

CIL Navikarniya Urja Limited
(A Subsidiary Company of Coal India Limited)

Tender Document For

Design, Engineering, Procurement & Supply, Construction & Erection, Testing, Commissioning, Associated Transmission System and Comprehensive O&M for 10 Years of 40MW (AC) Solar PV Power Plant at Johilla Area, Umaria, Madhya Pradesh, India



CIL Navi Karniya Urja
Limited 7th Floor, Coal
Bhawan, Premises
No-4 MAR Action Area –
1A, New Town, Rajarhat,
Kolkata (WB) – 700156
Email:
ceo.cnul@coalindia.in

About the Company

CIL Navikarniya Urja Limited (CNUL), a wholly owned subsidiary company of Coal India Limited was incorporated on 16th of April, 2021 to venture into new business area of New and Renewable Energy (Non-Conventional) segment including Solar, Wind, Small Hydro, Biomass, Geo-Thermal, Hydrogen, Tidal, etc., along with other prevalent technologies/emerging technologies for development of non-conventional/clean & renewal energy Business.

Parent company Coal India Limited (CIL) is the state-owned coal mining corporate came into being in November 1975 is at the forefront of the nation's coal production in the Indian energy sector. CIL alone produces around 83% of country's entire coal output. In a country where 69% of the total electricity generation is coal based, CIL virtually empowers the nation's power sector. Around 80% of CIL's total supplies are catered to power sector.

South Eastern Coal Fields Limited (SECL) is the wholly owned subsidiary Company of CIL. SECL intends for Development of **40 MW (AC)** Grid Connected Solar PV Project at one location of Johilla Area, SECL, Umaria, and Madhya Pradesh. CNUL has been awarded the job of providing PMC service for developing the 40 MW project through engagement of EPC Contractor.

The generated solar power from the proposed solar project will be utilized by SECL for captive consumption. CNUL endeavor to reduce energy charge of the Subsidiary by installing the proposed solar project.

INDEX

Section – I	Notice Inviting Tender (NIT)	
Section – II	General Terms and Conditions of Contract (GCC)	
Section- III	Special Conditions of Contract (SCC)	
Section- IV	Safety Code (SC)	
Section – V	Format for forms and Annexures	
Section – VI	Technical Specification	

SECTION – I: NOTICE INVITING TENDER (NIT)

कोल इंडिया लिमिटेड

(भारत सरकार का उपक्रम)

सौर विभाग

परिसर सं.-04 एम.ए.आर., प्लॉट नं.-ए.एफ.-III,

एक्शन एरिया- 1A, न्यू टाउन,

राजरहाट, कोलकाता-700156

फ़ोन: 033 23244024, फ़ैक्स: 033 23244082

वेबसाइट: www.coalindia.in



Coal India Limited

(A Government of India Enterprise)

Solar Division

Premises No. 04 MAR, Plot No. AF-III,

Action Area 1A, New Town,

Rajarhat, Kolkata-700156

Phone: 033 23244024, Fax: 033 3244082

Website: www.coalindia.in

Ref. No.: CIL/CNUL/SECL_40MW/JOHILLA/02

Dated: 29.10.2024

E-TENDER NOTICE

1. Tenders are invited on-line on the website <https://coalindiatenders.nic.in> from the eligible bidders having Digital Signature Certificate (DSC) issued from any agency authorized by Controller of Certifying Authority (CCA), Govt. of India and which can be traced up to the chain of trust to the Root Certificate of CCA, for the following work:

A	Scope Of Work	<p>Design & engineering, procurement & supply of equipment and materials (including PV modules, testing at manufacturers works, multi – level inspections, packing and forwarding, supply, receipt, unloading and storage at site, associated civil works, services, permits, licenses, installation and incidentals, insurance at all stages (Including Insurance of PV Modules), erection, testing and commissioning of 40 MW (AC) Grid connected ground mounted Solar PV Power Plant along with DC Overloading and performance demonstration with associated equipment and materials on turnkey basis at Johilla, Umara, M.P along with 10 (Ten) years comprehensive operation and maintenance from the date of commissioning or Operational Acceptance, whichever is later.</p> <ol style="list-style-type: none">1. Design, Procurement & Supply, and erection of the following, in all respect:<ol style="list-style-type: none">a) Supply, Packing and Forwarding, and Transportation of PV Modules up to the solar site at Johilla Area, Umrao, M.P, Transit insurance of crystalline Solar PV Modules with nominal wattage and dimensions as mentioned in the scope of supply for 1500V System Voltage including DC overloading and mandatory spares.b) The Total capacity of PV modules to be procured under this tender, excluding mandatory spares is 56 MWp (minimum).
---	---------------	---

		<ul style="list-style-type: none"> c) Erection, Installation, Testing and Commissioning of 132 kV 20 KM Transmission System from project site to injection point (BirsinghpurPali Substation) d) Module mounting structures and fasteners. Installation, Erection, Testing and Commissioning of Modules (as supplied by owner) along with demonstration of the performance parameters. e) All power conditioning systems including junction boxes, Inverters/ PCU, DC and AC circuit breaker(s). f) All associated electrical works and equipment required for interfacing line/ cable (i.e., transformer(s) – power and auxiliary, breakers, isolators, lightning arrestor(s), LT/other panels, protection system, cables, metering etc., but not limited to) as per technical specifications. g) Design, supply, erection, testing & commissioning defined in scope of work/ TS as per project requirement and associated switchgear equipment and metering equipment as per technical specification and state regulations. h) All associated civil works, including design and Engineering, for: Earthwork for Site grading, cutting, filling, levelling & compacting, internal Roads, Storm water drainage in the requisite project land as required for development of this Solar PV Power Plant i) Construction of Passage for Cleaning of Solar PV Project j) Construction of rainwater drainage, if required k) Setting up of a comprehensive Fire Protection system as per the Hazardous area classification for the site l) Supply of mandatory spares & special tools and tackles m) Demonstration of performance of the plant as per the requirement specified in the bidding documents. n) Comprehensive operation & maintenance of the ground mounted SPV plant for 10 (Ten) years as mentioned in detailed scope of work from the date of commissioning or Operational Acceptance, whichever is later, as detailed in technical specification, including supply and storage of all spare parts, consumables, repairs/ replacement of any defective equipment etc. o) Obtaining all associated statutory and regulatory compliances and approvals for successful construction, commissioning and operation of plant
B	Capacity Utilization Factor (CUF) or	Minimum CUF= 23.54 % at delivery point

	Minimum Net Electrical Energy Generation Guarantee (Minimum NEEGG)	CUF = plant output in kWh / (installed plant capacity in kW * 365 X 24) Minimum NEEGG = 82.48 Million Units (for 1 st year)
C	Tender ID. and date	As per Portal
D	Source of Fund	Owner as defined in the Bid Data Sheets (BDS) intends to finance the package through domestic funding and own resources.
E	Type of Tender	“Single Stage Two Part “online Bidding system.
F	Bidders Eligibility Criteria	It’s a “Domestic Competitive Bidding” and hence this bid is open only for bidders registered within the Owner’s country.
G	Scheduled Completion/ Contract Period	Scheduled Completion/ Contract Period shall mean: (i) 12 Months (ii) O&M period of 10 years after SCOD.
H	Cost of Bidding Document	Free of Cost
I	Tender Processing Fee	Free of Cost
J	Earnest Money Deposit (EMD)	INR 50 Lakhs.
K	Contract Performance Security	Applicable as per Section III – Special Conditions of Contract (SCC)
L	Date Time & Venue of Pre-Bid meeting & site visit	Pre Bid: As per Portal Details Site Visit: The bidder, at the Bidder’s own responsibilities, cost, and risk, is encouraged to visit and examine the Site of Works and its surroundings, approach road, soil condition, investigation report, existing works, if any, connected to the tendered work, drawings connected to the work, if as available and obtain all information that may be necessary for preparing the Bid and entering into a contract for execution of the works. The cost of visiting the Site shall be at the Bidder’s own expense. a) It shall be deemed that the Bidder has visited the Site/Area and got fully acquainted with the working conditions and other prevalent conditions and

		<p>fluctuations thereto whether he/she/they actually visit the Site /Area or not and has taken all the factors into account while quoting his/her/their rates.</p> <p>b) The Bidder is expected, before quoting his rate, to go through the requirement of materials/workmanship, specification, requirements and conditions of contract.</p>
--	--	---

Tender inviting authority	Contact Person(s)/Tender Dealing Officer(s)
<p>Sudarsan Bora GM (E&M) Solar Dept. Coal India Limited <u>gmsolar.cil@coalindia.in</u></p>	<p>1. Jitendra Kr. Singh Sr. Manager (E&M) Solar Dept. <u>singh.jitendra@coalindia.in</u></p> <p>2. Rajnesh Meena Deputy Manager (E&M) Solar Dept. <u>rajnish.meena@coalindia.in</u></p>
<p>For any Portal related queries please call at 24 x 7 Help Desk Number- 0120-4001 002, 0120-4001 005, 0120-4493 395 Email: support-eproc@nic.com</p>	

2. Time Schedule of Tender

1	Date of issuance of Tender	As per Portal
2	Last Date and Time for submission of pre-bid clarifications	
3	Date and Time of pre- bid meeting	
4	Last Date and Time for downloading the NIT	
5	Start Date and Time for Online Tender submission	
6	Last Date and Time for Online Tender submission	
7	Date and Time of Technical Bid opening (Cover-I)	
8	Date and time of Opening of Financial Bid (Cover-II)	

Note:

- a. The auto extension of submission of bid shall be applicable as per details mentioned in clause no.24 of NIT.
- b. In case there is any change in date and time of price opening, the same shall be communicated to the technically acceptable bidders through portal.

3. EMD/Bid security

- 3.1 The Bidder shall furnish, as part of his bid, a Bid Security/Earnest Money of the amount as shown in e-tender notice and in the form as deliberated below:
The Bidder will have to make the payment of EMD through ONLINE mode only. No Offline mode of Payment of EMD/Bid security shall be applicable and acceptable. In online mode the Bidder can make payment of EMD either through net banking from designated Banks/s or through NEFT/RTGS from any scheduled Bank. In case of payment through net-banking the money will be transferred to CIL/ Subsidiary designated Account. In case of payment through NEFT/RTGS the Bidder will have to make payment as per the Challan generated by system on e-Procurement portal. Bidder will be allowed by the system to submit the bid only when the EMD is successfully received in CIL/Subsidiary designated account and the information flows from Bank's Server to e-Procurement portal. The Earnest Money/ bid security for the unsuccessful Bidder shall be refundable as promptly as possible. The EMD shall bear no interest. No Bid will be accepted unless accompanied by requisite Bid Security/ Earnest Money Deposit as stated above.
- 3.2 Any Bid not accompanied by an acceptable Bid Security/EMD shall be rejected by the employer as nonresponsive unless otherwise exempted in the Bid document.
- 3.3 The EMD of rejected Bidders will be refunded at any stage directly to the account from where it had been received (except the cases where EMD is to be forfeited).
- 3.4 The Bid Security / EMD of successful Bidder may be retained and adjusted with Performance Security / Security Deposit at Bidder's option.
- 3.5 The Bid Security/Earnest Money may be forfeited:

- a. if the Bidder withdraws the Bid after the end date of Bid submission during the period of Bid validity / extended validity with mutual consent; or
 - b. in the case of a successful Bidder, if the Bidder fails within the specified time limit to furnish the required Performance Security Deposit;
- Additionally, the Company shall debar such defaulting Contractor from participating in future bids for a minimum period of 12(twelve) months.

3.6 The Bid Security/ EMD deposited with the Employer will not carry any interest.

3.7 No claim from the Bidders will be entertained for non-receipt of the refund in any account other than the one from where the money is received.

3.8 If the refund of EMD is not received by the Bidder in the account from which the EMD has been made due to any technical reason, then it will be paid through conventional system of e-payment. For this purpose, Bidder should submit e-Mandate form as per Clause No.7 during bid submission.

3.9 In case the tender is cancelled then EMD of all the participating Bidders will be refunded unless it is forfeited by the Department. If the Bidder withdraws the bid online (i.e. before the end date of submission of tender) then the EMD will be refunded automatically after the opening of tender.

4. Pre-bid Meeting

The pre-bid meeting shall be held on hybrid mode (physical as well as through VC) as per the scheduled date & time, as specified in the e-Procurement portal. The purpose of the pre-bid meeting is to clarify the issues and to answer the questions on any matter that may be raised at that stage. Non-attendance at the pre-bid meeting will not be a cause for disqualification of bidder and it shall be presumed that the bidder does not require any clarification. The minutes of the Pre-Bid meeting shall be uploaded on the Portal, which can be viewed by all interested bidders.

5. Clarification of Bid

The bidder may seek clarification on-line within the specified period. However, the management will clarify as far as possible to the relevant queries.

6. User Portal Agreement

The bidders have to accept the on-line user portal agreement which contains the acceptance of all the Terms and Conditions of NIT and tender document, undertakings and the e-Procurement system through <https://coalindiatenders.nic.in> in order to become an eligible bidder. This will be a part of the agreement.

7. Eligible Bidders

7.1 The Invitation for Bid(s) is open to all Bidders including an individual, proprietorship firm, partnership firm, company registered under Companies Act, any legal entity or JV/Consortium.

The bidders shall be eligible to participate only if they fulfill the qualifying criteria laid down separately hereinafter.

7.2 A firm that has been engaged by the Employer to provide consulting services for the preparation or supervision of the Works shall not be eligible to Bid.

