Such Variation proposal shall not impair the essential character, functions or characteristics or the Work, including Service life, economy of operation, ease of maintenance, desired appearance, or design and safety standards.

The Contractor shall provide his Variation proposal in a time limit prescribed by the Engineer. The Engineer's decision in this regard shall be communicated to the Contractor within a reasonable period of time. If by any reason, the time limit specified by the Engineer is exceeded, the proposal may not be considered.

The decision of the Engineer in this regard shall be final and binding.

Contents of Variation

12.2.2

If the Employer requires or accepts it, and if the Contractor wants to proceed with the proposal, the Contractor must provide (at no cost to the Employer) a detailed report prepared by a Consultant acceptable to the Employer and which shall include:

- a. a general description of the original Contract requirements for the Works and the proposed changes
- b. a detail of all the proposed modifications to the drawings and specifications
- c. a detail of all Work and goods affected by the value engineering proposal
- d. a detailed estimate of the construction cost based on the original

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		Contract requirements and based on the proposed changes
		e. any resultant time extensions or reductions for the Contract
		f. statement to the extent of minimum saving expected. The Contractor's cost of preparing the Variation proposal shall be excluded in determining the estimated net savings in construction costs.
Employer Review	12.2.3	<p>The Employer may in his sole discretion, accept or reject the Contractor's Variation or any part thereof and determine the estimated net saving in the construction cost. The Employer shall not be liable for delays or damages to the Contractor due to any failure of the Employer to accept or act upon any such Variation proposal submitted pursuant to this Clause.</p> <p>Once, the Employer or the Engineer rejects the Contractor's Variation during proposition due to any reason, it shall not be pursued by Contractor in any other form.</p>
Amendments- Employer Issuance	12.2.4	If the Variation proposal is acceptable to the Employer/Engineer in whole or in parts, it will be accepted by execution of an amendment or by communication in writing. Such amendment/communication in writing shall identify all the changes in the specifications, Contract Period etc. and shall specify net savings on construction costs which shall be adjusted in the Contract value by the Employer.
Contractor's Acceptance and Payment	12.2.5	The Contractor shall either accept or reject any proposed amendment/communication in writing executed by the Engineer pursuant to this section within 5 working days of its receipt date from the Employer. If the Contractor does not reject the same in the period stipulated above, the amendments /communication in writing shall be deemed to be accepted by the Contractor and shall become a Variation to the Contract. The Contractor's acceptance shall be unconditional and the Contract value / price shall be adjusted by the amount of saving due to the Variation.
Employer's Variations	12.3	<p>If the Engineer requests a proposal, prior to instructing a Variation which may be for additional work or alteration in the work on deletion / reduction in the scope of work, the Contractor shall submit at his own cost within 14 days or such period as the Engineer may allow of the receipt of such request of the Engineer</p> <p>a. a description of the proposed design and/or work to be performed and a programme for its execution,</p> <p>b. the Contractor's proposal for any necessary modifications to the programme according to Sub-clause 4.13, and</p> <p>c. the Contractor's proposal for adjustment to the Contract Price, Time for Completion and/or modifications to the Contract.</p>
Variation Procedure	12.1	<p>The Engineer shall, as soon as practicable after receipt of proposals under sub- clauses 12.2 and / or 12.3, respond with approval, rejection or comments.</p> <p>If the Engineer instructs or approves a Variation, he shall proceed in accordance with Sub-clause 3.5 to agree or determine adjustments to the Contract Price, Time for Completion and Schedule of Payments.</p> <p>After receipt of proposal, it will be the prerogative of the Employer, whether to Instruct and proceed ahead with the Variation or drop the proposal in part or full. In that case, no cost of preparing and submitting the proposal will be payable to Contractor. In case, the design part of</p>

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**Variation in the
Bill of Quantities** **12.5**

Variation has been completed on submission of same to the Engineer, the Employer decides to abandon the Variation, only cost for design to the extent of work done will be paid to the Contractor.

Clause 12.5 - Variation in the Bill of Quantities

This sub clause shall be applicable to Schedules of measurement Contracts. This clause shall also be applicable to item rates / Provisional Sum Schedules of Lump-Sum Contracts

The quantities of items and /or Provisional Sum, shown in different Schedules of BOQ are approximate, and liable to vary during the actual execution of the work. Some items may have to be added or deleted. The Contractor shall be bound to carry out and complete the stipulated Work as instructed by the Engineer, irrespective of the magnitude of variations including additions or deletion in the Bill of Quantities. Variations shall be paid as follows:

- i. Schedules having items rates with quantities :
 - a. At the accepted rates of the Contract for Positive variation in quantities of items to the extent of 25%. In case of variation in quantities on minus side, Contract rates will be payable at the accepted rates of the Contract for the executed quantities.
 - b. In case the Variation in individual items (except for items under Para c), d) & e) below) as stipulated above: is more than 25% on plus side, the rate for the varied quantity beyond 25% shall be negotiated between the Engineer and the Contractor and mutually agreed rates arrived at before execution of the extra quantity.
 - c. In case of earth work, the aforesaid Variation limit of 25% shall apply to the gross quantity of earth work and Variation in the quantity of individual classifications of soil will not be subject to this limit where any Variation can take place.
 - d. In case of foundation work, no Variation limit applies and Contractor shall carry out the Work, at the accepted rates of the Contract irrespective of any Variation.
 - e. Variation in the quantity of items individually costing upto 1% of total Original Contract Value or `50 lakh, whichever is less, shall be payable at the accepted rates of the Contract, till the value of such individual item on account of Variation reaches upto 2% of the total Original Contract Value or `1 crore, whichever is less. Negotiation of rates for such items shall be conducted only for the exceeded quantity beyond 2% of the Original Contract Value or `1 crore, whichever is less.
- i. Schedules having Provisional Sum (containing only rates of items but without quantities) / Items having Provisional Sum (e.g. referring to Standard Schedules of Rates etc.):
 - a. At the accepted rates of the Contract for Positive Variation in Provisional Sum to the extent of 25%. In case of Variation in Provisional Sum on minus side, Contract rates will be payable at the accepted rates of the Contract for the executed quantities.
 - b. In case the Variation in Provisional Sum as stipulated above: is more than 25% on plus side, the rate for works under item A.(ii) beyond 25% Variation in Provisional Sum shall be negotiated between the Engineer and the Contractor and mutually agreed rates arrived at, before

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its execution.

B. Deriving Rates For New Items / Negotiation

C. This Sub-clause shall be applicable to all Schedules of BOQ including Lump-Sum Schedule.

i. In case Engineer introduces an item for which the Contract does not contain any rates or prices applicable to the varied Works, the rate of such items shall be derived, wherever possible, from rate for similar items available in the Bill of Quantities of the accepted Tender. In case this is not possible, the rate may be decided on the following basis:

a. Cost of Materials at current market price, as actually utilised in the final finished Permanent Works, including a reasonable percentage for wastage and transportation.

b. Cost of enabling works if any (unless provided for separately) worked out on the above basis but with less stringent quality. Specifications minus salvage value of serviceable material released after completion of Work and cost of material released as scrap.

c. Cost of labour actually used at the site of Work at rates under Payment of Minimum Wages Act for the area of Work for each category of worker, further enhanced by a percentage of 10% of the aforesaid rates to account for labour not directly utilised at Site and other ancillary and incidental expenses on labour.

d. Hire charges for Plant & Machinery, scaffolding, shuttering, forms, etc., required to be used at the site of the work. The tools used by the various trades shall not be counted as Plant & Machinery for this purpose.

e. An amount of 20% of items B.(i) a), b), c) and d) above to allow for Contractor's overheads including water/electricity charges and labour cess etc., profits and corporate taxes etc. No such percentage shall be applicable to the estimated cost of Materials supplied free of cost to the Contractor.

f. In all cases where extra items of Work are involved, for which there are no rates in the accepted Bill of Quantities, the Contractor shall give a notice to the Engineer, of at least 7 days before the need for its execution arises.

In the event of disagreement in respect of items A (i) b), A (i) e), A (ii) b) and B (i) above, the Engineer shall fix such rates of price as are, in his opinion appropriate and shall notify the Contractor accordingly, with a copy to the Employer. Until such time as rates or prices are agreed or fixed, the Engineer shall determine provisional rates or prices to enable on-account payments to the Contractor. Alternatively, in the event of disagreement, the Contractor shall have no claim to execute extra quantities/new items and the Engineer shall be free to get such additional quantities beyond 25%/new items executed through any other Agency. However, if the Engineer or the Employer so directs the Contractor shall be bound to carry out any such additional quantities beyond the limits stated above original quantities and/or new items and the disagreement or the difference regarding rates to be paid for the same shall be settled in the manner laid down under the conditions for the settlement of dispute.

Payment in

12.6

If the Contract provides for payment of the Contract Price in more than

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**Applicable
Currencies**

one currency, and an adjustment is agreed or fixed as stated above, the amount payable in each of the applicable currencies shall be specified when the adjustment is agreed or fixed. In specifying the amount in each currency, the Contractor and the Engineer (or, failing agreement, the Engineer) shall take account of the actual or expected currency proportions of the Cost of the varied Work, without being bound by the proportions of various currencies specified for payment of the Contract Price.

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TERMINATION OF THE CONTRACT

**Notice to
Contractor**

13.1

If the Contractor fails to carry out any of his obligations, or if the Contractor is not executing the Works in accordance with the Contract, the Engineer may give notice to the Contractor requiring him to make good such failure and remedy the same within such time as the Employer / Engineer may deem to be reasonable.

**Termination of
Contract Due to
Contractor's
Default**

13.2

**Conditions
Leading to
termination of
Contract**

13.2.1

The Employer shall be entitled to terminate the Contract if the Contractor or any one of its constituents,

- a. fails to comply with a notice under Sub-clause 13.1
- b. abandons or repudiates the Contract
- c. without reasonable excuse acceptable to the Engineer, fails to commence the Works in accordance with the Contract
- d. Sub-contracts the whole of the Works or assigns the Contract without approval of the Employer
- e. becomes bankrupt or insolvent or goes into liquidation except voluntary liquidation for the purpose of amalgamation or reconstruction
- f. persistently disregards instructions of the Engineer or contravenes any provisions of the Contract, or
- g. fails to adhere to the agreed programme of work by margin of 10% of the stipulated period or 21 days, whichever is earlier, or fails to complete the Works or parts of the Works within the stipulated or extended period of completion, or is unlikely to complete the whole Work or part thereof within time because of poor record of progress; or
- h. fails to remove materials from the Site, or pull down and replace Work, after receiving notice from the Engineer to the effect that the said materials or Works have been condemned or rejected, or
- i. fails to take steps to employ competent and/or additional staff and labour, or
- j. fails to afford the Engineer or his Representative proper facilities for inspecting the Works or any part thereof, or
- k. indulges in corrupt or fraudulent practices as explained in Clause 4.33

13.2.2

In any one of these events or circumstances, the Employer may upon giving 14 days notice to the Contractor, terminate the Contract and expel the Contractor from the Site. However, in case of sub-paragraph (e) or (k), the Employer may by notice of 7 days to the Contractor, terminate the Contract immediately.

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13.2.3 For the purpose of sub-para (c) above, of this clause, reasonable excuse shall be the one, which in the opinion of the Engineer has resulted from, any circumstance which

- is beyond the Employer's or Contractor's control and
- made the failure unavoidable and it is evidenced by the Contractor to the satisfaction of the Engineer that the failure was remedied without unreasonable delay once that obstacle was out of the way.

13.2.4 In case of Sub-para(g), the Engineer at its sole discretion may terminate only part of the Contract also by taking out some part of the total scope of Work and may get it completed or arranged from any other entity through the process of Open/Limited/Single Tender or by calling quotations, to do so at the risk and cost of the Contractor.

13.2.5 The Employer's decision to terminate the Contract shall not prejudice any other rights of the Employer under the Contract.

13.2.6 On termination of Contract due to Contractor's default, the Performance Security shall be forfeited by encashing the Bank Guarantee and the balance Work shall be got done independently without risk and cost of the failed Contractor. The failed Contractor shall be debarred from participating in the Tender for executing the balance Work. If the failed Contractor is a JV/Consortium or a partnership Firm, then every member/partner of such JV/Consortium or partnership Firm shall be debarred from participating in the Tender for the balance Work either in his/her individual capacity or as a partner of any other JV/Consortium or partnership Firm.

13.2.7 The Engineer shall not make a claim under the Performance Security except for amounts to which the NMRC is entitled under the Contract (Notwithstanding and/or without prejudice to any other provisions in the Contract Agreement) in the event of:

- i. Failure by the Contractor to extend the validity of the Performance Security as described herein above, in which event the Engineer may claim the full amount of the Performance Security.
- i. Failure by the Contractor to pay NMRC any amount due, either as agreed by the Contractor or determined under any or the Clauses/Conditions of the Agreement, within 30 days of the service of notice to this effect by Engineer.
- i. The Contractor being determined or rescinded under provision of the GCC in which event, the Performance Security shall be forfeited in full and shall be absolutely at the disposal of the NMRC.

Valuation at the date of Termination

13.2.8 The Engineer shall, as soon as possible after termination under Sub-clause 13.2.1, determine and advise the Contractor of the value of the Construction and/or Manufacture Documents, Plant, Rolling Stock, Materials, Contractor's Equipment and Works and all sums then due to the Contractor as at the date of termination.

Payment after Termination

13.2.9 After termination under Sub-clause 13.2.1, the Employer shall not be liable to make any further payments to the Contractor until the costs of design, manufacture, execution, completion and remedying of any defects, damages for delay in completion (if any), and all other costs incurred by the Employer, have been established and recovered..

The Employer shall be entitled to recover from the Contractor the extra costs, if any, of completing the Works after allowing for any sum due to the Contractor under Sub-clause 13.2.8. If there are no such extra costs,

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the Employer shall pay any balance to the Contractor.

Non-exercise of power not to constitute waiver 13.2.10 Provided always that in case any of the powers conferred upon the Employer by Sub-clause 13.1 and Sub-clause 13.2.1 above, shall have become exercisable, and the same may not have been exercised, the non-exercise thereof shall not constitute waiver of any of the conditions thereof.

Default of Employer 13.3

Notice by Contractor 13.3.1 In the event of the Employer:

a. failing to pay the Contractor, without reasonable cause, the certified amount due under any certificate of the Engineer within 56 days after the expiry of the time stated in Sub-clause 11.56 within which payment has to be made, subject to any deduction that the Employer is entitled to make under the Contract, or

b. becoming bankrupt or, being a Company, going into liquidation, other than for the purpose of a scheme of reconstruction or amalgamation,

then, the Contractor may give notice requiring the Employer to remedy the default within 28 days after receipt of the notice. If the Employer fails to remedy the default or fails to propose steps reasonably acceptable to the Contractor to do so and in that case, the Contractor may terminate the Contract after issue of 14 days notice to the Employer with a copy to the Engineer. In this case, the Contractor shall be compensated as per Sub clause 13.3.4

The Engineer's decision on the certified amount payable on this account shall be final and binding.

Contractor's Entitlement to Suspend the Work 13.3.2 The Contractor may, if the Employer fails to pay the Contractor the certified amount due under any certificate of the Engineer within 56 days after the expiry of the time stated in Sub-clause 11.6, within which payment is to be made, subject to any deduction that the Employer is entitled to make under the Contract, after giving 28 days' prior notice to the Employer, with a copy to the Engineer, suspend Work or reduce the rate of progress of Work.

If the Contractor suspends Work or reduces the rate of progress of Work in accordance with the provisions of this Sub-clause and thereby suffers delay or incurs costs the Engineer shall, after due consultation with the Employer and the Contractor, determine:

a. any extension of time to which the Contractor is entitled under Sub-clause 8.4, and

b. the amount of such costs, which shall be added to the Contract Price, and shall notify the Contractor accordingly, with a copy to the Employer.

Cessation of Work by Contractor 13.3.3 After termination under Sub-clause 13.3.1, the Contractor shall:

a. cease all further Work, except for such Work as may be necessary and instructed by the Engineer for the purpose of making safe or protecting those parts of the Works already executed, and any Work required to leave the Site in a clean and safe condition,

b. hand over all Construction and/or Manufacture Documents, Plant, Rolling stock, and Materials for which the Contractor has received

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payment,

c. hand over those parts of other Works executed by the Contractor up to the date of termination, and

d. remove all Contractor's Equipment if not required by the Employer which is on the Site and repatriate all his staff and labour from the Site.

Any such termination shall be without prejudice to any other right of the Contractor under the Contract.

Payment on Termination

13.3.4

After termination under Sub-clause 13.3.1, the Employer shall return the Performance Security, if not invoked and shall pay the Contractor an amount calculated and certified in accordance with the following conditions:..

a. The value of approved materials actually brought to the site and reasonably required to execute the Works during next three months, as per approved Programme, and

b. Value of Work completed up to date by the Contractor at rates specified in the Contract, after taking into account any deductions, retentions, setoff, Damages, compensation, loss payable to Employer etc.

c. In addition, a sum not exceeding 2% (two percent) of the value of the work remaining incomplete on the date of Termination notice taking effect.

The payment as above shall be the full compensation for termination under this Clause and the Contractor shall have no claim for damages or other entitlements whether under the Contract or otherwise.

13.3.5

In case termination/foreclosure of the Contract under whatsoever circumstances, any remaining Tools, Plants, Equipments and surplus materials of Employer with Contractor will be returned to the Employer in good condition at Employer's depot at Contractor's cost. In case of the failure of the Contractor to do so, the Employer will be entitled to recover their cost from the Contractor from the amount becoming due to the Contractor or from any other money due in any other Contracts. The decision of the Engineer of the amount to be recovered will be final and full credit at rates initially charged to the Contractor shall be allowed for such materials. Similarly the Employer shall be entitled to recover the cost of the unreturned material, Plant, Equipment and Tools from the Contractor where such material have been supplied free of cost or on lease basis to the Contractor as stipulated in the Conditions of Contract.

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RISK AND RESPONSIBILITY

Indemnity

14.1

The Contractor shall indemnify and hold harmless the Employer, the Engineer, the Designated Contractors, Representatives and employees from and against all actions, suits, proceedings, claims, damages, losses, expenses and demands of every nature and description, by reasons of any act or omissions of the Contractor, his Representative or his employees in the execution of the Works, including professional services provided by the Contractor or in the guarding the same.

These indemnification obligations shall include but not be limited to claims, damages, losses, damage proceedings, charges and expenses which are attributable to:

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- a. sickness, or disease, or death of, or injury to any person; and
- b. loss of, or damage to, or destruction of any property (other than the Works) including consequential loss of use; and
- c. loss, damage or costs arising from the carriage of Plant, Rolling Stock and Materials and/or ownership or chartering of marine vessels by the Contractor, or any Sub-contractor of any tier.

The Contractor shall also indemnify and save harmless the Employer from and against all claims and proceedings on account of infringements of patents rights, design, trademark name etc as detailed out in clause 5.8.

All sums payable by way of compensation under these conditions shall be considered reasonable compensation payable to the Employer, without reference to the actual loss or damage sustained, and whether or not any damage shall have been sustained. The decision of the Engineer as to compensation claimed shall be final and binding.