7.3 Joint Venture(JV)/Consortium: Two or three companies/ contractors may jointly undertake contract/contracts. Each entity will be jointly and severally responsible for completing the task as per the contract JV/Consortium Details: - Name of all partners of a JV/Consortium (Not more than 3)

Joint Venture/ Consortium details:

Name of all Members of a JV/Consortium (not more than 3):

- i. Lead Member (minimum participation share – 50%)
- ii. Member (minimum participation share – 20%)
- iii. Member (minimum participation share – 20%)

NOTES: JV/Consortium must comply the following requirements:

- i) Following are the minimum qualification requirements for JV/Consortium:
 - a) The qualifying criteria parameter e.g. experience of the individual partners of the JV/CONSORTIUM will be as deliberated under Clause 8 of NIT towards fulfillment of qualification criteria related to experience.
 - b) The qualifying criteria parameter e.g. financial resources (turnover and Net-worth) of the individual partners of the JV/CONSORTIUM. will be added together, for the relevant period, and the total criteria should not be less than as deliberated under Clause 8 of NIT towards fulfillment of qualification criteria related to financial turnover. **However, the required Net-worth shall be met by individual JV/CONSORTIUM partners.**
- ii) The formation of JV/Consortium or change in the JV/Consortium character/ partners after submission of the bid and any change in the bidding regarding JV/Consortium /will not be permitted.
- iii) The bid, and in case of a successful bid- the agreement, shall be signed so as to legally bind all partners jointly and severally and any bid shall be submitted with a copy of the JV/Consortium Agreement providing the joint and several liabilities with respect to the contract.
- iv) The pre-qualification of a JV/Consortium does not necessarily pre-qualify any of its partners individually or as a partner in any other JV/Consortium or association. In case of dissolution of a JV/Consortium, each one of the constituent firms may pre-qualify if they meet all the pre-qualification requirements, subject to written approval of the employer.
- v) The bid submission must include documentary evidence to the relationship between JV/Consortium partners in the form of JV/CONSORTIUM Agreement to legally bind

- all partners jointly and severally for the proposed agreement which should set out the principles for the constitution, operation, responsibilities regarding work and financial arrangements, participation (percentage share in the total) and liabilities (joint and several) in respect of each and all of the firms in the JV/Consortium. Such JV/CONSORTIUM Agreement must evidence the commitment of the parties to bid for the facilities applied for (if prequalified) and to execute the contract for the facilities if their bid is successful.
- vi) One of the partners shall be nominated for being In-Charge of the contract and shall be designated as Lead Partner. This authorization shall be evidenced by submitting with the bid a Power of Attorney signed by legally authorized signatories of all the partners.
 - vii) The JV/CONSORTIUM Agreement must provide that the Lead Partner shall be authorized to incur liabilities and receive instructions for and on behalf of any and all partners of the JV/Consortium and the entire execution of the contract shall be done with active participation of the Lead Partner.
 - viii) The contract agreement should be signed by each JV/Consortium Partners. Subsequent declarations/letters/documents shall be signed by lead partner authorized to sign on behalf of the JV/CONSORTIUM or authorized signatory on behalf of JV/CONSORTIUM.
 - ix) The bid should be signed by the DSC holder submitting the bid.
 - x) An entity can be a partner in only one JV/Consortium. Bid submitted by JV/Consortium including the same entity as partner will be rejected.
 - xi) The JV/CONSORTIUM agreement may specify the share of each individual partner for the purpose of execution of this contract. This is required to fulfill eligibility criteria and also for the purpose of apportioning the value of the contract to that extent to individual partner for subsequent submission in other bids if he intends to do so for the purpose of the qualification in that Bid.
 - xii) The earnest money / bids security bank guarantee can be submitted by the JV/Consortium or one or more partners of the JV/Consortium.
 - xiii) The JV/CONSORTIUM agreement must specifically state that it is valid for the project for which bidding is done. If JV/CONSORTIUM breaks up midway before award of work and during bid validity period bid will be rejected. If JV/CONSORTIUM breaks up midway before award of work and during bid validity/after award of work/during pendency of contract, in addition to normal penalties as per provision of bid document, all the partners of the JV/CONSORTIUM shall be debarred from participating in future bids for a minimum period of 12 months.
 - xiv) JV/CONSORTIUM agreement shall be registered in accordance with law so as to be legally valid and binding on the members before making any payment.
 - xv) JV/CONSORTIUM shall open a bank account in the name of JV/CONSORTIUM and all payments due to the JV/CONSORTIUM shall be credited by employer to that account only. To facilitate statutory deductions all statutory documents like PAN/GSTIN, etc. in the name of the JV/Consortium shall be submitted by JV/CONSORTIUM before making any payment.

8. Eligibility Criteria to qualify for the award of contract and data/supporting documents to be uploaded online

Qualification of the bidder(s) will be based on their meeting the minimum eligibility criteria specified below regarding the Bidder's Technical Experience and Financial eligibility as demonstrated by the Bidder's responses in the corresponding Bid documents. The bid can be submitted by an individual Company or by a Joint Venture/Consortium of not more than 03 (Three) companies. (Specific requirements for Joint Ventures/Consortium are given below)

A. Work Experience

- a) Bidders can participate through any one of the below mentioned qualifying routes. The Bidder shall be considered meeting Technical Eligibility criteria either from Route I or Route II.

Route I

The bidder should have experience in EPC execution of Grid connected Ground mounted Solar PV Projects on Turnkey basis including Design, Supply (Supply of Modules shall be inclusive in the bidder's scope in the past experience), Installation and Commissioning of **cumulative capacity of 15 MW (AC) – with projects of capacity not less than 04 MW (AC)** in last seven financial years as on ending last day of month previous to the one in which bid applications are invited. However, such Grid connected Solar PV Power Plants must have been in satisfactory operation for at least six (06) months from the date of Commissioning. The certificate of Commissioning (including satisfactory performance of 6 months after commissioning) will be submitted by the bidder during bidding.

Route II

The bidder should have experience in execution of Grid Connected Ground mounted Solar PV Projects as a Developer of **cumulative capacity of 15 MW (AC)– with projects of capacity not less than 04 MW(AC)** in last seven financial years as on ending last day of month previous to the one in which bid applications are invited. However, such Grid connected Solar PV Power Plants must have been in satisfactory operation for at least six (06) months from the date of Commissioning. The certificate of Commissioning (including satisfactory performance of 6 months after commissioning) will be submitted by the bidder during bidding.

The bidder shall also be considered qualified, in case the award for executing the reference work has been received by the bidder either directly from the owner of the plant or any other intermediary organization.

- Commissioning Certificate will be accepted if issued by a Govt entity.
- ITR and/or Form 16 (for the relevant year in which bidder has received the final payment of the job) will be additionally required in case work completion is issued by a non-Government entity.

Note:

1). The experience towards overseas jobs, if submitted, should be vetted/endorsed by the relevant* embassy/high commission concerned, towards authenticity of document in English or translated in English language. (*Relevant embassy/High Commission means the embassy/High Commission in India of the country where the bidder has executed the said work or country of origin of the bidder OR the Indian embassy in the country where bidder has executed the work or country of origin of the bidder.)

2). JV/Consortium, shall be allowed for participation in the bid.

The above qualification criteria can also be fulfilled by JV/CONSORTIUM either individually (by any of the JV/ CONSORTIUM member) or jointly.

However, the participating share of JV/CONSORTIUM partners shall be as below:

i) Lead Partner shall have at least 50% participating share in JV/CONSORTIUM

ii) Other partner(s) shall have at least 20% participating share in JV/CONSORTIUM.

Experience for those works only shall be considered for evaluation purposes, which match eligibility requirement stipulated above, on or before the last day of month previous to one in which tender has been invited (publication date of NIT). The experience of incomplete/ongoing works as on last date of eligibility period will not be considered for evaluation.

b) Scanned copy of documents to be uploaded by bidder(s) in Bidder space/ My Document.

The Applicant shall furnish details of such Solar Photo Voltaic-based grid connected power plant(s) in the formats given in Annexure-XVII(a) and Annexure-XVII(b) along with the following documents as documentary evidence:

Under Route I

A. Acknowledgement / Certificate from customer / client for successful execution of work / contract. The acknowledgement / certificate must contain following information:

- Name & address of Employer/Work Order Issuing authority of each experience.
- Capacity of Solar Project in MW (AC).
- Date of award of work for installation of Solar Plant/System.
- Date of commissioning of Solar Plant/System.

B. Self-attested copy of Work Order(s) or Contract(s).

C. The Performance Certificate must have been issued for a minimum duration of 06 (Six) months from the date of commissioning. The Performance Certificate/Joint meter reading

(JMR) reports shall have been issued by any state/ central owned agencies or state power departments or authorized representative of Power offtaker (Discom/Private Power purchaser).

- D. Percentage (%) share of each experience (In case the experience has been earned by the bidder as a partner in a JV/Consortium firm/partnership firm then the proportionate value of experience in proportion to actual share of bidder in that JV/Consortium firm/partnership firm will be considered against eligibility else it shall be taken as 100%).

Under Route II

- A. Letter of Award (LOA)/Work Order/Contract document/Certificate of Commissioning issued to the EPC player having following Information:
- Name & address of Employer/Work Order Issuing authority of each experience.
 - Capacity of Solar Project in MW (AC).
 - Date of award of work for installation of Solar Plant/System to EPC.
 - Date of commissioning of Solar Plant/System.
- B. The Performance Certificate must have been issued for a minimum duration of 06 (Six) months from the date of commissioning. The Performance Certificate/Joint meter reading (JMR) reports shall have been issued by any state/ central owned agencies or state power departments or authorized representative of Power offtaker (Discom/Private Power purchaser).
- C. Percentage (%) share of each experience (In case the experience has been earned by the bidder as a partner in a JV/Consortium firm/partnership firm then the proportionate value of experience in proportion to actual share of bidder in that JV/Consortium firm/partnership firm will be considered against eligibility else it shall be taken as 100%).

Note:

For both cases (i.e. Route-I and Route-II), in addition to above document, the following is required:

- **Commissioning Certificate will be accepted if issued by a Govt entity.**
- **ITR and/or Form 16 (for the relevant year in which bidder has received the final payment of the job) will be additionally required in case work completion is issued by a non-Government entity.**

B. Financial Eligibility Criteria

a) **Financial Turnover -**

Average annual financial turnover during the last 3(three) years, ending 31st March of 2024 should be ₹ 63,94,73,844/- (**Indian Rupees Sixty-three crore ninety-four lakh seventy-three thousand eight hundred forty-four**). The Turnover of bidder should exclude the “other incomes”.

The intending bidders must submit the Financial Turnover certificate (with UDIN No.) issued by a Practicing Chartered Accountant having a membership number with Institute of Chartered Accountants of India, containing the information as furnished by bidder online. The foreign partner(s) should submit Financial Turnover certificate based on IFRS (International Financial Reporting Standards) accounting standard certified by a local practicing public accountant/audit firm duly vetted/endorsed by the relevant *Embassy/High Commission concerned, towards authenticity of document. (*Relevant embassy/High Commission means the embassy/High Commission in India of the country where the bidder has obtained Turnover certificate or country of origin of the bidder OR the Indian embassy in the country where the bidder has obtained Turnover certificate or country of origin of the bidder.)

In respect of the above eligibility criteria the bidders are required to furnish the following information on-line:

- i) Annual turnover of each of the last 3 (three) years ending 31st March of the previous financial year.
- ii) Name of the Chartered Accountant issuing the Profit and Loss A/c or the Turnover certificate.
- iii) Membership Number of the Chartered Accountant.
- iv) Date of certificate issued by Chartered Accountant.

Note:

- a. In case the bidder is a JV/Consortium, the turnover of the individual partners of the JV/CONSORTIUM will be added together for each financial year and is to be furnished as the turnover of the bidder for that particular financial year. However, the information against Sl. No. (ii) & (iii) above will be given w.r.t. the lead partner of JV/CONSORTIUM only.
- b. In case of JV/CONSORTIUM, if financial turnover of all the partners is not submitted; the JV/CONSORTIUM will not be disqualified and instead the required turnover will be calculated assuming zero value for partner/partners who has/have not submitted the financial turn over certificate.

Special Note:

Confirmation regarding possessing of Financial Turnover issued by Practicing Chartered Accountant in the form of Yes / No.

Scanned copy of documents to be uploaded by bidders: Financial Turnover certificate having a Unique Document Identification Number (UDIN) with Institute of Chartered Accountants of India.

b) **NET WORTH**

The Net Worth of the bidder (standalone / unconsolidated) as on the last date of each of the last three financial years just preceding the financial year (FY21-22, FY 22-23, FY 23-24) in which bid has been submitted should be positive. Net Worth to be considered for this clause shall be the total Net Worth as calculated in accordance with the Companies Act, 2013 and any further amendments thereto.

The intending bidders must submit the Net Worth certificate (with UDIN No.) issued by a Practicing Chartered Accountant having a membership number with Institute of Chartered Accountants of India, containing the information as furnished by bidder online.

The foreign partner(s) should submit Net Worth certificate based on IFRS (International Financial Reporting Standards) accounting standard certified by a local practicing public accountant/audit firm duly vetted/endorsed by the relevant *Embassy/High Commission concerned, towards authenticity of document. (*Relevant embassy/High Commission means the embassy/High Commission in India of the country where the bidder has obtained Net Worth certificate or country of origin of the bidder OR the Indian embassy in the country where the bidder has obtained Net Worth certificate or country of origin of the bidder.)

C. Permanent Account Number (PAN)

The bidder should possess Permanent Account Number (PAN) issued by Income Tax department, Govt. of India.

In respect of the above eligibility criteria the bidders are required to furnish the following information on-line:

- i) Confirmation regarding possessing of Permanent Account Number (PAN) issued by Income Tax department, Govt. of India in the form of Yes / No.

Scanned copy of documents to be uploaded by bidders (BIDDER SPACE/ MY DOCUMENT):
PAN CARD of the bidder

(In case of JV, PAN card for each Indian partner of JV and Verifiable Tax Residency Certificate of respective country for each foreign partner or JV itself)

D. Goods and Services Tax (Not Applicable for Exempted Services)

The bidder should be either GST Registered Bidder under regular scheme

OR

GST Registered Bidder under Composition Scheme

OR

GST unregistered Bidder

In respect of the above eligibility criteria the bidder is required to furnish the following information online:

- i. **Confirmation in the form of Yes/No regarding possessing of required document as enlisted in NIT with respect to GST status of the bidder.**

Scanned copy of documents to be uploaded by bidder(s) in support of information / declaration furnished online by the bidder against Eligibility Criteria as Confirmatory Document.