Contractor's Care of the Works

14.2

The Contractor shall take full responsibility for the care of the Works, or any part thereof, including full responsibility for the care of any Work being manufactured, or stored off-Site for inclusion in the Works, or in the course of transportation to the Site, and for the care of Contractor's Equipment, Temporary Works, Plant, Rolling Stock, and any other Material, whatsoever, on the Site or delivered to or placed on the Site in connection with, or for the purpose of the Works.

The Contractor shall take this responsibility from the Commencement Date until the date of issue of the Taking Over Certificate, when responsibility shall pass to the Employer. If the Engineer issues a Taking Over Certificate for any Section or part of the Works, the Contractor shall cease to be responsible for the care of that Section or part from the date of issue of such Taking Over Certificate when responsibility shall pass to the Employer.

The Contractor shall take responsibility for the care of any outstanding Work which is required to be completed prior to the expiry of the Contract Period, until the Engineer confirms in writing that such outstanding Work has been completed.

If any loss or damage happens to the Works, any other property or person, arising from any cause other than the Employer's risks listed in Sub-clause 14.3, during the period for which the Contractor is responsible, the Contractor shall rectify such loss or damage, at his cost, so that the Works conform with the Contract or at the option of the Employer, will pay or allow to the Employer the cost of rectifying such loss or damage. Notwithstanding such loss or damage, the Contractor shall proceed with the execution of Works in all respects in accordance with the Contract and the Engineer's instructions. The Contractor shall also be liable for any loss or damage to the Works caused by any operations carried out by the Contractor after the date of issue of the Taking Over Certificate.

Employer's Risks

14.3

The Employer's risks of loss or damage to physical property in India and of death and personal injury occurring in India in consequence of the performance of obligations under the Contract are:

- a. war, hostilities (whether war be declared or not), invasion, act of foreign enemies,

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		<p>b. rebellion, revolution, insurrection, or military or usurped power, or civil war, within India,</p> <p>c. riot, commotion or disorder by persons unless solely restricted to or caused by employees of Contractor or of Sub-contractors currently or formerly engaged in the Works,</p> <p>d. Ionising radiations, or contamination by radio-activity from any nuclear fuel, or from any nuclear waste from the combustion of nuclear fuel, radio-active toxic explosive, or other hazardous properties of any explosive nuclear assembly or nuclear component of such an assembly, except to the extent to which the Contractor may be responsible for the use of any radio-active material,</p> <p>e. pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds, and</p> <p>f. use or occupation by the Employer of any part of the Works, except as may be specified in the Contract.</p>
Consequences of Employer's Risks	14.4	<p>If an Employer's risk results in loss or damage, the Contractor shall promptly notify the Engineer and shall rectify this loss or damage to the extent required by the Engineer.</p> <p>If the Contractor suffers delay and/or incurs cost from rectifying this loss or damage, the Contractor shall give notice to the Engineer and shall be entitled to claim:</p> <p>a. extension of time for any such delay, if completion is or will be delayed, under Sub-clause 8.4, and</p> <p>b. amount of such cost, amount of such cost, which shall be included in the Contract Price.</p>
Contractor's Risks	14.5	<p>The Contractor's risks are all risks other than the Employer's risks given in Sub-clause 14.3.</p>
Limitation of Liability	14.6	<p>Except as provided otherwise in these Conditions, neither Party shall be liable to the other Party for loss of use of any Works, loss of profit, loss of any Contract or any other indirect or consequential loss or damage which may be suffered by the other Party in connection with the Contract. The total liability of the Contractor to the Employer under the Contract shall not exceed the Contract Price. Except that this Sub-clause shall not limit the liability of the Contractor:</p> <p>a. under Sub-clauses 4.18, 4.19, 5.7, 8.6, and Clauses 7.10 and 7.11</p> <p>b. under any other provisions of the Contract which expressly impose a greater liability,</p> <p>c. in cases of fraud, wilful misconduct or illegal or unlawful acts, or</p> <p>d. in cases of acts or omissions of the Contractor which are contrary to the most elementary rules of diligence which a conscientious Contractor would have followed in similar circumstances.</p>
	15	INSURANCE
Professional Indemnity Insurance	15.1	<p>The Contractor shall effect and maintain Professional Indemnity Insurance, preferably in the name of NMRC, for the amount in Indian Rupees stipulated in Appendix to the Form of Tender in respect of any design of the Works to be carried out by, or on behalf of the Contractor. This insurance, which shall ensure the Contractor's liability by reason of</p>

GENERAL CONDITIONS OF CONTRACT

professional negligence and errors in the design of the Works, shall be valid from the date of commencement of Works, until 5 years after the date of issue of Performance Certificate. Alternatively the Contractor shall renew the insurance before the expiry of the Yearly Insurance in such a way that the entire validity period is covered.

The Engineer will not issue Final Payment Certificate until the Contractor has produced evidence that coverage of the Professional Indemnity Insurance has been provided for the aforesaid period.

Insurance for Works and Contractor's Equipment

15.2

The Contractor shall insure the Plant, Rolling stock, Materials and Works in the joint names of the Employer, the Contractor and Sub-contractors (wherever applicable) against all loss or damage. This insurance shall cover loss or damage from any cause other than the Employer's risks listed in Sub-clause 14.3 sub paragraphs (a), (b), (d) and (e). Such insurance shall be for a limit of not less than the full replacement cost (including profit) and shall also cover the costs of demolition and removal of debris. Such insurance shall be in such a manner that the Employer and the Contractor are covered from the commencement date until the date of issue of the Taking Over Certificate for the whole of Works. However for the Works having multiple Sections / Parts in one Contract, such insurance shall be in such a manner that the Employer and the Contractor are covered from the commencement date until the date of issue of the Taking over Certificate for respective Part of Works. The Contractor shall extend such insurance to provide cover until the date of issue of the Performance Certificate, for loss or damage for which the Contractor is liable arising from a cause occurring prior to the issue of the Taking Over Certificate, and for loss or damage occasioned by the Contractor or Sub-contractors in the course of any other operations (including Clauses 7.10, 7.11 and 10).

The Contractor shall insure the Contractor's Equipment against all risks in the joint names of the Employer, the Contractor and Sub-contractors, (wherever applicable) against all loss or damage. This insurance shall cover loss or damage from any cause other than the Employer's risks listed in Sub-clause 14.3 sub- paragraphs (a), (b), (d) and (e). Such insurance shall be for a limit of not less than the full replacement value (including delivery to Site). Such insurance shall be in such a manner that each item of equipment is insured while it is being transported to the Site and throughout the period it is on or near the Site.

Insurance against injury to Persons and Damage to Property

15.3

The Contractor shall insure against liability to third Parties in the joint names of the Employer, the Contractor and Sub-contractors, (wherever applicable) for any loss, damage, death or bodily injury which may occur to any physical property (except things insured under Sub-clause 15.2) or to any person (except persons insured under Sub-clause 15.4), which may arise out of the performance of the Contract and occurring before the issue of the Performance Certificate. Such insurance shall be at least for the amount specified in the Appendix to Form of Tender.

Insurance for Workers

15.4

The Contractor shall effect and maintain insurance against losses and claims arising from the death or injury to any person employed by the Contractor or any Sub-contractor (wherever applicable) in such a manner that the Employer and the Engineer are indemnified under the policy of insurance. For Sub-contractor's employees (wherever applicable), such insurance may be effected by the Sub- contractor, but

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GENERAL CONDITIONS OF CONTRACT

**General
Requirements for
Insurances**

15.5

the Contractor shall be responsible for compliance with this Clause.

The Contractor shall, within the respective periods stated in the Appendix to Form of Tender (calculated from the Commencement Date), submit to the Employer:

- a. evidence that the insurances described in this Clause have been effected, with an Indian Insurance Company and
- b. copies of the policies for the insurances described in Sub-clause 15.2, 15.3 and 15.4.

When each premium has been paid, the Contractor shall submit copy of receipts to the Employer. The Contractor shall also, when providing such evidence, policies and receipts to the Employer, notify the Engineer of so doing.

The Contractor shall effect all insurances for which he is responsible with insurers and in terms approved by the Employer. The Contractor would obtain waiver of right of subrogation from the insurer on the aforesaid policies of insurance. Each Policy insuring against loss or damage shall provide for payments to be made in the currencies required to rectify such loss or damage. Payments received from insurers shall be used for the rectification of such loss or damage.

The Contractor (and, if appropriate, the Employer) shall comply with the conditions stipulated in each of the Insurance Policies. The Contractor shall make no material alteration to the terms of any insurance without the prior approval of the Employer. If an insurer makes (or purports to make) any such alteration, the Contractor shall notify the Employer immediately.

If the Contractor fails to effect and keep in force any of the insurances required under the Contract, or fails to provide satisfactory evidence, policies and receipts in accordance with this Sub-clause, the Employer may, without prejudice to any other right or remedy, effect insurance for the coverage relevant to such default, and pay the premiums due. In such cases the premium paid by the Employer plus overheads (equal to 50% of the premium paid) shall be recoverable from the Contractor by the Employer, and may be deducted by the Employer from any monies due, or to become due, to the Contractor or recover the same as debt due from the Contractor. The Contractor shall not dispute the amount of premium paid by the Employer or the overhead charges thereon.

Nothing in this clause limits the obligations, liabilities or responsibilities of the Contractor or the Employer, under the other terms of the Contract or otherwise. Any amount not insured or not recovered from the insurers shall be borne by the Contractor.

The Contractor shall submit to the Engineer, the details of all claims made with the insurer and claims accepted by the insurer or any other details as required by the Engineer on monthly basis.

The Employer would be entitled to deduct from the Contract price, the premium of Insurance Policies which have not been paid or the premium of the Insurance Policies which have not been taken by the Contractor, in breach of the Contract conditions.

GENERAL CONDITIONS OF CONTRACT

16 FORCE MAJEURE

Definition of Force Majeure

- 16.1 In this Clause, "Force Majeure" " means an event beyond the control of the Employer and the Contractor, which makes it impossible or illegal for a Party to perform, including but not limited to:
- a. Act of God
 - b. war, hostilities (whether war be declared or not), invasion, act of foreign enemies, mobilization, requisition, or embargo;
 - c. rebellion, revolution, insurrection, or military or usurped power, or civil war;
 - d. contamination by radio-activity from any nuclear fuel, or from any nuclear waste from the combustion of nuclear fuel, radio-active toxic explosive, or other hazardous properties of any explosive nuclear assembly or nuclear component of such an assembly;
 - e. riot, commotion or disorder, unless solely restricted to employees of the Contractor or of his Sub-contractors currently or formerly engaged on the Works.

If a Party considers that it may be affected by Force Majeure, the party shall promptly notify the other Party and Engineer of such Force Majeure within 21 days of such occurrence. If neither Party issues any notice regarding the event within 21 days of its occurrence, the said event shall be deemed not to have occurred and the Contract shall continue to have no effect as such.

Effect of Force Majeure Event

- 16.2 Neither the Employer nor the Contractor shall be considered in default or in Contractual breach to the extent that performance of obligations is prevented by a Force Majeure event which arises after the date of Notice to Proceed. Upon the occurrence of such Force Majeure, the affected Party shall endeavour to continue to perform its obligations as far as reasonably practicable.

Contractor's Responsibility

- 16.3 If affected by such Force Majeure, the Contractor shall promptly notify the Engineer of any proposals for overcoming the consequences of the Force Majeure, including any reasonable alternative means for performance, but shall not carry out these proposals without the consent of the Engineer.

Employer's Responsibility

- 16.4 If affected by such Force Majeure, the Employer shall promptly notify the Engineer and the Contractor of any proposals for overcoming the consequences of the Force Majeure.

Payment to Contractor

- 16.5 If the Works shall suffer loss or damage due to such Force Majeure, the Contractor shall be entitled to have included, in an Interim Payment Certificate, the Cost of Work executed in accordance with the Contract.

Resumption of Work

- 16.6 The obligations under the Contract shall be resumed as soon as practicable after the event has come to an end or ceased to exist.
- In case of doubt or dispute, whether a particular occurrence should be considered an "event" as defined under this Clause, the decision of the Engineer shall be final and binding.

Works that have already been measured shall be paid for by the Employer even if the same is subsequently destroyed or damaged as a result of the event. The cost of rebuilding or replacing any Work that has been measured shall be borne by the Employer.

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GENERAL CONDITIONS OF CONTRACT

**Optional
Termination,
Payment and
Release**

16.7

Irrespective of any extension of time, if a Force Majeure occurs and its effect continues for a period of 6 months, after notice has been given under Sub-clause 16.1, either Party may give to the other party a notice of termination of the Contract which shall take effect in 28 days after the notice is given. Unless at the end of 28 days period the effect of the Force Majeure has ceased, the Contract shall terminate upon that date. Otherwise, the Contract shall remain in effect.

The Contractor shall be paid fully for the Work done under the Contract, but not for any defective Work or Work done which has been destroyed or damaged before its measurement. The Employer shall have the option to take over any Plant, Rolling Stock and Materials lying at site, at rates provided for in the Contract, failing that, as per rates, which are determined to be fair and reasonable by the Engineer.

**Release from
Performance
Under the Law**

16.8

If under the law of the Contract, the Employer and the Contractor are released from further performance, the sum payable by the Employer to the Contractor shall be the same as would have been payable under Sub-clause 16.7, if the Contract had been terminated under that Sub-clause.

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CLAIMS, DISPUTES, CONCILIATION AND ARBITRATION

**Procedure for
Claims**

17.1

Procedure for Claims

If the Contractor intends to claim any additional payment under any Clause of these Conditions or otherwise, the Contractor shall give notice to the Engineer as soon as possible and in any event within 28 days of the start of the event giving rise to the claim. The Contractor shall also submit any other notices which are required by the Contract, and supporting particulars for the claim, all as relevant to such event or circumstance.

The Contractor shall keep such contemporary records as may be necessary to substantiate any claim, either on the Site or at any other location acceptable to the Engineer. Without admitting the Employer's liability, the Engineer shall on receipt of such notice, inspect such records, monitor the record-keeping and/or may instruct the Contractor to keep further contemporary records. The Contractor shall permit the Engineer to inspect all such records, and shall (if instructed) submit copies to the Engineer.

Within 28 days of such notice, or such other time as may be agreed by the Engineer, the Contractor shall send to the Engineer a fully detailed claim which includes full supporting particulars of the basis of the claim and additional payment claimed. If the event or circumstance giving rise to the claim has a continuing effect:

- a. this fully detailed claim shall be considered as Interim;
- b. the Contractor shall send further interim claims at monthly intervals, giving the accumulated amount claimed, and such further particulars as the Engineer may reasonably require; and
- c. the Contractor shall send a final claim within 28 days after the end of the effects resulting from the event or circumstance, or within such other period as may be proposed by the Contractor and approved by the Engineer.

If the Contractor fails to comply with this Sub-clause, he shall not be entitled to claim any additional payment.

Payment for

17.2

The Contractor shall be entitled to have included in any Interim Payment

GENERAL CONDITIONS OF CONTRACT

		entitled to claim any additional payment.
Payment for Claims	17.2	The Contractor shall be entitled to have included in any Interim Payment Certificate such amount for any claim as the Engineer considers due, after taking approval from the Employer. If the particulars supplied are insufficient to substantiate the whole of the claim, the Contractor shall be entitled to payment for such part of the claim as has been substantiated.
No legal action Till Dispute Settlement Procedure is Exhausted	17.3	Any and all Disputes shall be settled in accordance with the provisions of Clause 17. No action at law concerning or arising out of any Dispute shall be commenced unless and until all applicable Dispute resolution procedures set out in Clause 17 shall have been finally exhausted in relation to that Dispute or any Dispute out of which that Dispute shall have arisen with which it may be or may have been connected.
Notice of Dispute	17.4	For the purpose of Sub-clause 17.5, a Dispute shall be deemed to arise when one Party serves on the other Party a notice in writing (hereinafter called a "Notice of Dispute") stating the nature of the Dispute provided that no such notice shall be served later than 28 days after the date of issue of Performance Certificate by the Engineer.
Two Stages for Dispute Resolution	17.5	<p>Disputes shall be settled through two stages:</p> <p>a. Conciliation procedures as established by "The Arbitration and Conciliation Act-1996" & amended by the Arbitration & Conciliation (Amendment) Act, 2019 and any statutory modification or re-enactment thereof and in accordance with this Clause. In the event, this procedure fails to resolve the Dispute then;</p> <p>b. Arbitration procedures undertaken as provided by "The Arbitration and Conciliation Act -1996" & amended by the Arbitration & Conciliation (Amendment) Act, 2019 and any statutory modification or re-enactment thereof and in accordance with this Clause.</p>
Conciliation	17.6	<p>Within 60 days of receipt of Notice of Dispute, either party shall refer the matter in dispute to Conciliation.</p> <p>Conciliation proceedings shall be initiated within 30 days of one Party inviting the other in writing to Conciliation. Conciliation shall commence when the other Party accepts in writing this invitation. If the invitation is not accepted then Conciliation shall not take place. If the Party initiating Conciliation does not receive a reply within 30 days from the date on which he sends the invitation, he may elect to treat this as a rejection of the invitation to conciliate and inform the other Party accordingly.</p> <p>The Conciliation shall be undertaken by one Conciliator selected from a panel of Conciliators maintained by the Employer. The Conciliator shall assist the Parties to reach an amicable settlement in an independent and impartial manner.</p>
Conciliation Procedure	17.7	<p>The Employer shall maintain a panel of Conciliators, who shall be from serving or retired Engineers of Government Departments, or of Public Sector Undertakings. Out of this panel, a list of three Conciliators shall be sent to the Contractor who shall choose one of them to act as Conciliator and conduct Conciliation proceedings in accordance with "The Arbitration and Conciliation Act, 1996" of India & amended by the Arbitration & Conciliation (Amendment) Act, 2019 and any statutory modification or re-enactment thereof.</p> <p>There will be no objection if Conciliator so nominated is a serving employee of NMRC who would be Deputy HOD level officer and above.</p> <p>The Employer and the Contractor shall in good faith co-operate with the</p>

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GENERAL CONDITIONS OF CONTRACT

Conciliator and, in particular, shall endeavour to comply with requests by the Conciliator to submit written materials, provide evidence and attend meetings.

Each Party may, on his own initiative or at the invitation of the Conciliator, submit to the Conciliator suggestions for the settlement of the dispute.

When it appears to the Conciliator that there exist elements of a settlement which may be acceptable to the Parties, he shall formulate the terms of a possible settlement and submit them to the Parties for their observations. After receiving the observations of the Parties, the Conciliator may reformulate the terms of a possible settlement in the light of such observations.

If the Parties reach agreement on a settlement of the dispute, they may draw up and sign a written settlement agreement. If requested by the Parties, the Conciliator may draw up, or assist the Parties in drawing up, the settlement agreement. When the Parties sign the Settlement Agreement, it shall be final and binding on the Parties and persons claiming under them respectively.

The Conciliator shall authenticate the Settlement Agreement and furnish a copy thereof to each of the Parties. As far as possible, the Conciliation proceedings should be completed within 60 days of the receipt of notice by the Conciliator.

The Parties shall not initiate, during the Conciliation proceedings, any arbitral or judicial proceedings in respect of a dispute that is the subject matter of the Conciliation proceedings.