Note:

- i. In case of JV/CONSORTIUM, Bidder should submit scanned copy of GST status of Lead Partner only or GST Registration Certificate of JV/CONSORTIUM itself.
- ii. In case the work/service is awarded to a JV/Consortium participating in the tender they have to submit PAN, GST registration (as applicable in the tender and for the bidder status) etc. in the name of the JV/Consortium after Award of Work/Service before the payment of first running on account bill.
- iii. If turnover of bidder exceeds exemption/threshold limit, the bidder must have GST registration as per GST Act and rules.
- iv. During the execution of the contract if the GST status of the bidder changes, then the payment of GST, if any, to the contractor will be made as per the GST status declared by the bidder during tender stage based on which cost to company has been ascertained or at actuals, whichever is lower.
- v. Scanned copy of documents to be uploaded by bidder(s) in support of information / declaration furnished online by the bidder against Eligibility Criteria as Confirmatory Document.

9. If the bidder is a subsidiary of a company, the experience and resources of the holding company or its other subsidiaries will not be taken into account. However, if the bidder is a holding company, the experience and resources of its wholly owned subsidiaries will be taken into consideration.

10. Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have:

- a) Made misleading or false representations in the forms, statements and attachments submitted in proof of the qualification requirements; and/or
- b) Record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history, or financial failures etc.

Note:

1. If turnover of Bidder exceeds exemption/threshold limit, the Bidder must have GST registration as per GST Act and rules.
2. During evaluation of GST Registered Bidders the confirmation of their status shall be verified from the relevant Govt website (Not to be kept as a part of NIT).

11. General Instruction for Submission of Bid:

All the bids are to be submitted online on e-procurement portal of CIL. No bid shall be accepted offline. In order to qualify in the tender the Bidders have to accept the following conditions:

- i. All the Terms and Condition of the NIT and Tender Document Unconditionally on line in the form of User Portal Agreement.
- ii. Expected values of each of the General Technical Evaluation (GTE) items.
- iii. Documents confirming the legal status of the Bidder as specified in the checklist given in the NIT.
- iv. To upload online the scanned copy of documents, as specified in the NIT for evaluation by Tender Committee as per the checklist given in the NIT.

Data to be furnished by Bidder on-line:

Confirmation in the form of Yes/No for each GTE item.

Technical evaluation by the System:

System will capture data in the Yes/No format from the Bidder and will decide the eligibility for (i) & (ii) above.

For (iii) & (iv) the documents will be downloaded and evaluated by Tender Committee.

12. Submission of Bid:

12.1 In order to submit the Bid, the bidders have to get themselves registered online on the e-Procurement portal of CIL (<https://coalindiatenders.nic.in>) with valid Digital Signature Certificate (DSC) issued from any agency authorized by Controller of Certifying Authority (CCA), Govt. of India and which can be traced up to the chain of trust to the Root Certificate of CCA. The online Registration of the Bidders on the portal will be free of cost and one time activity only. The registration should be in the name of bidder, whereas DSC holder may be either bidder himself or his duly authorized person. The bidder is one whose name will appear as bidder in the e-Procurement Portal.

Note:

If a Joint Venture/ Consortium is participating as bidder, the name of the bidder in the e-procurement portal will be the name of the JV/ Consortium.

Example,

if “ABC Consortium” is the bidder, comprising members A (say lead partner), B and C, The bidder name in the e-procurement portal will be “ABC Consortium”.

The JV/ Consortium will register the name of JV/ Consortium (in this case “ABC Consortium) in the e-procurement portal. If PAN of JV/ Consortium is not available at the time of registration in portal, then bidders may enter PAN as detailed in “Registration of Bidders” under “Bidders manual kit” in e-procurement portal (<https://coalindiatenders.nic.in>).

12.2 The bidders have to accept unconditionally the online user portal agreement which contains the acceptance of all the Terms and Conditions of Tender Document including General, Additional Terms & Conditions and Special Conditions of contract (SCC), Integrity Pact and other conditions, if any, along with on-line undertaking in support of the authenticity of the declarations regarding the facts, figures, information and documents furnished by the Bidder on-line in order to become an eligible bidder. No conditional bid shall be allowed/accepted.

12.3 The bidders have to accept unconditionally in GTE (General Technical Evaluation) the Undertaking at Annexure II regarding Genuineness of the information furnished by him on-line & authenticity of the scanned copy of documents uploaded by him on-line in support of his eligibility criteria declaration w.r.t Make in India order dated 16.09.2020 and compliance w.r.t procurement from the bidder of a country which shares a border with India & etc. and Annexure I (Letter of Bid).

12.4 Moreover, the following documents shall be considered from the Bidder's space/ My Document and no recycling will be done for these documents i.e. no further clarification will be sought from bidder -

Sl. No.	Document	Scanned copy of documents uploaded by bidder in Bidder's space/ My Document
1	Permanent Account Number (Ref. Clause No.8.C of NIT)	PAN card issued by Income Tax department, Govt. of India. <i>(In case of JV, PAN card for each Indian partner of JV and Verifiable Tax Residency Certificate of respective country for each foreign partner or JV itself)</i>
2	Goods and Services Tax (GST) Status of Bidder (Ref. Clause No.8.D of NIT)	The following documents depending upon the status w.r.to GST as declared by Bidder in the BOQ sheet: a) Status: <u>GST Registered Bidder under regular scheme</u> Document: GST Registration Certificate (i.e. GST identification Number) issued by appropriate authority of India. b) Status: <u>GST Registered Bidder under composition scheme</u> Document: GST Registration Certificate (i.e. GST identification Number) issued by appropriate authority of India. c) Status: GST unregistered bidder: Document: A Certificate having UDIN from a practicing Chartered Accountant having membership number with Institute of Chartered Accountants of India certifying that the bidder is GST unregistered bidder in compliance with the relevant GST rules of India.

		<p><i>(In case of JV/CONSORTIUM, Bidder should submit scanned copy of GST status of Lead Partner only or GST Registration Certificate of JV/CONSORTIUM itself.)</i></p> <p>Note:</p> <p>a. If turnover of bidder exceeds exemption/threshold limit, the bidder must have GST registration as per GST Act and rules.</p>
3	Legal Status of the bidder	<p><u>Document(s) covered under any one of the following sub-head(s):</u> Any one of the following documents:</p> <ol style="list-style-type: none"> 1. Affidavit or any other document to prove proprietorship/Individual status of the Bidder. 2. Partnership deed containing name of partners 3. Memorandum & Article of Association with certificate of incorporation containing name of Bidder 4. Joint Venture/Consortium agreement containing name of partners and lead partner, Power of Attorney to the Lead Partner and share of each partner.

12.5 Confirmatory Documents: All the confirmatory documents as enlisted in the NIT in support of online information submitted by the bidder are to be uploaded in Cover-I by the bidder while submitting his/her/their bid.

Sl. No.	Eligibility Criteria	Scanned copy of documents to be uploaded by bidder(s) in support of information/declaration furnished online by the bidder against Eligibility Criteria (CONFIRMATORY DOCUMENTS)
1	Work Experience (Clause 8.A)	<p>The Applicant shall furnish details of such Solar Photo Voltaic-based grid connected power plant(s) in the formats given in <u>Annexure-XVII(a)</u> and <u>Annexure-XVII(b)</u> along with the following documents as documentary evidence:</p> <p>Under Route I</p> <p>A. Acknowledgement / Certificate from customer / client for successful execution of work / contract. The acknowledgement / certificate must contain following information:</p> <ul style="list-style-type: none"> • Name & address of Employer/Work Order Issuing authority of each experience. • Capacity of Solar Project in MW (AC). • Date of award of work for installation of Solar Plant/System. • Date of commissioning of Solar Plant/System. <p>B. Self-attested copy of Work Order(s) or Contract(s).</p>

		<p>C. The Performance Certificate must have been issued for a minimum duration of 06 (Six) months from the date of commissioning. The Performance Certificate/Joint meter reading (JMR) reports shall have been issued by any state/ central owned agencies or state power departments or authorized representative of Power offtaker (Discom/Private Power purchaser).</p> <p>D. Percentage (%) share of each experience (In case the experience has been earned by the bidder as a partner in a JV/Consortium firm/partnership firm then the proportionate value of experience in proportion to actual share of bidder in that JV/Consortium firm/partnership firm will be considered against eligibility else it shall be taken as 100%).</p> <p>Under Route II</p> <p>A. Letter of Award (LOA)/Work Order/Contract document/Certificate of Commissioning issued to the EPC player having following Information:</p> <ul style="list-style-type: none"> • Name & address of Employer/Work Order Issuing authority of each experience. • Capacity of Solar Project in MW (AC). • Date of award of work for installation of Solar Plant/System to EPC. • Date of commissioning of Solar Plant/System. <p>B. The Performance Certificate must have been issued for a minimum duration of 06 (Six) months from the date of commissioning. The Performance Certificate/Joint meter reading (JMR) reports shall have been issued by any state/ central owned agencies or state power departments or authorized representative of Power offtaker (Discom/Private Power purchaser).</p> <p>C. Percentage (%) share of each experience (In case the experience has been earned by the bidder as a partner in a JV/Consortium firm/partnership firm then the proportionate value of experience in proportion to actual share of bidder in that JV/Consortium firm/partnership firm will be considered against eligibility else it shall be taken as 100%).</p> <p>For both cases (i.e. Route-I and Route-II), in addition to above document, the following is required:</p>
--	--	--

		<ul style="list-style-type: none"> • Commissioning Certificate will be accepted if issued by a Govt entity. • ITR and/or Form 16 (for the relevant year in which bidder has received the final payment of the job) will be additionally required in case work completion is issued by a non-Government entity.
3	Net Worth (Clause 8.B(b))	<p>The Net Worth of the bidder (standalone / unconsolidated) as on the last date of each of the last three financial years (FY21-22, FY 22-23, FY 23-24) just preceding the financial year in which bid has been submitted should be positive. Net Worth to be considered for this clause shall be the total Net Worth as calculated in accordance with the Companies Act, 2013 and any further amendments thereto.</p> <p>The intending bidders must submit the Net Worth certificate (with UDIN No.) issued by a Practicing Chartered Accountant having a membership number with Institute of Chartered Accountants of India, containing the information as furnished by bidder online.</p> <p>The foreign partner(s) should submit Net Worth certificate based on IFRS (International Financial Reporting Standards) accounting standard certified by a local practicing public accountant/audit firm duly vetted/endorsed by the relevant *Embassy/High Commission concerned, towards authenticity of document. (*Relevant embassy/High Commission means the embassy/High Commission in India of the country where the bidder has obtained Net Worth certificate or country of origin of the bidder OR the Indian embassy in the country where the bidder has obtained Net Worth certificate or country of origin of the bidder.)</p>
4	Financial Turnover (clause 8.B(a))	<p>Average annual financial turnover during the last 3(three) years, ending 31st March of 2024 should be ₹ 63,94,73,844/- (Indian Rupees Sixty-three crore ninety-four lakh seventy-three thousand eight hundred forty-four). The Turnover of bidder should exclude the “other incomes”.</p> <p>(I) The intending bidders must submit the Financial Turnover certificate (with UDIN No.) issued by a Practicing Chartered Accountant having a membership number with Institute of Chartered Accountants of India (In case of JV, turnover certificate for each individual partner of JV)</p>

		(II) Audited financial results i.e. Annual Report including Audited Balance Sheet and Profit & Loss Account Statement for immediate three preceding financial years to meet the above Financial Eligibility Criteria.
5	Verification of Local Content	A. All the Bidders at the time of bidding shall submit self-certification indicating the percentage of local content in the offered items in Undertaking as per format at Annexure X. B. All the Bidders shall submit along with its bid a certificate (with UDIN) from the statutory auditor or cost auditor of the company (in case of companies) or from a practicing cost accountant or practicing chartered account (in respect of suppliers other than companies) giving the percentage of local content (with Annexure X).
6	Digital Signature Certificate (DSC)	If the bidder himself is the DSC holder bidding on-line then no document is required. However, if the DSC holder is bidding online on behalf of the bidder then the Power of Attorney or any sort of legally acceptable document for the authority to bid on behalf of the bidder.
7	Undertaking by bidder on his/her/their Letter Head as per Annexure X.	Undertaking regarding relatives as employees of company, Arbitration clause (in case of partnership firm), compliance w.r.t procurement from bidder of a country which shares a border with India, Local supplier status of the Bidder as per NIT etc.
8	Detailed Project Schedule	Detailed Project Schedule as per Annexure XII
<p>Note: Only one file in .pdf format can be uploaded against each eligibility criteria. Any additional/ other relevant documents to support the information/declaration furnished by bidder online against eligibility criteria may also be attached by the bidder in the same file to be uploaded against respective eligibility criteria.</p>		

12.6 Letter of Bid (LoB): The format of Letter of Bid is given at Annexure I of Tender document. This will be the covering letter of the bidder for his submitted bid. The bidders have to accept unconditionally the Letter of Bid in GTE (General Technical Evaluation) at the time of bid submission. This online acceptance during bidding through GTE shall be construed as submission of LOB by bidder.

12.7 Price bid: The Price bid containing the Bill of Quantity will be in Excel format and will be downloaded by the bidder and bidder will quote the rates for all items on this Excel file.

The bidder shall quote the rate and GST amount as per the BOQ format. This file will be digitally signed and uploaded by the bidder after ascertaining the correctness of facts and figures.

Thereafter, the bidder will upload the same Excel file during bid submission in cover-II. The Price-bid will be in BOQ format and the bidder will have to mandatorily fill all the sections / sheets of the BOQ Excel. The Price Bid of the tenderers will have no condition. The price bid which is incomplete and not submitted as per instruction given in this document is liable for rejection.

13. Net Electrical Energy Generation Guarantee (NEEGG)

13.1 The Bidder shall be required to quote in the Annexure X the year-wise Net Electrical Energy Generation Guarantee (NEEGG) for Ten (10) years period at the metering point. The Bidder shall give NEEGG per annum after considering proposed configuration and all local conditions, solar insolation, wind speed and direction, air temperature & relative humidity, barometric pressure, rainfall, sunshine duration, grid availability and grid related all other factors and losses due to near shading, incidence angle modifier, irradiance level, temperature loss, array loss, module quality loss, module array mismatch loss, soiling loss and various inverter losses etc.

13.2 Bidders are expected to undertake their own study of solar profile and other related parameters of the area and make sound commercial judgment about power output i.e. Net Electrical Energy Guaranteed Generation.