**Termination of
Conciliation
Proceedings**

17.8

The Conciliation proceedings shall be terminated:

- a. by the signing of the Settlement Agreement by the Parties on the date of agreement; or
- b. by written declaration of the Conciliator, after consultation with the Parties, to the effect further efforts at Conciliation are no longer justified, on the date of declaration; or
- c. by a written declaration of the Parties to the Conciliator to the effect that the Conciliation proceedings are terminated, on the date of declaration; or
- d. by a written declaration of a Party to the other Party and the Conciliator, if appointed, to the effect that the Conciliation proceedings are terminated, on the date of declaration.
- e. Upon termination of the Conciliation proceedings, the Conciliator shall fix the costs of the Conciliation and give written notice thereof to the Parties. The costs shall be borne equally by the Parties unless Settlement Agreement provides for a different apportionment. All other expenses incurred by a Party shall be borne by that Party.

Arbitration

17.9

If the efforts to resolve all or any of the disputes through Conciliation fails, then such disputes or differences, whatsoever arising between the Parties, arising out of touching or relating to construction/ manufacture, measuring operation or effect of the Contract or the breach thereof shall be referred to Arbitration in accordance with the following provisions:

- a. Only such dispute(s) or difference(s) in respect of which notice has been made under Clause 17.1 but could not be settled through Conciliation, together with counter claims or set off, given by the Employer, shall be referred to Arbitration. Other matters shall not be included in the reference.
- b. The Arbitration proceedings shall be assumed to have

GENERAL CONDITIONS OF CONTRACT

NOIDA(MD/NMRC).

c. The disputes so referred to Arbitration shall be settled in accordance with the Indian Arbitration & Conciliation Act, 1996 & amended by the Arbitration & Conciliation (Amendment) Act, 2019 and any statutory modification or re-enactment thereof.

Further, it is agreed between the Parties as under:

17.9.1 Number of Arbitrators: The Arbitral Tribunal shall consist of:

- i. Sole Arbitrator in cases where the total value of all claims in question added together does not exceed `2.00 crores;
- ii. 3 (Three) Arbitrators in all other cases.

17.9.2 Procedure for Appointment of Arbitrators: The Arbitrators shall be appointed as per following procedure:

i. In case of Sole Arbitrator: Within 60 days from the day when a written and valid demand for Arbitration is received by MD/NMRC, the Employer will forward a panel of 03 names to the Contractor. The Contractor shall have to choose one Arbitrator from the panel of three, to be appointed as Sole Arbitrator within 30 days of dispatch of the request by the Employer. In case the Contractor fails to choose one Arbitrator within 30 days of dispatch of the request of the Employer then MD/NMRC shall appoint any one Arbitrator from the panel of 03 Arbitrators, as sole Arbitrator.

ii. In case of 3 Arbitrators:

a. Within 60 days from the day when a written and valid demand for Arbitration is received by MD/NMRC, the Employer will forward a panel of 5 names to the Contractor. The Contractor will then give his consent for any one name out of the panel to be appointed as one of the Arbitrators within 30 days of dispatch of the request by the Employer.

b. Employer will decide the second Arbitrator. MD/NMRC shall appoint the two Arbitrators, including the name of one Arbitrator for whom consent was given by the Contractor, within 30 days from the receipt of the consent for one name of the Arbitrator from the Contractor. In case the Contractor fails to give his consent within 30 days of dispatch of the request of the Employer then MD/NMRC shall nominate both the Arbitrators from the panel.

c. The third Arbitrator shall be chosen by the two Arbitrators so appointed by the Parties out of the panel of 05 Arbitrators provided to Contractor or from the larger panel of Arbitrators to be provided to them by Employer at the request of two appointed Arbitrators (if so desired by them) and who shall act as Presiding Arbitrator. In case of failure of the two appointed Arbitrators to reach upon consensus within a period of 30 days from their appointment date, then, upon the request of either or both Parties, the Presiding Arbitrator shall be appointed by the Managing Director / NMRC, Noida.

d. If one or more of the Arbitrators appointed as above refuses to act as Arbitrator, withdraws from his office as Arbitrator, or vacates his/their office/offices or is/are unable or unwilling to perform his functions as Arbitrator for any reason whatsoever or dies or in the opinion of the MD/NMRC fails to act without undue delay, the MD/NMRC shall appoint new Arbitrator /Arbitrators to act in his/their place except in case of new Presiding Arbitrator who shall be chosen following the same procedure as mentioned in para (ii)(c) above. Such re-constituted Tribunal may, at its

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discretion, proceed with the reference from the stage at which it was left by the previous Arbitrator(s).

e. The Employer at the time of offering the panel of Arbitrator(s) to be appointed as Arbitrator shall also supply the information with regard to the qualifications of the said Arbitrators nominated in the panel along with their professional experience, phone nos. and addresses to the Contractor.

- 17.9.3 Qualification and Experience of Arbitrators (to be appointed as per Sub-clause 17.9.2 above): The Arbitrators to be appointed shall have minimum qualification and experience as under:

Arbitrator shall be;

a Working / Retired Officer (not below E-8 grade in a PSU with which NMRC has no business relationship) of any discipline of Engineering or Accounts / Finance department, having experience in Contract Management of Construction Contracts; or a Retired Officer (retired not below the SAG level in Railways) of any Engineering Services of Indian Railways or Indian Railway Accounts Service, having experience in Contract Management of Construction Contracts; or a Retired Officer who should have retired more than 3 years previously from the date of appointment as Arbitrator (retired not below E-8 grade in NMRC or a PSU with which NMRC has a business relationship) of any Engineering discipline or Accounts / Finance department, having experience in Contract Management of Construction Contracts or retired judge of any High Court or Supreme Court of India or reputed Chartered Accountant & should be member of ICAI, New Delhi. No person other than the persons appointed as per above procedure and having above qualification and experience shall act as Arbitrator.

- 17.9.4 No new claim shall be added during proceedings by either Party. However, a Party may amend or supplement the original claim or defence thereof during the course of Arbitration proceedings subject to acceptance by Tribunal including having due regard to the delay in making it.

- 17.9.5 Neither Party shall be limited in the proceedings before such Arbitrator(s) to the evidence nor did arguments put before the Engineer for the purpose of obtaining his decision. No decision given by the Engineer in accordance with the foregoing provisions shall disqualify him from being called as a witness and giving evidence before the Arbitrator(s) on any matter, whatsoever, relevant to dispute or difference referred to Arbitrator/s. Neither Party shall be limited in the proceedings before such Arbitrators to the evidence nor did arguments previously put before during settlement through Conciliation proceedings.

- 17.9.6 It is agreed by both the Parties that in the cases where Arbitral Tribunal is consist of Sole Arbitrator, their disputes shall be resolved by fast track procedure specified in sub-section (3) of 29B of the Arbitration and Conciliation (Amendment) Act, 2019 or as amended up to date.

- 17.9.7 If the Contractor(s) does/do not prefer his/their specific and final claims in writing, within a period of 90 days of receiving the intimation from the Employer/Engineer that the final bill is ready for signature of the Contractor(s), he/they will be deemed to have waived his/their claim(s) and the Employer shall be discharged and released of all liabilities under the Contract in respect of these claims.

- 17.9.8 Arbitration proceedings shall be held at District GautamBudhNagar, Uttar Pradesh, India and the language of the Arbitration proceedings and that

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- of all documents and communications between the Parties shall be in English.
- 17.9.9 The Arbitral Tribunal should record day to day proceedings. The proceedings shall normally be conducted on the basis of documents and written statements. All Arbitration awards shall be in writing and shall state item wise, the sum and detailed reasons upon which it is based. A model Time Schedule for conduct of Arbitration proceedings in a period of 180 days / 365 days will be made available to Arbitral Tribunal for their guidance. Both the Parties should endeavor to adhere to time schedule for early finalization of Award.
- 17.9.10 The award of the Sole Arbitrator or the award by majority of three Arbitrators as the case may be shall be binding on all Parties. Any ruling on award shall be made by a majority of members of Tribunal. In the absence of such a majority, the views of the Presiding Arbitrator shall prevail.
- 17.9.11 A Party may apply for correction of any computational errors, any typographical or clerical errors or any other error of similar nature occurring in the award of a Tribunal and interpretation of specific point of award to Tribunal within 60 days 30 days of the receipt of award.
- 17.9.12 A Party may apply to Tribunal within 60 days 30 days of receipt of award to make an additional award as to claims presented in the Arbitral proceedings but omitted from the Arbitral award.
- Interest on Arbitration Award** 17.10 Where the Arbitral award is for the payment of money, no interest shall be payable on whole or any part of the money for any period, till the date on which the award is made.
- Cost of Conciliation/ Arbitration** 17.11 The fees and other charges of the Conciliator / Arbitrators shall be as per the scales fixed by the Employer from time to time irrespective of the fact whether the Arbitrator(s) is / are appointed by the Employer or by the Court of law unless specifically directed by Hon'ble Court otherwise on the matter, and shall be shared equally by the Employer and the Contractor. However, the expenses incurred by each Party in connection with the preparation, presentation will be borne by itself.
- Jurisdiction of Courts** 17.12 Where recourse to a Court is to be made in respect of any matter, dispute, issue arising out of or under the Contract or connected with the Contract the Appropriate court at District Gautam Budh Nagar, Uttar Pradesh shall have the exclusive jurisdiction to try all disputes issues, dispute arising out of or under the Contract or connected with the Contract between the Parties.
- Suspension of Work on Account of Arbitration** 17.13 The reference to Conciliation / Arbitration shall proceed notwithstanding that the Works shall not then be or be alleged to be complete, provided always that the obligations of the Employer, Engineer and the Contractor shall not be altered by reasons of Arbitration being conducted during the progress of the Works. Neither Party shall be entitled to suspend the Work or part of the Work to which the dispute relates on account of Arbitration and payments to the Contractor shall continue to be made in terms of the Contract.
- 18 **SERVICE OF NOTICES**
- Notice to Contractor** 18.1 a. All notices to the Contractor shall be served by post or telex or telefax or e-mail or by hand to the Contractor or his authorized Representatives. In case of notices delivered by post, they will be deemed to have been delivered after 7 days of dispatch.
- b. The Contractor shall, on award of the Contract, furnish to the

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		Engineer, the name, designation, address and telephone, telex and telefax numbers and e-mail address of his representative referred to in Clause 4.3.
Notice to Employer and Engineer	18.2	All notices to the Employer or Engineer shall be served by post or telex or telefax, or by e-mail or by delivering by hand to the address nominated for the purpose.
Change of Address	18.3	Parties to the Contract may change the nominatedtheir address by Employer with a notice to all concerned.



NOIDA METRO RAIL CORPORATION LTD.

(A joint venture of Govt. of India and Govt. of U.P.)

CONDITIONS OF CONTRACT ON SAFETY, HEALTH AND ENVIRONMENT MANAGEMENT (July 2018)

NOIDA METRO RAIL CORPORATION LTD.

Block – III, 3rd Floor, Ganga Shopping Complex,

Sector-29, Noida – 201 301,

District Gautam Budh Nagar, Uttar Pradesh, India

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Part – I: Safety Health & Environment Management

1. General

1.1. Scope

This document defines the principal requirements of the Employer on Safety, Health & Environment associated with the contracts to be practiced in Housekeeping works of O&M wing.

1.2. Definition / languages

In this document:

- a. The use of 'shall' indicates a mandatory requirement.
- b. The use of 'should' indicates a guideline that is strongly recommended.
- c. The use of 'may' indicates a guideline that is to be considered.
- d. 'S & H' means Safety and Health.
- e. Employer means Noida Metro Rail Corporation Ltd., (NMRC).
- f. BOCWA means Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996
- g. BOCWR means Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Central Rules, 1998
- h. DG means Director General of Ministry of Labour, Govt. of India
- i. CIIBC means Chief Inspector of Inspection of Building and Other construction

1.3. Application of this document

This document applies to all aspects of the contractor's scope of work, including all aspects conducted by sub-contractors and all other agencies. There shall be no activity associated to the contract, which is exempted from the purview of this document.

1.4. Purpose of this document

The objective of these guidelines is to ensure that adequate precautions are taken to avoid accidents, occupational illness and harmful effects on the environment during housekeeping work.

2. 'SHE' Targets and Goals

The SHE targets, goals and aim for the Works are to achieve:

- a. Zero total recordable injuries.
- b. Zero reportable environmental incidents
- c. All personnel inducted in accordance with the approved contractor SHE plan.
- d. Total compliance of conducting inspections and audits as per approved SHE plan
- e. 100% incident recording and reporting
- f. 100% adherence of usage of appropriate PPEs at work.
- g. Executing housekeeping work with least disturbance to the environment, adjoining road users and traffic

3. Compliance

3.1. NMRC's Safety and Health Policy and Management Systems

The Housekeeping works shall be undertaken in accordance with NMRC's Safety and Health Policy and Management Systems as amended from time to time provided in Safety and Health Manual.

3.2. Indian statutory requirements

Contractor shall develop thorough understanding about Building and Other construction Workers (Regulation of Employment and Conditions of Service) Act 1996, Central Rules 1998, Building and Other construction workers Welfare Cess Act, 1996 and Central Rules, 1998 and Uttar Pradesh Building Workers' Welfare Board Rules, not only to satisfy the Inspectors' perspective but the use of legislation as the strong tool for effective SHE management at work place work places. Contractor is strongly advised to practice the principle of voluntary compliance.

4. ID Card and first day at work; SHE orientation training

Identity card to each housekeeping staff shall be issued by the Chief Security Commissioner office of NMRC on payment of requisite fee for police verification and cost of card. The contractor should submit application for this in the prescribed format clearly providing basic details affixing photographs and finger prints of the concerned staff. In the absence of valid identity card, the housekeeping staff shall not be permitted to enter into the station premises.

The Contractor shall ensure that all personnel working at the housekeeping work places receive an induction Safety and Health training explaining the nature of the work, the hazards that may be encountered during the work place work and the particular hazards attached to their own function within the operation.

5. Safety and Health Training

Team leader, Manager and supervisors employed for cleaning and housekeeping works should be trained and certified by BICS (British Institute of Cleaning Science, Gurgaon) or Forbes Pro Academy of Eureka Forbes. They shall in turn train their other Housekeeping Personnel under them. Certificate of training of Team Leader, Manager and Supervisor should be produced before start of work.

On-the spot practical skill development training on height safety shall also be conducted to all foremen/ workmen who were associated to the concerned jobs.

6. Safety and Health Inspection

The contractor shall prepare required inspection checklist for all activity operations and equipment. Checklists will be prepared based on the Indian standards, rules and regulations and Employer's requirements.

All records will be properly kept and filed for record purpose.

7. Safety Communication

The contractor shall take every effort to communicate the Safety and Occupational health management measures through posters campaigns /billboards /banners /glow signs being displayed around the housekeeping work places as part of the effort to raise safety awareness amongst the work force. Posters should be in Hindi, English and other suitable language as deemed appropriate.

8. Accident reporting and investigation

- 8.1. Reporting to Employer**
- All accidents and dangerous occurrences shall immediately be informed verbally to the employer. Reports of all accidents (fatal / injury) and dangerous occurrences shall also be sent within 24 hours as per format provided.
- No accident/ dangerous occurrence is exempted from reporting to the employer. Any wilful delay in verbal and written reporting to the Employer shall be penalised.
- 8.2. Reporting to Govt. organisations**
- In addition to the above verbal and written reporting to the Employer, a notice of any accident to a worker at the building or work place that causes loss of life; or disables a worker from working for a period of 48 hours or more immediately following the accident;
- shall forthwith be sent by telephone, fax, email or similar other means including special messenger within 24 hours in case of fatal accidents and not later than 72 hours in case of other accidents to:
- Regional Labour Commissioner (central), wherein the contractor has registered the firm/work
 - the board with which the worker involved was registered as a beneficiary;
 - Director General and
 - the next of kin or other relative of the worker involved in the accident;
- 8.3. Notice of Accident**
- Further, notice of accident shall be sent in respect of an accident which causes loss of life; or disables the injured worker from work for more 10 days to
- the officer-in-charge of the nearest police station;
 - the District Magistrate or, if the District Magistrate by order so desires, to
 - the Sub-Divisional Magistrate
- 8.4. Notice of death**
- Where any accident causing disablement that subsequently results in death, notice in writing of such death, shall be sent to the authorities mentioned above as soon as possible within 24 hrs and maximum 72 hours of such death.
- 8.5. Reporting of dangerous occurrences**
- All cases of dangerous occurrences shall be reported to the Inspector having jurisdiction, whether or not any disablement or death caused to the worker. The same shall also be immediately reported to the employer.
- 8.6. Accident investigation**
- Investigations should be conducted in an open and positive atmosphere that encourages the witnesses to talk freely. The primary objective is to ascertain the facts with a view to prevent future and possibly more serious occurrences.
- 8.7. Employers' independent**
- In case of fatal / dangerous occurrence the Employer shall also conduct independent investigation. Contractor and his staff shall extend

**incident
investigation**

necessary co-operation and testify about the accident.

9. Emergency preparedness plan

- 9.1.** The Contractor shall prepare an Emergency Response Plan for all work places. Arrangements shall be made for emergency medical treatment and evacuation of the victim in the event of an accident or dangerous incident occurring, the chain of command and the responsible persons of the contractor with their telephone numbers and addresses for quick communication shall be adequately publicized and conspicuously displayed in the workplace.
- 9.2.** Contractors shall require to tie-up with the hospitals located in the neighbourhood for attending to the casualties promptly.
- 9.3.** Contractor shall participate in on-work-place emergency mock drill for all his housekeeping staff along with Mock drill being conducted by NMRC.

Part – II: Safety

10. Housekeeping

- a. Contractor shall understand and accept that improper housekeeping is the primary hazard in any work place and ensure that a high degree of housekeeping is always maintained.
- b. General Housekeeping shall be carried out by the contractor and ensured at all times at Work place, Stores and Offices.
- c. All stairways, passageways and gangways shall be maintained without any blockages or obstructions. All emergency exits passageways, exits fire doors, break glass alarm points, firefighting equipment, first aid stations, and other emergency stations shall be kept clean, unobstructed and in good working order.
- d. Water logging on work places shall not be allowed.
- e. Proper and safe stacking of material needs to be ensured.
- f. All wooden scrap and other combustible packing materials shall be removed from work place to identified location(s).

Do's and Don'ts for Housekeeping Staff

Do's

- i. In case of fire / anything unusual on electric traction equipment or wires, inform the station controller/Manager.
- ii. Extinguish fire by special extinguishers (carbon tetrachloride or carbon dioxide type, if available).
- iii. Ensure no water jet to be directed at the fire under any circumstances.
- iv. Before taking up the work on a line running parallel to 25 KV AC lines, the line shall be earthed on both sides. Ensure that the distance between the two earths used for protection does not exceed 1km.
- v. Keep clear of the track and avoid contact with the rails when electric train within 250m.
- vi. Special care should be taken to carry long pipes, poles or ladders so that it should not come in contact with or within 2 meters of live OHE.
- vii. Cleaning work other than that of surface (i.e. of beam, pillars etc.) should be done during block period only.
- viii. Whenever washing or cleaning using water jets is done, take appropriate power block.
- ix. Cases of electric shock arising out of contact with 25 KV A.C traction equipment shall be reported immediately to TPC.