13.3 The Bids should have the NEEGG equivalent to minimum 23.54% CUF (minimum 82.48 million units) at the Delivery Point for the first year. The degradation in NEEGG quoted for any year shall not be more than 0.5% of that quoted for the previous year. If the Bidder anticipates any degradation of the modules during the first year, it shall be taken care of by the Bidder to provide additional capacity of solar PV modules to meet guaranteed generation at the end of first year to avoid liquidated damages/compensation on account of guaranteed generation.

Note: Any bid which does not meet the above mentioned minimum generation criteria will not be considered for further evaluation.

14. System for decision of L1 bidder

The L1 bidder will be decided based on Evaluated Bid Value (EBV). Illustrative computation of EBV is shown in Annexure-XI.

15. Bid Submission

All bids are to be submitted on-line on the website <https://coalindiatenders.nic.in>. No bid shall be accepted off-line unless otherwise specified.

16. System Requirement:

It is the bidder's responsibility to comply with the system requirement i.e. hardware, software and internet connectivity at bidder's premises to access the e-tender website. Under any circumstances,

CIL shall not be liable to the bidders for any direct/indirect loss or damages incurred by them arising out of incorrect use of the e-tender system or internet connectivity failures.

17. Bid opening

17.1 The Technical bid (Cover-I) will be opened one day after the Bid submission end date or next working day whichever is later. Technical bid (Cover-I) will be decrypted and opened online by the “Bid Openers” with their Digital Signature Certificates on the prescheduled date & time of Tender Opening.

17.2 All the documents uploaded by Bidder(s) including EMD exemption documents (if any) and the Evaluation sheets generated by the system online shall be downloaded after opening of Technical bid (Cover-I). After decryption and opening of Technical bid (Cover-I) the “technical bid opening summary” will be uploaded on the same day.

17.3 The e-Procurement System will evaluate the Technical bids automatically on the basis of relevant data provided by Bidder through a form in an objective and structured manner while submitting bid. If the parameter given by Bidder in objective and structured manner does not confirm to required eligibility criteria as specified in the tender document then the bid will be evaluated by system as non-complied and shall be rejected automatically by the system.

17.4 Acceptance of Bidder in a general form of online declaration will be recognized and accepted as the certification regarding authenticity of all the information and documents furnished by them online and acceptance of all terms and conditions of the bid document, since such acceptance by Bidder with Digital Signature Certificate is legally tenable.

18. Confidentiality

Information relating to the examination, clarification, evaluation, and comparison of Bids, and recommendations for the award of a Contract, shall not be disclosed to Bidders or any other persons not officially concerned with such process. Any effort by a Bidder to influence the EMPLOYER's/ Owner's processing of Bids or award decisions may result in the rejection of the Bidder's Bid and action shall be initiated as per procedure in this regard.

19. Contacting the Employer/ Owner

- A. From the time of Bid opening to the time of award of Contract, if any Bidder wishes to contact the EMPLOYER/ Owner on any matter related to the Bid, it should do so in writing. Information relating to the examination, clarification, evaluation & recommendation for award shall not be disclosed.
- B. Any effort by the Bidder to influence the EMPLOYER/ Owner in the EMPLOYER's 'Bid Evaluation', 'Bid Comparison', or 'Contract Award' decisions may result in the rejection of the offer/Bid and action shall be initiated as per procedure in this regard.

20. Examination of Bids and Determination of Responsiveness

20.1 Prior to the detailed evaluation of Bids, the Employer will determine whether each Bid:

- a. meets the eligibility criteria defined in Clause 7 & 8;
- b. is accompanied by the required securities and
- c. is substantially responsive to the requirements of the Bidding documents.

20.2 A substantially responsive Bid is one which conforms to all the terms, conditions & specifications of the Bidding documents without material deviation or reservation. A material deviation or reservation is one:

- a. which affects in any substantial way the scope, quality, or performance of the works;
- b. which limits in any substantial way, inconsistent with the Bidding documents, the Employer's rights or the Bidder's obligations under the Contract; or
- c. whose rectification would affect unfairly the competitive position of other Bidders presenting substantially responsive Bids.

20.3 If a Bid is not substantially responsive, it may be rejected by the Employer at its sole discretion.

21. Evaluation and Comparison of Bids

Bid shall be evaluated as per evaluation criteria mentioned below on the total project cost including GST. The EMPLOYER shall only use the criteria and methodology indicated in the Tender documents. No other criteria/ methodology shall be permitted.

- A. After opening of Technical bid, the documents submitted by Bidder(s) in Cover I as enlisted in the NIT will be downloaded by the Evaluator and shall be put up to the Tender Committee. The Tender Committee will examine the uploaded documents against information/declarations furnished by the Bidder(s) online. If it confirms to all of the information/ declarations furnished by the Bidder online and do not change the eligibility status of the Bidder then the Bidder will be considered eligible for opening of price bid.
- B. In case the Tender Committee finds that there is some deficiency in uploaded documents corresponding to the information furnished online or in case corresponding document have not been uploaded by Bidder(s) then the same will be specified online by Evaluator clearly indicating the omissions/shortcomings in the uploaded documents and indicating start date and end date allowing 7 days (7 x 24 hours) time for online re-submission by Bidder(s). The Bidder(s) will get this information on their personalized dashboard under “Upload confirmatory document” link. Additionally, information shall also be sent by system generated email and SMS, but it will be the Bidder’s responsibility to check the updated status/information on their personalized dash board regularly after opening of bid. No separate communication will be required in this regard. Non-receipt of e-mail and SMS will not be accepted as a reason of non-submission of documents within prescribed time. The Bidder(s) will upload the scanned copy of all those specified documents in support of the information/ declarations furnished by them online within the specified period of 7 days. No further clarification shall be sought from Bidder.

Note: The shortfall information/ documents should be sought only in case of historical documents which pre-existed at the time of the tender opening and which have not undergone change since then. These should be called only on basis of the recommendations of the TC. So far as the submission of documents is concerned with regard to qualification criteria, after submission of the tender, only related shortfall documents should be asked for and considered. For example, if the bidder has submitted a work order document related to a particular contract without its completion/ performance certificate, the certificate can be asked for and considered. However, no work order for new contract should be asked for so as to qualify the bidder.

- C. It is responsibility of Bidders to upload legible/clearly readable scanned copy of all the required documents as mentioned above.
- D. The tender will be evaluated on the basis of documents uploaded by Bidder(s) online. The Bidder(s) is/are not required to submit hard copy of any document through offline mode. Any document submitted offline will not be given any cognizance in the evaluation of tender.
- E. In case the Bidder(s) submit(s) requisite documents online as per NIT, then the Bidder(s) will be considered eligible for opening of Price Bid.
- F. Seeking clarification shall be restricted to confirmation of submitted document/online information only and it should be only for one time for a period of upto 7 days. The clarification shall be taken in online mode in the eProcurement portal of CIL only.
- G. The verification of Document from source shall be done only in case of complaints received or on suspicion. This should be done either through speed post or through electronic communication. No anonymous/pseudonymous complaints shall be entertained.
- H. In case Bidder(s) fails to confirm the online submitted information(s)/ declaration(s) by the submitted documents as (B) above, their/his bid shall be rejected; however, if the confirmatory documents do not change eligibility status of the Bidder in connection his submitted online information(s)/declaration(s), then his/their bid will be accepted for opening of Price Bid.
- I. After Technical evaluation of tender, “Technical Evaluation Summary” will be uploaded by the Evaluator and price bid shall be opened on preschedule date and time mentioned in the NIT online in the e-Procurement portal of CIL. However, in case there is any extension of date and time of price bid opening, it shall be notified online and price bid shall be opened online on e-Procurement portal of CIL at rescheduled date and time.
- J. In case none of the Bidder(s) complies the technical eligibility criteria as per NIT, then Bidder(s) will be rejected online and re-tender (if required) will be done (with the same or different quantity, as per the instant requirement).

22. Purchase Preference under ‘Make in India’ Policy for “Local supplier”.

Under ‘Make in India’ policy of Government of India, Purchase Preference will be given to eligible bidders as per Public Procurement (Preference to Make in India), Order 2017 issued vide order No. P-45021/2/2017-B.E.-II dated 15th June 2017 (subsequently revised vide orders dated

28.05.2018, 29.05.2019, 04.06.2020, 16.09.2020 and 04.03.2021) of Department for Promotion of Industry and Trade, Ministry of Commerce and Industry.

The definitions of ‘Class-I Local Supplier’, ‘Class-II Local Supplier’, ‘Non-Local Supplier’ and ‘Local Content’ are as follows:

‘Class-I Local Supplier’ means a supplier, whose goods and/or services offered for procurement, has local content equal to or more than 50%.

‘Class-II Local Supplier’ means a supplier, whose goods and / or services, offered for procurement, has 20% or more local content but less than 50%.

‘Non - Local Supplier’ means a supplier, whose goods and / or services, offered for procurement, has local content less than 20%.

‘Local Content’ means the amount of value added in India which shall be the total value of the item procured (excluding net domestic indirect taxes) minus the value of imported content in the item (including all customs duties) as a proportion of the total value, in percent.

As per the OM dated 04.03.2021, it has been clarified by the Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry that bidders offering imported products will fall under the category of Non-Local Suppliers. They can’t claim themselves as Class-I Local Suppliers/Class II Local Suppliers by claiming the services such as transportation, insurance, installation, commissioning, training and after-sales service support like AMC/CMC etc. as local value addition.

In view of above, “Local content” will not include services such as transportation, insurance, installation, commissioning, training and after-sales service support like AMC/CMC etc. as local value addition.

In respect of the above eligibility criteria the bidder is required to furnish the following information online:

i) Confirmation in the form of Yes/No regarding possessing of required document indicating percentage of local content as enlisted in NIT.

Scanned copy of documents to be uploaded by bidder(s) in support of information / declaration furnished online by the bidder against Eligibility Criteria as Confirmatory Document.

23. Verification of Local Content

All the Bidders at the time of bidding shall submit self-certification indicating the percentage of local content in the offered items in Undertaking as per format at Annexure X.

All the Bidders shall submit along with its bid a certificate (with UDIN) from the statutory auditor or cost auditor of the company (in case of companies) or from a practicing cost accountant or

practicing chartered account (in respect of suppliers other than companies) giving the percentage of local content (with Annexure X).

Nodal Ministry /CIL/Subsidiary Company may constitute committees with internal and external experts for independent verification of self-declarations/ auditor's/ accountant's certificates on random basis and in the case of complaints.

Nodal Ministry / CIL/Subsidiary Company may prescribe fees for such complaints.

All the Bidders at the time of bidding shall submit either self-certification indicating the percentage of local content in the offered items.

False declarations will attract banning of business of the bidder for a period up to two year and with process in line with Annexure-XVI – Guidelines on Debarment of Firms from Bidding.

A local supplier who has been debarred by any procuring entity for violation of above order shall not be eligible for preference under this Order for procurement by any other procuring entity for the duration of debarment. The debarment for such other procuring entities shall take effect prospectively from the date on which it comes to the notice of other procurement entities.

In terms of the above said policy, purchase preference shall be given to 'Class-I Local Supplier' over 'Class-II Local Supplier'. 'Non-Local Suppliers' are not eligible to participate in the tender.

24. Auto Extension of Critical Date

If number of bids received online is found to be less than 03 (three) on end date of bid submission then the following critical dates of the Tender will be automatically extended for a period of 04 (four) days of the following dates-

- Last date of submission of Bid.
- Date of Opening of Tender.
- Last date of Submission of EMD

If any of the above extended Dates falls on Holiday i.e. a non-working day as defined in the e-Procurement Portal then the same is to be rescheduled to the next working day.

This extension will be also applicable in case of receipt of zero bid.

Notes:

- 1.) The validity period of tender shall be decided based on the final end date of submission of bids.
- 2.) The auto extension shall work on the basis of number of bids received only. It may so happen that any of these bids may be eventually rejected during Tender Opening, Technical evaluation or further process of evaluation resulting the total number of valid bids becoming less than 03 (three).

- 3.) After extension, the tender shall be opened irrespective of available number of bids on the extended date of opening of tender.

25. One Bid per Bidder

25.1 Each Bidder shall submit only one Bid, either individually, or as a proprietor, or as a partner in a partnership firm or as a partner in a joint venture or as a Company registered under Companies Act. A Bidder who submits or participates in more than one Bid (other than as a sub-contractor or in cases of alternatives that have been permitted or requested) will cause all the proposals with the Bidder's participation to be disqualified.

25.2 Conflict of Interest-

A Bidder may be considered to have a Conflict of Interest with one or more parties in this bidding process, if:

- a) they have controlling partner(s) in common; or
- b) they receive or have received any direct or indirect subsidy/financial stake from any of them;
or
- c) they have the same legal representative/agent for purposes of this bid; or
- d) they have relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another Bidder; or
- e) a Bidder or any of its affiliate participated as a consultant in the preparation of the design or technical specification of the contract that is the subject of the bid; or
- f) in case of a holding company having more than one Subsidiary/Sister Concern having common business ownership/management only one of them can bid. Bidders must proactively declare such sister/common business/management in same/similar line of Business;

All such Bidders having a Conflict of Interest, shall be disqualified.

26. Refund of EMD

- A. If EMD is paid by the bidder in online mode (Direct Debit/NEFT/RTGS) then the EMD of rejected bidders will be refunded at any stage directly to the account from where it had been received (except the cases where EMD is to be forfeited).
- B. No claim from the bidders will be entertained for non-receipt of the refund in any account other than the one from where the money is received.
- C. If the refund of EMD is not received by the bidder in the account from which the EMD has been made due to any technical reason then it will be paid through conventional system of e-payment. For this purpose, if required, Tender Inviting Authority will obtain the Mandate Form from the Bidder.
- D. In case the tender is cancelled then EMD of all the participating bidders will be refunded unless it is forfeited by the department.
- E. If the bidder withdraws his/her bid online (i.e. before the end date of submission of tender) then his/her EMD will be refunded automatically after the opening of tender.

- F. At the option of bidder, the EMD of successful bidder (on Award of Contract) will be retained by CIL/Subsidiary Company and will be adjusted to Performance Security Deposit.