Don'ts

- i. Do not approach within 2 meters of any traction wires or live EHV equipment.
- ii. Do not work on or near traction wires or any live equipment unless they are made dead, earthed and shut down notices/ permit to work obtained.
- iii. Do not enter any switching station or remote control centre unless specially permitted.
- iv. Do not touch a person in contact with live traction wires. Remove body only after power supply is switched off & earthed.
- v. Do not touch any traction wire hanging from the mast or fallen on the ground and do not allow anyone else to touch it.
- vi. Cleaning work with conducting materials like Aluminum/ Steel rods

should be avoided at all times when power block is not availed.

- vii. Do not lift or raise your tools towards traction wires.
- viii. Do not damage the plinth continuity, connection to BEC, OPC and handrail continuity.
- ix. Do not use steel tape or metallic tape or tape with woven metal reinforcement in electrified area.
- x. Do not forget to give artificial respiration to the victim as per the prescribed procedure laid down at shock treatment charts.
- xi. Metallic telescopic rods are prohibited for use in the NMRC station.
- xii. Do not throw garbage in haste. Dispose it properly at designated place.

11. Working at Height

The contractor shall ensure that work at height is

- a. properly planned for any emergencies and rescue
- b. appropriately supervised; and
- c. carried out in a manner, which is reasonably practicable safe.

11.1. Falling objects

- a. The contractor shall, where necessary to prevent injury to any person, take suitable and sufficient steps to prevent, so far as is reasonably practicable, the fall of any material or object.
- b. Every contractor shall take suitable and sufficient steps to prevent any person being struck by any falling material or object which is liable to cause personal injury.
- c. The contractor shall ensure that no material or object is thrown or tipped from height in circumstances where it is liable to cause injury to any person.
- d. Every contractor shall ensure that, every workplace where chances of fall of material or other risk exist, shall be properly barricaded or provided with suitable safety net as fall catch arrestors etc.

11.2. Danger areas

Every contractor shall ensure that

- a. where a workplace contains an area in which, owing to the nature of the work, there is a risk of any person at work
 - i. falling a distance; or
 - ii. being struck by a falling object

which is liable to cause personal injury, the workplace be so far as is reasonably practicable, equipped with devices preventing unauthorised persons from entering such area; and such area is clearly indicated

11.3. Inspection of work equipment

The contractor shall ensure that, all work equipment used at work place and exposed to conditions causing deterioration shall be inspected regularly and recorded.

11.4. Requirements for all Working Platforms

Every contractor shall ensure that whenever necessary proper, safe and adequate to the working requirement, working platforms is provided.

11.5. Requirements for fall protection

Every contractor shall ensure that fall protection measures are provided for safe means of access as well as safe working

**11.6. Requirements
for Ladders**

Every contractor shall ensure that a ladder is used for work at height only if a risk assessment has demonstrated that the use of more suitable work equipment is not justified because of the low risk.

- a. Only metal ladders shall be allowed. Bamboo ladders are prohibited
- b. Any surface upon which a ladder rests shall be stable, firm, of sufficient strength and of suitable composition safely to support the ladder so that its rungs or steps remain horizontal, and any loading intended to be placed on it.
- c. A ladder shall be so positioned as to ensure its stability during use.
- d. A portable ladder shall be prevented from slipping during use by –
 - e. a. securing the stiles at or near their upper or lower ends;
 - f. b. an effective anti-slip or other effective stability device; or
 - g. c. any other arrangement of equivalent effectiveness
- h. A ladder used for access shall be long enough to protrude sufficiently above the place of landing to which it provides access unless other measures have been taken to ensure a firm handhold.
- i. No interlocking or extension ladder shall be used unless its sections are prevented from moving relative to each other while in use.
- j. A mobile ladder shall be prevented from moving before it is stepped on.
- k. Where a ladder or run of ladders raises a vertical distance of 9 metres or more above its base, there shall, where reasonably practicable, be provided at suitable intervals sufficient safe landing areas or rest platforms.
- l. Every ladder shall be used in such a way that
 - i. a secure handhold and secure support are always available to the user; and
 - ii. the user can maintain a safe handhold when carrying a load unless, in the case of a step ladder, the maintenance of a handhold is not practicable when a load is carried, and a risk assessment has demonstrated that the use of a stepladder is justified because of
 - iii. the low risk; and
 - iv. the short duration of use.

**12. Slipping,
Tripping,
Cutting and
Falling
Hazards**

- a. All places should be free from dust, debris or similar materials. Sharp projections or any protruding nails or similar objects shall be suitably guarded or shall even be avoided to make the place safe to work.
- b. Open side or opening where worker, equipment, vehicle or lifting appliance may fall at a building or outside shall be guarded suitably except in places of free access by reasons of nature of work.
- c. Suitable safety net shall be provided at places of material / man falling is possible in accordance with national standards.

**13. Work place
machinery**

Every work place equipment shall be in sound mechanical working condition and certified by either competent person under Factories Act or manufacturers' warranty in case of brand new equipments or authorized persons / firms approved by Employer before induction to any work place.

14. Machine and General Area Guarding

The contractor shall ensure at the work place all dangerous and moving parts of housekeeping machines are securely fenced or legged. The fencing of dangerous part of machinery is not removed while such machinery is in motion or in use.

15. Manual lifting and carrying of excessive weight

The contractor shall ensure at his work place no housekeeping staff lifts by hand or carries overhead or over his back or shoulders any material, article, tool or appliances exceeding in weight as said below, unless aided by another housekeeping staff or device.

Person	Maximum weight in kg
Adult man	55
Adult woman	30

16. Work place Electricity

- a. Every contractor shall ensure safe usage practices of power supply as well as safe electrical equipments fitted with protection devices.
- b. Cables shall be selected after full consideration of the condition to which they shall be exposed and the duties for which they are required.
- c. The contractor shall ensure plugs, socket-outlets, and couplers available in the work place as per IS/applicable standard.
- d. Every joint and connection in a system shall be mechanically and electrically suitable for use to prevent danger. Proper cable connectors as per standards shall only be used to connect cables.
- e. No loose connections or tapped joints shall be allowed anywhere in the work place, office area, stores and other areas.

17. Work on or near live conductors

- a. For working near OHE & other Electrical installation, the rules/measures provided in the Safety Circular – 2 of O&M wing shall be followed.
- b. No person shall be engaged in any work activity on or so near any live conductor (other than one suitably covered with insulating material so as to prevent danger) that danger may arise unless-
 - a. Suitable precautions (including where necessary the provision of suitable protective equipment) are taken to prevent injury.

17.1. Inspection and Maintenance

All electrical equipment should be permanently numbered and a record kept of the date of issue, date of last inspection and recommended inspection period.

18. Hand Tools and Power Tools

- a. The contractor is wholly responsible for the safe condition of Housekeeping plant and equipment used by his employees and that of his sub-contractors.
- b. Use of short / damaged hand tools shall be avoided and the contractor shall ensure all his hand tools used at his work place are safe to work with or stored and shall also train his employees (including his sub-contractors) for proper use thereby.
- c. All hand tools and power tools shall be duly inspected before use for safe operation.
- d. The contractor shall ensure that power tools (electric) are properly grounded or / and double insulated.

19. Fire prevention, protection and fighting system

- a. The contractor shall ensure that storage area is provided with fire extinguishing equipment sufficient to extinguish any small fire at work place.
- b. Recharging of fire extinguishers and their proper maintenance should be ensured and as a minimum should meet Indian National Standards.
- c. Combustible scrap and other work place debris should be disposed off on a regular basis.

20. Corrosive substances

Corrosive substances including alkalis and acids shall be stored and used by a person dealing with such substances at a building / work place in a manner that it does not endanger the worker and suitable PPE shall be provided by the contractor to the worker during such handling and work. In case of spillage of such substances on worker, the contractor shall take immediate remedial measures.

21. Work Permit system

The Contractor's site staff shall abide by Work Permit system of NMRC, used to control certain types of work that are potentially hazardous.

A permit is needed when work place work can only be carried out if normal safeguards are dropped or when new hazards are introduced by the work. Examples of high-risk activities include but are not limited to:

- a. Entry into confined spaces
- b. Work in close proximity to overhead power lines and telecommunication cables.
- c. Work with electrical equipment and operations closer to live power line.
- d. Working on track & operation rooms.

A Work Permit authorisation form shall be completed with the maximum duration period not exceeding one shift.

A copy of each Permit to Work shall be displayed, during its validity, in a conspicuous location in close proximity to the actual works location to which it applies.

22. Work to adjacent track

Whenever work is to be conducted in close proximity to the live track then the following measures shall need to be addressed:

- a. The rules/measures provided in the Safety Circular – 2 of O&M manual shall be followed.
- b. No persons are allowed to work onto the track unless specific authority has been given by NMRC. Adequate protection in accordance with the O&M requirements shall be followed.
- c. All persons shall wear high visibility clothing at all times.
- d. Any induction training requirements of the Track shall be strictly observed.

23. Personal Protective Equipment (PPEs)

The contractor shall provide required PPEs to workmen to protect against safety and / or health hazards. Primarily PPEs are required for the following protection:

- a. A. Height Work
 - i. Safety Helmet

- ii. Full body Safety harness
- b. B. Electrical Operation Room
 - i. Shoes with insulated sole/Rubber Gum boots
 - ii. Electrically insulated Gloves
- c. C. Chemical Handling
 - i. Eye protection i.e. Safety goggles
 - ii. Chemical Gloves for hand protection

Part – III: Occupational Health and Welfare

24. Physical fitness of workmen

The contractor shall ensure that his employees/workmen subject themselves to such medical examination as required under the law or under the contract provision and keep a record of the same.

The contractor shall not permit any employee/workmen to enter the work area under the influence of alcohol or any drugs.

25. Medical Facilities

25.1. Medical Examination

As per BOCW relevant rules, the contractor shall arrange a medical examination of all his employees including his sub-contractor employees employed before employing, after illness or injury, if it appears that the illness or injury might have affected his fitness.

25.2. Ambulance van

The contractor shall ensure that an arrangement is made with a nearby hospital for providing such ambulance van for transportation of serious cases of accident or sickness of workers to hospital promptly.

25.3. First-aid boxes

The contractor shall ensure at a work place one First-aid box provided and maintained for providing First-aid to the workers. Every First-aid box is distinctly marked “First aid” and is equipped with the articles specified in BOCWR.

26. Welfare measures for workers

26.1. Toilets and Urinals

Generally, facilities are available at Metro Station, Depots & other work places and maintained by agencies engaged by NMRC. Contractors workers may utilised these facilities on payment basis.

26.2. Drinking water

As per relevant section of BOCWA the contractor shall make in every work place, effective arrangements to provide sufficient supply of wholesome drinking water with minimum quantity of 5 litres per workman per day. Quality of the drinking water shall conform to the requirements of national standards on Public Health.

Part – IV: Penalty and Awards

27. Charges to be recovered from contractor for unsafe act or condition

NMRC has built an image of safety conscious organisation meticulously over a long period of operation. Any reportable accident (fatality / injury) results in loss of life and/or property damage. These accidents not only result in loss of life but also damage the reputation of NMRC. Most of the accidents are avoidable and caused preliminary due to contractors' negligence. Hence NMRC shall recover the cost of damages from the contractors for every reportable incident (fatality / injury).

In addition, sometimes our activities are exposed to public scrutiny as the work is executed on public places. Any unsafe act / unsafe condition observed by public further damage our reputation. Without limiting to the unsafe acts and or conditions, the Employer shall have the right to deduct charges for any other unsafe act and or condition depending upon the gravity of the situation on a case-to-case basis.

28. Stoppage of unsafe activity by contractor

- a. The Employer shall have the right to stop the work at his sole discretion, if in his opinion the work is being carried out in such a way that it may cause accidents and endanger the safety of the persons and / or property, and / or equipment at specific work place.
- b. The contractor shall not proceed with the work until he has complied with each direction to the satisfaction of Employer.
- c. The Contractor shall not be entitled for any damages / compensation for stoppage of work, due to safety reasons.

29. Awards

The following categories will be considered for awards as per the scheme in practice of Employer

- a. Zero fatality contracts.
- b. 100% adherence to voluntary reporting of all accidents throughout the currency of contract.
- c. Safest Contractor of the year.

Part – V: Environment Management

30. Indian statutory requirements

The Housekeeping works shall be undertaken in accordance with all applicable legislation and Indian statutory requirements listed below but not limiting to:

- a. Environment Protection Act, 1986 and Rules 1986
- b. Air (Prevention and control of Pollution) Act, 1981
- c. Water (Prevention and Control of Pollution) Act, 1974
- d. The Noise Pollution (Regulation & Control) Rules, 2000
- e. Notification on Control of Noise from Diesel Generator (DG) sets, 2002
- f. Solid Waste Management Rules, 2016
- g. Hazardous and Other Wastes (Management and Trans boundary Movement) Rules, 2016
- h. e-waste (Management) Rules, 2016
- i. Batteries (Management & Handling) Rules, 2001 and amendment 2010
- j. Plastic Waste Management Rules, 2016
- k. Bio-Medical Waste Management Rules, 2016

31. Procurement of materials

Cleaning products shall be bio-based, non-toxic, fragrance free, have a pH between 4 and 9, and have low levels of volatile organic compounds (VOCs). Products may not contain: carcinogens, mutagens, teratogens, ozone-depleting compounds, greenhouse gasses, dyes, petroleum distillates, endocrine modifiers, alkyl phenyl ethoxylates, dibutyl phthalate, heavy metals, more than 0.5% phosphorous, chlorinated solvents, or contribute to petrochemical smog or poor indoor air quality.

In addition, concentrated products are used and properly diluted to reduce impacts to human health and the environment.

Re-usable/washable rags and mops should be used, which are effective and do not shed fibers.

Products used should degrade rapidly, should not harm human health, should not pollute the air or water supply, and should present an economically sound cost of usage.

32. Waste Management

Collection, handling, segregation, transportation and disposal of waste may cause environmental degradation and nuisance. To prevent it, waste has to be handled and disposed properly. As such, collection, handling, segregation, transportation and disposal of all waste shall be strictly managed by the contractor.

Training of staff should be undertaken by the contractor in order to increase awareness of waste management issues.

Information regarding waste segregation shall be posted at appropriate locations around the office.

The contractor shall ensure regular maintenance and cleaning of the waste storage areas.

No lubricants and hazardous waste shall be allowed to discharge into water courses. Burning of any type of waste and illegal dumping of waste is strictly prohibited.

33. Collection

The contractor shall provide sufficient number of bins to collect the waste items. Hazardous waste, used batteries, bio-medical waste, recyclable paper waste, biodegradable and general refuse shall be collected in separate bins to ensure 100% segregation at source itself.

The collection bins shall be as per applicable legal requirement. All waste collections bins shall be of appropriate size with a closed lid. Each bin shall be clearly labelled both with colour code system and labelled in Hindi and English.

Bio-medical waste shall be collected on daily basis.

34. Segregation

The contractor shall collect general refuse on daily basis and shall be segregated into bio-degradable and recyclable. These wastes should be disposed on daily basis through local municipal agency.

35. Storage and disposal Mechanism

The contractor shall take all necessary permits or fulfil all necessary legal requirements for storage of all waste items.

Hazardous waste and batteries shall be stored on an impermeable surface with containment bunding to retain leaks, spills and ruptures.

Storage period and disposal mechanism for different waste stream is tabulated below:

S. No.	Waste Stream	Maximum storage period at site	Disposal Mechanism
1.	General Refuse	48 hours	Through Municipal agency
2.	Recyclable paper waste	3 months	Through paper recycling agency appointed by the Employer
3.	Bio-Medical Waste	48 hours	Authorised agency appointed by the employer
4.	Used Batteries	As per law	Authorised agency appointed by the employer
5.	Hazardous Waste	As per law	Authorised agency appointed by the employer
6.	e-Waste	As per law	Authorised agency appointed by the employer

Appendix– 1: Topics for First Day at Work SHE Orientation Training of Workmen

- | | |
|--|---|
| 36. Hazard Identification Procedure | Hazards on work place: <ul style="list-style-type: none">a. Electricityb. Machineryc. Handling materialsd. Work place housekeepinge. Work at Heightf. Fire |
| 37. Personal Protective Equipment | <ul style="list-style-type: none">a. What is available?b. How to obtain it?c. Correct use and care. |
| 38. Health | <ul style="list-style-type: none">a. Work place welfare facilitiesb. Potential health hazardsc. First Aid/CPR |
| 39. Duties of the contractor | <ul style="list-style-type: none">a. Brief outline of the responsibilities of the Contractor by lawb. Details of Contractor's accident prevention policyc. Building and other construction worker Welfare Law |
| 40. Employee's Duties | <ul style="list-style-type: none">d. Brief outline of responsibilities of employee under lawe. Explanation of how new employees fit into the Contractor's plan for accident prevention. (induction and orientation). |

Appendix – 2: ID Card Format

Dimensions (85 mm x 55 mm)

Front Side of ID Card

Noida – Greater Noida Metro Corridor Project				
Company logo			Name	
			Address	
	Photo		Designation	
	Signature:	Blood group		
		Valid up to		

Reverse Side of ID Card

Noida – Greater Noida Metro Corridor Project	
Employee Address	
<p>This card is the property of “xx” (Main/Sub/labour Contractor) and must be returned on demand and on transfer/cancellation of employment. A charge will be levied for replacement of the card due to loss or theft. If found please return to the address given below.</p>	
Main Contractor Address	

Appendix – 3: Safety and Health Posters

Every contractor shall prepare a SHE Communication Plan as a part of work place specific SHE Plan and shall include the following minimum requirement of Posters / Signages / Video as applicable. In case readymade posters are available in any of the category from safety related organisations, they may procure the same and display it. In case the same is not available then the contractors shall make necessary arrangements to get the posters designed and printed on their own. The List of Posters:

- a. Mandatory PPE Usage
- b. Working at Height
- c. Work place Electricity
- d. First Aid

Appendix – 4: Sample Accident Occurrence Form

NMRCL	Safety Form Reference		Form no:	SAF - 01	
Accident/ Dangerous Occurrence Form			Accident no:		
Name of the Contractor			Contract no:		
Instructions: <ol style="list-style-type: none"> 1. A copy of this form shall be completed for every Accident or Dangerous Occurrence 2. It must be signed by a senior work place management representative 3. A copy shall be sent to the Employers Representative within 24 hours of the Accident 					
Part A – Details of Injured Person					
Name		DOB		Gender	
Address					
Job title		Employer			
Part B – Details of the Accident					
Date		Time		Location	
Describe the task the injured person was doing at the time of the accident:					
Describe in detail how the accident happened: (Attach any sketch, picture, map etc. if required)					
Plant and Machinery involved:	Yes/No	If yes, describe			
Witnesses (if any)					
Part C – Details of the injury					
Injury description					
Injury Category:	Response to injury			Home	
Fatal		First Aid			
Major		Doctor			
Minor		Hospital			
Part D - Certification					
I have checked the above information and can confirm that it is a true record of the accident					
Signed		In-charge name		Date	