27. Site Visit

- 27.1 The bidder, at the Bidder's own responsibilities, cost and risk, is encouraged to visit and examine the Site of Works and its surrounding, approach road, soil condition, investigation report, existing works, if any, connected to the tendered work, drawings connected to the work, if / as available and obtain all information that may be necessary for preparing the Bid and entering into a contract for execution of the works. The cost of visiting the Site shall be at the Bidder's own expense.
- 27.2 It shall be deemed that the Bidder has visited the Site/Area and got fully acquainted with the working conditions and other prevalent conditions and fluctuations thereto whether he/she/they actually visits the Site /Area or not and has taken all the factors into account while quoting his/her/their rates.
- 27.3 The Bidder, in preparing the bid, shall rely on the site investigation report referred to in the bid document (if available), supplemented by any information available to the Bidder.
- 27.4 The Bidder is expected, before quoting his rate, to go through the requirement of materials/workmanship, specification, requirements and conditions of contract.
- 27.5 The Bidder must request for permission to visit the site from the Employer through email at least 3 days prior to the planned visit.
- 27.6 The Bidder and any of its personnel or agents will be granted permission by the Employer to enter upon its premises and lands for the purpose of such inspection, but only upon the express condition that the Bidder, its personnel and agents will release and indemnify the Employer and its personnel and agents 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.

28. Taxes and Duties

- 28.1 All duties, taxes (excluding Goods and Services Tax (GST) & GST Compensation Cess (if applicable) only) and other levies, royalty, building and construction workers cess (as applicable in States) payable by the bidder/Contractor under the Contract, or for any other cause as applicable on the last date of submission of Bid, shall be included in the rates, prices and the total Bid Price submitted by the Bidder. Applicable GST, if any, either payable by bidder or by company under reverse charge mechanism shall be computed by system in BOQ sheet as per predefined logic.

- 28.2 All investments, operating expenses, incidentals, overheads, leads, lifts, carriages, tools and plants etc. as may be attendant upon execution and completion of works shall also be included in the rates, prices and total Bid price submitted by the bidder.
- 28.3 However, such duties, taxes, levies etc. which is notified after the last date of submission of Bid and/or any increase over the rate existing on the last date of submission of Bid shall be reimbursed by the company on production of documentary evidence in support of payment actually made to the concerned authorities.
- 28.4 Similarly, if there is any decrease in such duties, taxes and levies the same shall become recoverable from the contractor. The details of such duties, taxes and other levies along with rates shall be declared by the bidder.
- 28.5 The item wise rate quoted by bidder shall be inclusive of all taxes, duties & levies but excluding GST & GST Compensation Cess, if applicable. The payment of GST and GST Compensation Cess by service availer (i.e. SECL) to bidder/contractor (if GST payable by bidder/contractor) would be made only on the latter submitting a Bill/invoice in accordance with the provision of relevant GST Act and the rules made there under and after online filing of valid return on GST portal. Payment of GST & GST Compensation Cess is responsibility of the service provider/contractor.
- 28.6 Further, any GST credit note required to be issued by the bidder / contractor under the GST provisions should be issued within the time limit prescribed under the GST law.
- 28.7 However, in case bidder/contractor is GST unregistered bidder/dealer or GST registered under composition scheme in compliance with GST rules, the bidder/dealer shall not charge any GST and/or GST Compensation Cess on the bill/invoice. In case of unregistered dealer/bidder, GST, if applicable will be deposited by SECL directly to concerned authorities in terms with GST provisions.
- 28.8 Input tax credit is to be availed by SECL as per rule.
- 28.9 If SECL fails to claim Input Tax Credit(ITC) on eligible Inputs, input services and Capital Goods or the ITC claimed is disallowed due to failure on the part of supplier/vendor of goods and services in incorporating the tax invoice issued to SECL in its relevant returns under GST, payment of CGST & SGST or IGST, GST (Compensation to State) Cess shown in tax invoice to the tax authorities, issue of proper tax invoice or any other reason whatsoever, the applicable taxes & cess paid based on such Tax invoice shall be recovered from the current bills or any other dues of the supplier/vendor along with interest and penalty, if any.
- 28.10 The rates and prices quoted by the Bidder shall be fixed for the duration of the contract and shall not be subject to variations on any account except to the extent variations allowed as per the conditions of the contract of the bidding document.

28.11 The company reserves the right to deduct/ withhold any amount towards taxes, levies, etc. and to deal with such amount in terms of the provisions of the Statute or in terms of the direction of any statutory authority and the company shall only provide with certificate towards such deduction and shall not be responsible for any reason whatsoever.

28.12 In case of collection of minor minerals in area (both virgin and non-virgin), acquired by the Company under the Coal Act, the contractor will have to produce a royalty clearance certificate from the District Authorities before full and final payment.

28.13 Further, where any damages or compensation becomes payable by either the Company or the bidder / contractor pursuant to any provision of this Agreement, appropriate GST wherever applicable as per the GST provisions in force shall also apply in addition to such damages or compensation.

Note: During the execution of the contract if the GST status of the bidder changes, then the payment of GST, if any, to the contractor will be made as per the GST status declared by the bidder during tender stage based on which cost to company has been ascertained or at actuals, whichever is lower.

29. Cost of Bidding

The bidder shall bear all costs associated with the preparation and submission of his bid and the Employer will in no case be responsible or liable for those costs.

30. Technical Specifications

30.1 The tenderer shall closely study all specifications in detail, which govern the rates for which he is tendering.

30.2 The modules to be procured by the Contractor as per provision as contained in the O.M. dated 10.03.2021 issued by MNRE on the subject “Approved Models and Manufacturers of Solar Photovoltaic Modules (Requirement of Compulsory Registration) Order, 2019-Implementation-Reg.” and its subsequent amendments and clarifications (including MNRE’s clarification ref. no. F. No. 283/54/2018- GRID SOLAR-Part (1) dated 11.05.2021), shall be applicable for this Tender.

31. Currencies of Bid and Payment

The unit rates and prices shall be quoted by the Bidder entirely in Indian Rupees only.

32. Handing Over of Site

On completion of the work all rubbish, debris, brick bats etc. shall be removed by the contractor(s) at his/their own expense and the site cleaned and handed over to the company and he/they shall intimate officially of having completed the work as per contract.

33. Deployment of Manpower and Machineries

The tenderer(s) will deploy sufficient number and size of equipment's/machineries/vehicles and the technical/ supervisory personnel required for execution of the work.

34. Change in Constitution of the Contracting Agency

Prior approval in writing of the company shall be obtained before any change is made in the constitution of the contracting agency, otherwise it will be treated as a breach of Contract.

35. Canvassing in Tender

Canvassing in connection with the tenders in any shape or form is strictly prohibited and tenders submitted by such tenderers who resort to canvassing shall be liable for rejection.

36. Letter of Award (LOA)

The Bidder, whose Bid has been accepted, will be notified /communicated by the Employer electronically online on the e-procurement portal of CIL prior to expiration of the Bid validity period. The L-1 bidder will get the information regarding award of work on their personalised dash-board on-line. On receipt of Letter of Award (LOA) of the tender issued by the Owner, the successful tenderer shall execute contract agreement in the company's prescribed form for the due fulfilment of the contract. Failure to enter into the required contract within the specified period in the work order shall entail cancellation of LOA and forfeiture of the Earnest Money. In addition, the department may debar the bidder from participating in future bids as per Annexure-XVI – Guidelines on Debarment of Firms from Bidding.

37. Bid Validity

The validity period of the tenders shall be **90 (Ninety)** days from the end date of bid submission. The validity period of tender shall be decided based on the final end date of submission of bids. In exceptional circumstances, prior to expiry of the original time limit, the Employer may request the bidders to extend the period of validity for a specified additional period. The employer's request and the bidder's responses shall be made in writing. A bidder may refuse the request without forfeiting his bid security. A bidder agreeing to the request will not be required or permitted to modify his bid.

The tenderer shall not, during the said period or within the period extended by mutual consent, revoke or cancel his tender or alter the tender or any terms/conditions thereof without consent in writing of the company. In case the tenderer violates to abide by this, the Company will be entitled to take action as per clause No. 38 (Modification and Withdrawal of Bid) of NIT.

38. Modification and Withdrawal of Bid

Modification of the submitted bid shall be allowed on-line only before the deadline of submission of tender and the Bidder may modify and resubmit the bid on-line as many times as he may wish.

Bidders may withdraw their bids online within the end date of bid submission and their EMD will be refunded. However, if the Bidder once withdraws his bid, he will not be able to resubmit the bid in that particular tender. For withdrawal of bid after the end date of bid submission, the Bidder will have to make a request in writing to the Tender Inviting Authority. Withdrawal of bid may be allowed till issue of work order/LOA with the following provision of penal action:

The penal actions are

1. If the request of withdrawal is received before online notification for opening of price bid, the EMD will be forfeited and Bidder will be debarred from participating in tenders in CIL/Subsidiary as per Annexure-XVI. The Price-bid of remaining Bidders will be opened and the tender process shall go on.
2. If the request of withdrawal is received after online notification for opening of price bid, the EMD will be forfeited and the Bidder will be debarred from participating in tenders in CIL/Subsidiary as per Annexure-XVI. The Price-bids of all eligible Bidders including this Bidder will be opened and action will follow as under:
 - i. If the Bidder withdrawing his bid is other than L-1, the tender process shall go on.
 - ii. If the Bidder withdrawing his bid is L-1, then re-tender will be done.

Note:

- a) In case the Accepting Authority of the work is Board or Empowered Committee or FDs or CMD of CIL/Subsidiary Company, then the Competent Authority for forfeit of EMD and debarment shall be CMD of CIL/Subsidiary Company.
- b) In case the Accepting Authority of the work is up to the level of Director of CIL/Subsidiary Company, then the Competent Authority for forfeit of EMD and debarment shall be Director of CIL/Subsidiary Company.
 - i. In case of above penal actions, Guidelines on Debarment of Firms from Bidding is to be followed.
 - ii. Penal action against clauses above will be enforced from the date of issue of such order.
 - iii. The standard operating procedure to handle withdrawal of bid after end date of submission shall be as per Guidelines for e-Procurement of Works and Services.

39. Postponement of scheduled date(s)

The Company reserves the right to postpone the date of receipt and opening of tenders or to cancel the tenders without assigning any reason whatsoever.

40. Contract Agreement Document(s)

This Tender Notice shall be deemed to be part of the Contract Agreement. The “General Terms & Conditions”, Additional Terms & Conditions, Special Conditions of Contract (SCC), Technical Specifications, drawings (if any) and any other document uploaded on portal as NIT document forms an integral part of this NIT and shall also form a part of the contract agreement as per clause 2 of General Terms and Conditions.

41. Sub-letting of Work

The contract agreement will specify major items of supply of services for which the contractor proposes to engage Sub-Contractor/ Sub-Vendor. The contractor may from time to time propose any addition or deletion from any such list and will submit the proposals in this regard to the Engineer in Charge/ Designated Officer in Charge for approval well in advance so as not to impede the progress of work. Such approval of the Engineer in Charge/ Designated Officer will not relieve the contractor from any of his obligation, duties and responsibilities under the contract.

If a contractor submits his bid, qualifies and does not get the contract because of his not being the lowest, he will be prohibited from working as a sub-contractor for the contractor who is executing the work.

The total value of subcontracted work should not exceed 25% of the total contract value. Sub-contracting by the contractor without the approval of the Procuring Entity shall be a breach of contract, unless explicitly permitted in the contract. Procurement of material, hiring of equipment or engagement of labour will not mean sub-contracting.

42. Prohibition of Child Labour engagement

The contractor/contractual Agencies must not engage any Child Labour during the course of execution of the contract work within the meaning and scope of the Child Labour Prohibition & Regulation Act-1986 and its relevant Act and Rules amended from time to time by the Govt. of India.

43. Implementation of CMPF/EPF

The tenderer shall have to ensure implementation of CMPF/EPF, if applicable, in respect of the workers deployed by him as detailed in the tender document.

44. Splitting up of the work

The Company does not bind itself to accept the lowest tender and reserves the right to reject any or all the tenders without assigning any reasons whatsoever. The work of "Setting up of Grid Connected 40 MW Ground Mounted Solar PV plant" is not splittable.

45. Settlement of Disputes

Matters relating to any dispute or difference arising out of this tender and subsequent contract Awarded based on this tender, shall be dealt as per Clause No. 19 and 20 - of the 'General Terms and Conditions' of the tender document.

46. Restrictions on Procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries.

The guidelines as per order no.F.No.6/18/2019-PPD dt 23/7/2020 of Ministry of Finance, GoI as amended from time to time shall be applicable.

- I. Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority.
- II. “Bidder” (including the term ‘tenderer’, ‘consultant’ or ‘service provider’ in certain context) means any person or firm or company, including any member of a Joint venture (that is an association of several persons or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated herein before, including any agency, branch or office controlled by such person, participating in a procurement process.
- III. “Bidder from a country which shares a land border with India” for the purpose of order F.No. 6/18/2019-PPD dated 23.07.2020 means:-
 - a. An entity incorporated, established or registered in such a country; **or**
 - b. A subsidiary of an entity incorporated, established or registered in such a country; **or**
 - c. An entity substantially controlled through entities incorporated, established or registered in such a country; **or**
 - d. An entity whose beneficial owner is situated in such a country; **or**
 - e. An Indian (or other) agent of such an entity; **or**
 - f. A natural person who is a citizen of such a country; **or**
 - g. A joint venture where any member of the joint venture falls under any of the above.
- IV. “The beneficial owner” for the purpose of (III) above will be as under:
 1. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person(s), has a controlling ownership interest or who exercises control through other means.

Explanation-

- a. “Controlling ownership interest” means ownership of, or entitlement to more than Twenty Five Percent of shares or capital or profits of the company;
 - b. “Control” shall include the right to appoint the majority of the directors or to control the management or policy decisions, including by virtue of their shareholding or management rights or shareholders agreements or voting agreements;
2. In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;
 3. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals.
 4. Where no natural person is identified under (1) or (2) or (3) above, the beneficial owner is the relevant natural person who holds the position of senior managing official.
 5. In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.

- V. An Agent is a person employed to do any act for another, or to represent another in dealings with third person.
- VI. The successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the competent Authority.

Note:

1. (a) The intending bidders must submit the Undertaking as Annexure-VIII in compliance to order no.F.No.6/18/2019-PPD dt 23/7/2020 and as amended from time to time of Ministry of Finance, GoI.

AND

- (b) Valid registration from competent authority (if applicable). Registration should be valid at the time of submission of bid and at the time of acceptance of bids.
2. Guidelines issued by GoI regarding registration with Competent Authority and regarding exclusion from restriction may please be referred.

The laws applicable to this contract shall be the laws in force in India. The District Court where the subject work is executed or High Court of Kolkata shall have exclusive jurisdiction in all matters arising under this contract.

If the bidder is a subsidiary of a company, the experience and resources of the holding company or its other subsidiaries will not be taken into account. However, if the bidder is a holding company, the experience and resources of its wholly owned subsidiaries will be taken into consideration.

47. Integrity Pact (applicable).

Bidders are required to submit the Pre-Contract Integrity Pact duly signed & witnessed as per enclosed format, Annexure-VIII, along with the bid Part-I/cover-I. This will be signed by the authorized signatory of the bidder (s) with name, designation and seal of the company. Bidder(s) who do not sign the pact shall be disqualified from participation in the bid process.

Code of Integrity for Public Procurement (CIPP)

Bidders are required to accept the CIPP as available in the Bid document (Annexure -IV) online at e-procurement portal of CIL. This will be signed by the authorized signatory of the Bidder (s) with name, designation and seal of the Company at time of execution of formal agreement. In case of Partnership Firms/JV/CONSORTIUM all partners shall sign at the time of agreement.

Name, address and contact No. of the Independent External Monitor (IEM) nominated for this tender:

Sl. No.	Name	Address	E-mail ID	Mobile No.
1.	Mr. Nirmal Kaur, IPS (Retd.)	House No. 8, Plot-615, Ro Jawahar Nagar, Mango, Ja Jharkhand - 832110	nirmalkaur1983@gmail.com	9304795041
2.	Shri O.P. Singh, IPS (Retd.)	M-6, First Floor, Green Park Extension, New Delhi - 110016	ops2020@gmail.com	9818564455
3.	Shri. K. D. IAS(Retd.)	A-5, Sector-19, Noida, UP - 201301	tripathikd.1958@gmail.com	9868506966

48. Insurance

- 48.1 To the extent specified in the Contract Agreement, the Contractor shall at its expense take out and maintain in effect or cause to be taken out and maintained in effect, during the performance of the Contract, the insurances set forth below in the sums and with the deductibles and other conditions. The identity of the insurers and the form of the policies shall be subject to the approval of the Owner, who should not unreasonably withhold such approval.
- 48.2 During the Contract period including O&M period, i.e., during Construction & O&M period, all insurance related expenses shall be borne by the Contractor. The goods supplied under the Contract shall be fully insured against the loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in such a manner that Owner shall not incur any financial loss, as long as the plant continues to remain under the custody of the Contractor. During O&M period also (after the Construction period is over), the insurances shall be in the scope of the Contractor.
- 48.3 In case of any loss or damage or pilferage or theft or fire accident or combination of the said incidents etc. under the coverage of insurance, the Contractor shall lodge the claim as per rules of insurance. Any FIR required to be lodged to local Police Station shall be the responsibility of the Contractor.
- 48.4 The Contractor shall arrange to supply/ rectify/ recover the materials without waiting for settlement of the insurance claim and even if the claim is unsettled for timely completion of the project. The final financial settlement with the insurance company shall rest upon the Contractor.
- 48.5 In case of any delay of the project attributable to the Contractor, the Contractor himself in consultation with Owner/EMPLOYER shall take the extension of insurance. Any financial implications shall be borne by the Contractor.
- 48.6 The Contractor should arrange for providing insurance coverage to its workmen under Workmen's Compensation Act or similar Rules and Acts as applicable during execution of work for covering risk against any mishap to its workmen. The Contractor shall also undertake a Third-Party Insurance and shall at all times keep Owner indemnified against any Third-Party claims and shall arrange to settle them at the earliest. SECL will not be liable for any such loss or mishap.
- 48.7 All other insurance like – transit insurance (Marine/ Cargo/ others as applicable), Construction All Risk, Erection All Risk, workmen compensation, fire, third party liability, insurance against theft, Contractor's Equipment, machinery breakdown policy, business interruption insurance, Property damage Insurance & Environmental risk insurance as required during the Construction and O&M period of the Plant shall be in the contractor's scope & shall borne by the Contractor.

- 48.8 Owner shall be named as co – insured under all insurance policies taken out by the Contractor, except for the workmen compensation, third party liability and Owner’s liability insurances. All insurers’ rights of subrogation against such co – insured for losses or claims arising out of the performance of the contract shall be waived under such policies.
- 48.9 All the insurance cover taken for the construction and O&M period shall be seamless in nature & preferably taken from the same insurance company. The insurance is to be suitably taken for the activity/ act which is required to cover all the risks associated to the activity / act. The Contractor shall be responsible to take suitable insurance till the completion of the O&M contract and indemnify the EMPLOYER/Owner from all associated risks whatsoever.
- 48.10 The Contractor shall be responsible to take suitable insurance(s) and claim management during and till the completion of the O&M contract and indemnify the Owner from all associated risks whatsoever.

49. Various Types of Insurance to be taken by Contractor during Construction & O&M period:

49.1 Employees State Insurance (ESI) Act

- A. The Contractor agrees to and does hereby accept full and exclusive liability for the compliance with all obligations imposed by the Employee State Insurance Act 1948 and the Contractor further agrees to defend, indemnify and hold EMPLOYER/ Owner harmless for any liability or penalty which may be imposed by the Central, State or Local authority by reason of any asserted violation by Contractor or Sub-Contractor of the Employees' State Insurance Act, 1948, and also from all claims, suits or proceeding that may be brought against the EMPLOYER/ Owner arising under, growing out of or by reasons of the work provided for by this Contractor, by third parties or by Central or State Government authority or any political sub- division thereof.
- B. The Contractor agrees to fill in with the Employee's State Insurance Corporation, the Declaration Forms, and all forms which may be required in respect of the Contractor's or Sub-Contractor's employees, who are employed in the Work provided for or those covered by ESI from time to time under the Agreement. The Contractor shall deduct and secure the agreement of the Sub-Contractor to deduct the Employee's contribution as per the first schedule of the Employee's State Insurance Act from wages and affix the Employees Contribution Card at wages payment intervals.
- C. The Contractor shall remit and secure the agreement of Sub-Contractor to remit to the Employee's State Insurance Corporation Account, the Employee's contribution as required by the Act. The Contractor agrees to maintain all cards and Records as required under the Act in respect of employees and payments and the Contractor shall secure the agreement of the Sub-Contractor to maintain such records. Any expenses incurred for the contributions, making contributions or maintaining records shall be to the Contractor's or Sub-Contractor's account.

49.2 Workmen Compensation and EMPLOYER's/Owner's Liability Insurance

Insurance shall be effected for all the Contractor's employees engaged in the performance of this Contract. If any of the work is sublet, the Contractor shall require the Sub-Contractor to provide workman's Compensation and Owner's liability insurance for the latter's employees if such Employees are not covered under the Contractor's Insurance.

49.3 Accident or Injury to Workmen

The EMPLOYER/ Owner shall not be liable for or in respect of any damages or compensation payable at law in respect or in consequence of any accident or injury to any workman or other person in the Employment of the Contractor or any Sub-Contractor and the Contractor shall indemnify and keep indemnified the EMPLOYER/ Owner against all such damages and compensation (save and except and aforesaid) and against all claims, demands, proceeding, costs, charges and expenses, whatsoever in respect or in relation thereto.

49.4 Transit/Cargo Insurance

In respect of all items to be transported by the Contractor to the Site of Work and any consequential risks, the cost of transit insurance shall be borne by the Contractor and the quoted price shall be inclusive of this cost.

Covering loss or damage occurring, while in transit from the supplier's or manufacturer's works or stores until arrival at the Site, to the Facilities (including spare parts therefor) and to the construction equipment to be provided by the Contractor or its Subcontractors.

Amount	Deductible Limits	Parties Insured	From	To
110% of the Ex-works value of supply	Nil	Contractor and Owner	Ware House	Ware House + 60 Days

49.5 Comprehensive Automobile Insurance

This insurance shall be in such a form as to protect the Contractor against all claims for injuries, disability, disease and death to members of public including EMPLOYER's/ Owner's men and damage to the property of others arising from the use of motor vehicles during on or off the site operations, irrespective of the EMPLOYER ship of such vehicles.

49.6 Group Personal Insurance

The Contractor shall take full responsibility to take all precautions to prevent loss or damage to the works or part thereof for any reasons whatsoever (except for reasons which are beyond control of the Contractor or act of God, e.g. flood, riots, war, earthquake, etc.) and shall at his own cost repair and make good the loss/damage to the work so that on completion, the work shall be in good order and condition and in conformity with the requirements of the contract and instructions of the Engineer-in-charge, if any:

- a) The Contractor shall at all times during the pendency of the contract indemnify the company against all claims, damages or compensation under the provisions of the Workmen's Compensation Act and shall take insurance policy covering all risk, claims, damages or compensation payable under the Workmen's Compensation Act or under any other law relating thereto.
- b) The Contractor shall pay directly the ex-gratia amount of [Rs 15 lakhs or such other amount as decided by the Company from time to time] to the same dependent as per the terms of the contract or through insurance company by availing Group Personal Accident Insurance Policy

for all its worker before commencement of the contract, which shall be renewed periodically to cover the entire duration of the contract. No reimbursement shall be made on this account by CIL/ Subsidiaries.

In order to comply with the above provisions, Contractor shall immediately on receipt of letter of acceptance / work order shall obtain group personal accident insurance in respect of the workmen engaged in mining activities to assure such payment of Rs 15 lakhs* in case of death in accident within project premise within 30 days. A proof to such effect shall be produced to the satisfaction of the management before commencement of the work.

However, the responsibility of payment of special relief / ex-gratia amount shall be exclusively with the Contractor. If the Contractor fails to disburse the special Relief / Ex-gratia within the due date, the subsidiary concerned may make the payment to the eligible dependent as mentioned herein above.

However, such amount shall be recovered from the Contractor from his dues either in the same and / or other subsidiaries /CIL.

- c) The Contractor shall ensure that the insurance policy/policies are kept alive till full expiry of the contract by timely payment of premiums and shall not be cancelled without the approval of the company and a provision is made to this effect in all the policies, and similar insurance policies are also taken by his sub-Contractors if any. The cost of premiums shall be borne by the Contractor and it shall be deemed to have been included in the quoted rate.
- d) In the event of Contractor's failure to effect or to keep in force the insurance referred to above or any other insurance which the Contractor is required to effect under the terms of the contract, the company may effect and keep in force any such insurance and pay such premium/premiums as may be necessary for that purpose from time to time and recover the amount thus paid from any moneys due by the Contractor. The Contractor shall whenever required produce before Engineer-in-charge the policy or policies of insurance and receipt of payment of the current premium. This insurance shall protect the Contractor against all claims arising from injuries, disabilities, disease or death of member of public or damage to property of others due to any act or omission on the part of the Contractor, his agents, his employees, his representatives and Sub-Contractor's or from riots, strikes and civil commotion.

49.7 Module Performance Insurance:

To ensure faithful performance of PV modules, Contractor must submit insurance before dispatch with a coverage of minimum 6 % of 60% of the total Contract Price for 25 years, with the SPD as its beneficiary. However, the Contractor may also submit the insurance with a coverage of minimum 6% of the total order value of the Solar PV Modules envisaged under the contract, subjected to submission of the required documents (invoices, receipts, Purchase Order etc.). Any financial implication encountered due to insurance shall be borne by the Contractor. The Contractor's insurance liabilities pertaining to the scope of works are detailed out in elsewhere in contract Document.

- I. The module should be insured as per the following clauses and are to be complied: In the case of domestic manufacturers, insurance shall be taken from the list of insurers as per Annexure

of the Circular of MNRE, issued vide OM Dated 07.01.2020 with regard to Insurance Products for Solar Power Plants.

II. In case of insolvency of the contractor, the SPD under the terms of the insurance policy against Module Performance and Warranty shall be entitled to raise a claim against the Module Warranty Insurance Policy and in order to benefit from the coverage provided by the aforementioned policy. The Contractor shall be responsible for maintaining the coverage provided under the Module Warranty Insurance Policy at all times, at its cost and expense.

III. Further, the Contractor to note that SPD requires the following to be complied while covering the Warranty/Guarantee/Performance of the supplied goods under the insurance:

a) Single Insurance Policy for Product Warranty/Guarantee and performance before dispatch of the first lot of PV Modules Insurance.

b) The Insurance Policy shall be valid for a minimum period of twenty-five (25) years from the date of receipt of last batch/lot of equipment at site.

c) The premium charges, recurring charges, any other expenditure under the Insurance Policy shall be covered by the Contractor.

d) The insurer must continue to compensate end users for warranty claims for the product quality and/or performance even if contractor ceases to exist as an independent operating company.

e) The insurance shall be non-cancellable by the insurer and shall provide third party bankruptcy rights.

f) Coverage under the insurance policy shall be immediate, without any waiting period.

49.8 The Contractor shall also arrange suitable insurance to cover following during the O&M Period:

a) Machinery Breakdown: Electrical & or machinery breakdown of any machinery or other equipment resulting in costly repairs or even replacement of the solar panel.

b) Business Interruption: Cover for period of operational downtime i.e., covering the cash flow of the solar business as a result of an insured peril, for example fire or storm damage, machinery breakdown or equipment failure.

c) Property Damage: The insurance should cover material damage due to external causes such as fire, theft, vandalism, sabotage, hail damage, snow load, lightning strike, overload, operational mistakes, clumsiness, negligence & theft.

- d) EMPLOYERs Liability: Provides cover against the risk of accident from usual workplace risks such as working at height & manual handling during construction & O&M period.
- e) Environmental Risk Insurance: Environmental damage coverage indemnifies solar system owners of the risk of either environmental damage done by their development or pre-existing damage on the development site.

49.9 ANY OTHER INSURANCE REQUIRED UNDER LAW OR REGULATIONS OR BY OWNER:

Contractor shall also carry and maintain any and all other insurance(s) which he may be required under any law or regulation from time to time without any extra cost to Owner. He shall also carry and maintain any other insurance which may be required by the Owner.

Amount	Deductible Limits	Parties Insured	From	To
To be indicated by the contractor	Nil	Contractor, and Owner	Receipt at Site	Upto Defect Liability period

49.10 Damage to Property or to any Person or any Third Party Contractor shall be responsible for making good to any loss or any damage to structures and properties belonging to the Owner or being executed or procured or being procured by the Owner or of other agencies within in the premises of all the work of the Owner, if such loss or damage is due to fault and/ or the negligence or willful acts or omission of the Contractor, his employees, agents, representatives or Sub-Contractors. The Contractor shall take sufficient care in moving his plants, equipment and materials from one place to another so that they do not cause any damage to any person or to the property of the EMPLOYER/ Owner or any third party including overhead and underground cables and in the event of any damage resulting to the property of the Owner or of a third party during the movement of the aforesaid plant, equipment or materials the cost of such damages including eventual loss of production, operation or services in any plant or establishment as estimated by the EMPLOYER/ Owner or ascertained or demanded by the third party shall be borne by the Contractor. Third party liability risk shall be INR 1 (One) Lakh for single accident and limited to INR 10 (Ten) Lakhs.

The Contractor shall indemnify and keep the EMPLOYER/ Owner harmless of all claims for damages to property other than EMPLOYER's/ Owner's property arising under or by reason of this agreement, if such claims result from the fault and/ or negligence or wilful acts or omission of the Contractor, his employees, agents, representative of Sub-Contractor.

50. Mobilization Advance (Optional):

50.1 A maximum of 10% of the Supply Contract value may be paid as mobilization advance subject to submission of Bank Guarantee for 110% advance amount.

50.2 Mobilization Advance against supply of equipment shall be released as per provision mentioned in Payment Terms. (in SCC).

50.3 The mobilization advance of 10% shall be proportionately adjusted from the running bills of the contractor during initial 70% payment of “Supply contract”.

Though the ‘Mobilization Advance’ shall be given interest free but the interest shall be charged as per the rate of SECL’s borrowing rate under cash credit arrangement as varying from time to time to be compounded quarterly, on delayed recoveries either due to the late submission of bill by the Contractor or any other reason attributable to the Contractor besides the reason giving rise to encashment of BG as stated in the Clause 50 of NIT - ‘Mobilization Advance’.

In addition to the above, interest will be charged as per aforesaid rate on Mobilization Advance in case the contract is terminated due to default of the Contractor.

50.4 The value of Bank Guarantee may be reduced to the extent such advance is recovered by the company subject to the conditions that the value of Bank Guarantee amount at any time is more than the recoverable outstanding advance. Bank Guarantee shall be irrevocable and from a Nationalized Bank/Scheduled Bank.

50.5 Part Bank Guarantee” (BGs) against the Mobilization Advance shall be taken in as many numbers as the proposed recovery instalments and shall be equivalent to 110% of the amount of each instalment.

50.6 In case of “Machinery and Equipment advance”, insurance and hypothecation to the employer shall be ensured.

50.7 Mobilization advance will be given in instalments and subsequent instalments will be released after getting satisfactory utilization Certificate from the contractor for the earlier instalments.

**SECTION -II: GENERAL TERMS AND
CONDITIONS OF CONTRACT**

1.0 DEFINITIONS:

- i. The word "Company" or "Employer" or "Owner" wherever occurs in the conditions, means the South Eastern Coalfields Limited, represented at the headquarters of the Company by the or his authorized representative or any other officer specially deputed for the purpose.
 - ii. The word "Principal Employer" wherever occurs, means the authorized representative or any other officer specially deputed by the Company for the purpose.
 - iii. The word "Contractor"/"Contractors" wherever occurs means the successful Bidder/Bidders who has/have deposited the necessary Earnest Money and has/have been given written intimation about the acceptance of tender and shall include legal representative of such individual or persons composing a firm or a Company or the successors and permitted assignees of such individual, firm or Company, as the case may be.
 - iv. "The Site" shall mean the site of the contract work including land and any building and erections thereon and any other land allotted by the Company for Contractor's use.
 - v. 'Tender Accepting Authority (TAA)/ Awarding Authority' shall mean the management of the Company and includes an authorized representative of the Company or any other person or body of persons empowered in this behalf by the Company to approve the Tender. Tender Accepting Authority (TAA)/Awarding Authority at any time after the award of tender till the finalization of contract shall be construed as the authority as per the prevalent DoP of CIL/CIL Manuals.
- Note: Interpretation of Tender Accepting Authority (TAA)/ Awarding Authority as above is applicable for the existing and future contracts.
- vi. A 'Day 'shall mean a day of 24 hours from midnight to midnight.
 - vii. "Engineer-In-Charge/Designated Officer-in-charge" who is of an appropriate seniority will be responsible for supervising and administering the contract, certifying payment due to the Contractor, valuing variations to the contract, awarding extension of time and valuing compensation events. Engineer-In- Charge/Designated Officer-in-charge may further appoint his representatives i.e. another person/ Project Manager or any other competent person and notify to the Contractor who is directly responsible for supervising the work being executed at the site, on his behalf under the Delegation of Powers of the Company. However, overall responsibility, as far as the contract is concerned will be that of the Engineer-In-Charge/Designated Officer-in-charge.
 - viii. The 'Contract' shall mean the Notice Inviting Tender, the tender as accepted by the Company and the formal agreement executed between the Company and the Contractor together with the documents referred to therein including General Terms and Conditions, Special Conditions, if any, schedule of quantities with rates and amounts, Schedule of work. Until the formal

agreement is signed between the Owner and the Contractor, LOA/Work Order together with Contract Document, shall constitute the Contract.

- ix. The 'Works' shall mean the works required to be executed in accordance with the contract or parts thereof as the case may be and shall include all extra or additional or any work of emergent nature, which in the opinion of the Engineer-In-Charge, become necessary during the progress of the works to obviate any risk or accident or failure or become necessary for security.
- x. 'Schedule of Rates' referred to in these conditions shall mean the standard schedule of rates prescribed by the Company and the amendments issued from time to time.

Note: -Functional Directors of Subsidiaries to approve the Schedule of Rates for Coal Transportation, wagon Loading, etc.

- xi. 'Contract price' shall mean
 - a) in the case of lump sum contracts the total sum for which tender is accepted by the Company.
 - b) in the case of other types of contracts, the total sum arrived at based on the individual rates quoted by the tenderer for the various items shown in the 'Bill of quantities' of the tender documents as accepted by the Company with or without any alteration as the case may be.
- xii. 'Written notice' shall mean a notice or communication in writing and shall be deemed to have been duly served if delivered in person to the individual or to a member of the firm or to an office of the Corporation/Company for whom it is intended, or if delivered at or sent by registered mail to the last business address known to him who gives the notice.

2.0 CONTRACT DOCUMENTS:

The following documents shall constitute the contract documents:

- (i) Articles of Agreement,
- (ii) Notice Inviting Tender and Instruction to Bidders,
- (iii) Conditions of Contract, including General Terms and Conditions, Additional Terms and Conditions, Special Conditions, if any etc. forming part of the Agreement,
- (iv) Letter of Acceptance of Bid indicating deviations, if any, from the Conditions of Contract incorporated in the Bid/Tender document issued to the Bidder,
- (v) Scope of works/Bills of Quantities,
- (vi) Finalized work programme,
- (vii) Integrity Pact as applicable as decided by different Subsidiary Companies
- (viii) Guidelines on Debarment of firms from Bidding,
- (ix) Code of Integrity for Public Procurement.
- (x) Any other document, if required.

2.1 After acceptance of tender the Contractor shall be deemed to have carefully examined all Contract Documents to his satisfaction. If he shall have any doubt as to the meaning of any portion of the Contract Documents, he shall before signing the Contract, set forth the particulars thereof,

and submit them to the Owner in writing in order that such doubt may be removed. The Owner will provide such clarifications as may be necessary in writing to the Contractor. Any information otherwise obtained from the Owner or the Engineer shall not in any way relieve the Contractor of his responsibility to fulfill his obligations under the Contract.

2.2 The Contractor shall enter into a Contract Agreement with the Owner within 60 (sixty) days from the date of 'Acceptance of Tender' or within such extended time as may be granted by the owner. The performance Bank Guarantee for the proper fulfilment of the contract shall be furnished by the contractor in the prescribed form within twenty one (21) days of 'Acceptance of tender'. The performance Guarantee shall be as per terms prescribed in clause 4.0 of General Terms and Conditions of Contract herein after.

2.3 The owner, after the issue of the letter of Acceptance of Tender, will send one copy of the final agreement to the contractor for his scrutiny and approval.

2.4 The agreement, unless otherwise agreed to, shall be signed within 60 days of the issue of the letter of Acceptance of tender, at the office of the owner on a date and time to be mutually agreed. The contractor shall provide for signing of the contract, performance guarantee in copies as required, appropriate power of attorney and other requisite materials. In case it is agreed mutually that the contract is to be signed beyond the stipulated time, the bid guarantee submitted with the tender will have to be extended accordingly.

2.5 The agreement will be signed in six originals and the contractor shall be provided with one signed original and the rest will be retained by the owner. None of these documents shall be used by the contractor for any purpose other than this contract and the contractor shall ensure that all persons employed for this contract strictly adhere to this and maintain secrecy, as required of such documents.

2.6 The contractor shall provide free of cost to the owner all the engineering data, drawings and descriptive materials submitted with the bid, in at 2 (two) copies to form a part of the contract immediately after issue of letter of acceptance.

2.7 Subsequent to signing of the contract, the contractor at his own cost shall provide the owner with at least two (2) true copies of agreement within thirty (30) days after the signing of the contract.

2.8 The date of commencement shall be reckoned from the expiry of 30 days from the issue of letter of acceptance and submission of Performance Security or seven days after handing over the site for the first activity as per PERT network chart, whichever is later.

2.9 The laws applicable to this contract shall be the laws in force in India. The courts of Bilaspur, Chhattisgarh shall have exclusive jurisdiction in all matters arising under this contract.

3.0 DISCREPANCIES AND ADJUSTMENTS THEREOF:

The documents forming part of the contract are to be treated as mutually explanatory.

3.1 In the event of varying or conflicting provisions made in any of the document/documents forming part of the contract, the Tender Accepting Authority's decision/clarification shall hold good with regard to the intention of the document or contract, as the case may be.

3.2 Any error in description, quantity or rate in schedule or quantities or any omission therefrom, shall not vitiate the contract or release the Contractor from discharging his obligations under the contract including execution of work according to the specifications forming part of the particular contract document.

4.0 SECURITY DEPOSIT:

4.1 Security Deposit shall consist of two parts:

- a) Performance Security to be submitted at award of work and
- b) Retention Money to be recovered from running bills.

The Security Deposit shall bear no interest.

4.2 Performance Security (first part of Security Deposit) should be 5% of contract amount, and should be submitted within 21 days of issue of LOA, by the successful Bidder in any of the form given below:

- A Bank Guarantee (BG) in the form given in the bid document from any Scheduled Bank. The BG issued by outstation bank shall be operative at its local branch or branch at.....
- Govt. Securities, FDR (Scheduled Bank) or any other form of deposit Stipulated by the owner.
- Demand Draft drawn in favour of South Eastern Coal Fields (SECL) on any Scheduled Bank payable at its Branch at

However, Company may approve submission of Performance Security beyond 21 days by another 14 days with proper justification on a case to case basis.

The Earnest Money/Bid Security deposited is to be returned to the Contractor after submission of Performance Security. The Earnest Money/Bid Security deposited may be adjusted against the Security Deposit (Performance Security) at Bidder's option.

Work shall commence only after submission of Security Deposit.

4.3 If Performance Security is provided by the successful Bidders in the form of Bank Guarantee it shall be issued either –

(a) At Bidder’s option by a Scheduled Bank,

Or

(b) By a Foreign Bank located in India and acceptable to the Employer. BG of scheduled commercial bank located in India and acceptable to the company should only be accepted. Thus, any BG issued by foreign bank from outside India shall not be accepted.

(c) The validity of the Bank Guarantee shall be for a period of “one year” or “ninety days, beyond the period of contract/extended period of contract (if any)”, whichever is more. Bank Guarantee (BG) is to be submitted in the format prescribed by the Company. Bank Guarantee shall be irrevocable and it shall be issued by any Indian Nationalized Bank/Scheduled Bank on Structured Financial Messaging System (SFMS) platform which is payable / enforceable at Kolkata

The paper BG would be delivered by Issuing Bank to the Beneficiary under Speed Post/Registered Post (AD). Original Bank Guarantee shall be accepted from Issuing Bank only. However, the paper BG would be operative only on receipt of a separate advice through SFMS and confirmed by the Advising Bank (i.e. Beneficiary Bank). The confirmation of issuance of BG through SFMS from Advising Bank shall be obtained through electronically as well as print out of the said message from Advising Bank with seal and signature.

Confirmation of Bank Guarantee:

Confirmation of Bank Guarantee through Structured Financial Messaging System (SFMS) will be done as follows:

A. ICICI Bank as advising Bank of SECL:

1.	Name of the Beneficiary and his details.	i	Name	South Eastern Coalfields Limited
		ii	Area	SECL – HQ. Bilaspur
		iii	Name of Bank	ICICI Bank
		iv	Bank Account No.	028205003346
		v	Department	_____ (Name of concerned Department of the Area)
2.	Beneficiary Bank, Branch and address.	i	Name of Bank	ICICI Bank
		ii	Bank Branch name	Vyapar Vihar, Bilaspur, Chhattisgarh

		iii	Branch code	0282
		iv	Beneficiary Bank Branch IFSC	ICIC0000282
		v	Beneficiary Bank Address	ICICI Bank Ltd., Surya Chambers, Plot No. A/09, Vyapar Vihar, Bilaspur, Chhattisgarh, PIN- 495001

B. State Bank of India as advising Bank of SECL:

1.	Name of the Beneficiary and his details.	i	Name	South Eastern Coalfields Limited
		ii	Area	SECL - HQ. Bilaspur
		iii	Name of Bank	State Bank of India
		iv	Bank Account No.	30285470636
		v	Department	_____ (Name of concerned Department of the Area)
2.	Beneficiary Bank, Branch and address.	i	Name of Bank	State Bank of India
		ii	Bank Branch name	SME SBI Branch
		iii	Branch code	4177
		iv	Beneficiary Bank Branch IFSC	SBIN0004177
		v	Beneficiary Bank Address	SBI, Galaxy Height, Vyapar Vihar Bilaspur, PIN-495001, Chhattisgarh

The above particulars are to be incorporated by the Issuing Bank properly while issuing BG under SFMS mode to avoid any problem in future.

Original Bank Guarantee (issued by the Issuing Bank) shall be sent by the Issuing Bank to concerned Department by Registered Post (AD).

Note:

Safe Custody and Monitoring of Securities-

The BG Details after confirmation and acceptance shall be entered in SAP by Associate Finance and its validity expiry shall be monitored through SAP. The BG shall be sent by Associate Finance to Corporate Finance SECL for safe custody. Extension of bank guarantees and other instruments, where warranted, should be sought immediately and implemented within their validity period.

For release of BGs, the proposal shall be forwarded by EIC with their recommendations in accordance with the contract conditions, for approval by the Competent Authority with the concurrence of the Finance Division.

In case the successful Bidder fails to submit the Performance Security and Additional Performance Security, if any, within the stipulated time then the award of work may be cancelled with forfeiture of the Bid Security/Earnest Money.

Additionally, the Company shall debar such defaulting Contractor from participating in future tenders in concerned Subsidiary/CIL as per Annexure-XVI – Guidelines on Debarment of Firms from Bidding.

In case of JV/CONSORTIUM/Partnership firm, the debarment shall also be applicable to all individual partners of JV/CONSORTIUM/Partnership firm.

4.4 Retention Money should be deducted at 5% from running on account bills. Total of performance security and Retention Money should not exceed 10% of contract amount or lesser sum indicated in the bid document. Retention Money may be refunded against equivalent Bank Guarantee, on written request of the contractor, on its accumulation to a minimum amount of Rs 25 lakhs. However, Bank Guarantee against retention money shall be with suitable validity based on nature of work which shall be 90 days beyond the defect liability period, but in no case less than the period of one year.

4.5 The Guarantee amount shall be payable to the Employer without any condition whatsoever.

4.6 Performance security/ Retention Money/ security deposit submitted in the form of BG which shall be valid for 90 days after the end date of scheduled completion (12 months for commissioning of the project and 120 months for O&M from next Calendar date of commissioning) and to be extended for minimum period of 1(one) year in one instance which must cover the time period of 90 days beyond completion of Defect Liability period.

4.7 The Performance Guarantee shall cover additionally the following guarantees to the Employer:

(a) The successful bidder guarantees the successful and satisfactory operation of the equipment furnished and erected under the contract, as per the specifications and documents,

(b) The successful bidder further guarantees that the equipment provided and installed by him shall be free from all defects in design, material and workmanship and shall upon written notice from the employer, fully remedy free of expenses to the Employer such defects as developed under the normal use of the said equipment within the period of guarantee specified in the relevant clause of the Conditions of Contract.

4.8 The Contract Performance Guarantee is intended to secure the performance of the entire Contract. However, it is not construed as limiting the damages under clause entitled 'Equipment

Performance Guarantee' in section Technical Conditions of Contract and damages stipulated in the other clauses in the bidding documents.

4.9 All Bank Guarantees are to be submitted in the format prescribed by the company in the bid document. Bank Guarantee shall be irrevocable and it shall be from any Scheduled Bank acceptable to the owner. The BG issued by outstation bank shall be operative at its local branch at Bilaspur, Chhattisgarh

4.10 The Company shall be at liberty to deduct/appropriate from the Contract Performance Guarantee/Security Deposit such sums as are due and payable by the contractor to the company as may be determined in terms of the contract, and the amount appropriated from the Contract Performance Guarantee/Security Deposit shall have to be restored by Contractor subsequently.

4.11 Performance Security deposit shall be returned to the Contractor after successful completion of 3 (Three) years of Defect Liability Period without any interest. The balance SD i.e. Retention Money shall be released without any interest after successful completion of entire period of the Defect Liability. Any defect/defects in the work, if detected during Guarantee Period/Defect Liability Period shall be rectified or equipment/ system shall be replaced to the satisfaction of the engineer In-charge within the said defect liability/ operation/ maintenance/guarantee period or its due extension till completion of the rectification/ replacement works as required.

4.12 In case the successful bidder fails to submit the Performance security within the stipulated time then the award of work may be cancelled with forfeiture of the bid security/ earnest money. Additionally, the company shall ban such defaulting contractor as per the Guidelines of Debarment of firms from Bidding. In case of JV/CONSORTIUM/Partnership firm, the debarment shall also be applicable to all individual partners of JV/CONSORTIUM/Partnership firm. However, debarment shall be done as per Guidelines for Debarment of firms from Bidding.

5. DEVIATIONS/ VARIATIONS IN QUANTITIES:

The quantities given in the "Schedule of Quantities" are based on estimates and are meant to indicate the extent of the work and to provide a uniform basis for tendering and any variation either by addition or omission shall not vitiate the contract.

The variation register may be maintained in SAP in electronic form to have a proper control over variations.

5.1 The company through its Engineer-in-Charge or his representative shall, without radically changing the original scope and nature of the work, under contract, have power to make any alterations in or additions to or substitution of the original specifications, drawings, designs, and instructions that may appear to be necessary or advisable during the progress of the work.

The contractor shall be bound to carry out the work(s) in accordance with the instructions given to him in writing by the Engineer-in-Charge or his representative on behalf of the company. Such altered or additional or substituted work, which shall form part of the original contract, shall be carried out by the contractor on the same terms and conditions in all respects on which they agreed to do the main work and at the same rate/rates as are specified in the contract/ work-order. In case

there are changes in ground levels from those shown in the approved drawings, they shall be agreed in writing, jointly by the contractor and EIC.

5.2 The right is reserved to cancel any items of work included in the contract agreement or portion thereof in any stage of execution if found necessary to the work and such omission shall not be a waiver of any condition of the contract nor invalidate any of the provisions thereof.

5.3 If the additional, altered or substituted work includes any class of work for which rate/rates is/are not specified in the contract/work order, rates for such items shall be determined by the Engineer-in-Charge as follows:

- a) In the case of percentage tenders, if the rate for the extra item of work executed is available in the company's approved SOR, it will be paid at the schedule rate plus or minus the accepted percentage as per contract.

However, if the extra item is not available in company's approved SOR, then the rate for such extra item(s) shall be dealt as at (c) below.

- b) In case of item rate tenders, the rate for extra item shall be derived from the rate for similar item or near similar item / class of work available in the agreement schedule of work or by analysis of rates as at below and the lower rate out of the above two shall be considered. In case of composite item rate tenders, where two or more schedule of quantities for similar item description may form part of the contract; the applicable rates shall be taken from the Schedule of Quantities of that particular part in which the deviation is involved, failing that at the lowest applicable rate for the similar item of work in the other schedule of quantities. For derivation of rates based on analysis, the same shall be done by analysis on prevalent market rate of materials and labour based on standard norms of analysis of rate of C.P.W.D/ N.B.O.
- c) In the case of extra item(s) that are completely new, and are in addition to the items contained in the contract, the contractor may within 15 days of receipt of order or occurrence of the item(s) claim rates, supported by proper analysis. The Engineer-in-Charge shall determine the rate(s) by analysis based on prevalent market rate of material and labour and on standard norms of analysis of rate of CPWD / NBO.
- d) In case of combined tender with partly item rate for non-schedule items & partly percentage tenders for SOR items, the rate for extra item shall be derived as at (b) & (c) above in case of non-schedule items rates and in case of percentage rates for SOR items the rate for extra item shall be derived as at (a) above.

In case of any difference between the contractor and the Engineer-In Charge as to the fixation of rates, the matter shall be referred to the accepting authority of the company i.e. GM(C) of the company or Staff Officer(C) for the work awarded at Company Hqrs. level and Area level respectively, whose decision shall be final and binding on the contractor.

5.4 Alteration in the quantities shall not be considered as a change in the condition of the contract nor invalidate any of the provision thereof provided that a deviation estimate / revised estimate / supplementary agreement for the item(s) involved is made. Such approval shall be from appropriate authority.

5.5 Payment for such deviated items [additional/ altered / substituted items of work of the agreement schedule] shall be made in the contractors running on account bills, till the revised estimate / deviation estimate regularizing these items are sanctioned by the competent authority of the company, at the provisional rates and shall not exceed:

- a) 75% of the rate recommended by the Engineer-in-Charge to the accepting authority of the company i.e. GM(C) of the company or SO(C) of the Area, if the rate is directly available in the SOR of the company/ if the rate is derived from available rate of BOQ.
- b) 50% of the rate recommended by the Engineer-in-Charge to the accepting authority of the company, i.e. GM(C) of the company or SO(C) of the Area , if it is analyzed item rates based on prevalent market rates of materials and labour following CPWD / NBO norms.

Total payment for such extra items of work shall not exceed 10% of work order / agreement value / approved deviation estimate value. Also total payment including extra items of work shall not exceed the work order / agreement / approved deviation estimate value.

6. LIQUIDATED DAMAGES FOR DELAY IN COMPLETION

6.1 If the contractor fails to maintain the required progress in terms of the agreed time and progress chart or to complete the work and clear the site on or before the date of completion of contract or extended date of completion, he shall without prejudice to any other right or remedy available under the law to the company on account of such breach, pay as compensation/ Liquidated Damages as mentioned in Special Conditions of Contract (SCC). The aggregate of such compensation/ compensations shall not exceed 10 (ten) percent of the total value as shown in the contract.

This will also apply to items or group of items for which separate period of completion has been specified. The amount of compensation may be adjusted or setoff against any sum payable to the contractor under this or any other contract with the company.

6.1.1 The company, if satisfied, that the works can be completed by the contractor within a reasonable time after the specified time of completion, may allow further extension of time at its discretion with or without the levy of L.D. In the event of extension granted being with L.D, the company will be entitled without prejudice to any other right or remedy available in that behalf, to recover from the contractor as agreed damages equivalent to half percent of the contract value of the works for each week or part of the week subject to a ceiling of 10% of the contract price.

6.1.2 The company, if not satisfied that the works can be completed by the contractor, and in the event of failure on the part of the contractor to complete work within further extension of time allowed as aforesaid, shall be entitled, without prejudice to any other right, or remedy available in that behalf, to rescind the contract.

6.1.3 The company, if not satisfied with the progress of the contract and in the event of failure of the contractor to recoup the delays in the mutually agreed time frame, shall be entitled to terminate the contract.

6.1.4 In the event of such termination of the contract as described in clauses 6.1.2 or 6.1.3 or both, the company, shall be entitled to recover L.D. upto ten percent (10%) of the contract value besides recovery of compensation for damage/loss for termination as provided in 9.4 of General Terms and Conditions of Contract.

6.2 The company may waive the payment of compensation, depending upon merit of the case, on request received from the contractor if the entire work is completed within the date as specified in the contract or as validly extended without stipulating any penalty.

7. QUALITY ASSURANCE:

The Contractor shall carry out and complete the work in every respect in accordance with the contract and shall ensure that the work conforms strictly to the instructions of the Engineer-In-Charge. The Engineer-In-Charge may issue from time to time further detail instructions/directions in writing to the Contractor. All such instructions/directions shall be consistent with the contract documents and should be reasonably inferable therefrom, along with clarifications/explanations thereof, if necessary.

8. MEASUREMENT AND PAYMENT:

Except where any general or detailed description of the work in quantities provides otherwise, measurements of work done shall be taken in accordance with the relevant standard method of measurement as applicable to the schedule of quantities/schedule of work /specification to the contract. In the case of items not covered by any of the aforesaid contract documents, measurement shall be taken in accordance with the relevant standard method of measurement issued by the Indian Standard Institution.

8.1 All items of work carried out by the Contractor in accordance with the provisions of the contract having a financial value shall be entered in the Measurement Book/Log Book, etc. as prescribed by the Company so that a complete record is obtained of all work performed under the contract and the value of the work carried out can be ascertained and determined therefrom.

8.2 Measurements shall be taken jointly by the Engineer-In-Charge or his authorized representative and by the Contractor or his authorized representative.

8.3 Before taking measurements of any work, the Engineer-In-Charge or the person deputed by him for the purpose shall intimate the Contractor to attend or to send his representative to attend

the measurement. Every measurement thus taken shall be signed and dated by both the parties on the site on completion of the measurement. If the Contractor objects to any of the measurements, a note to that effect shall be made in the Measurement Book /Log Book and signed and dated by both the parties.

8.4 In the event of failure on the part of Contractor to attend or to send his authorized representative to attend the measurement after receiving the intimation, or to countersign or to record objection within a week from the date of the measurement, the measurement taken by the Engineer-In-Charge or by his authorized representative shall be taken to be the correct measurement of the work done.

8.5 Payment on Account - The Contractor shall submit interim bill/bills for the work carried out/materials provided in accordance with the contract. The Engineer-In- Charge shall then arrange for verification of the bill/bills with reference to the measurements taken or to be taken or any other records relevant for the purpose.

8.6 Payment on account shall be made on the Engineer-In-Charge certifying the sum to which the Contractor is considered entitled by way of interim payment for the work executed as covered by the bill/bills after deducting the amount already paid, the Security Deposit and such other amounts as may be deductible or recoverable in terms of the contract.

8.7 Any certificate given by the Engineer-in-charge for the purpose of payment of interim bill/bills shall not of itself be conclusive evidence that any work/materials to which it relates is/are in accordance with the contract and may be modified or corrected by the Engineer-in-charge by any subsequent certificate or by the final certificate.

8.8 The Company reserves the right to recover/enforce recovery of any overpayments detected after payment as a result of post-payment audit or technical examination or by any other means, notwithstanding the fact that the amount of disputed claims, if any, of the Contractor exceeds the amount of such overpayment and irrespective of the facts whether such disputed claims of the Contractor are the subject matter of arbitration or not. The amount of such overpayments may be recovered from the subsequent bills under the contract, failing that from Contractor's claim under any other contract with the Company or from the Contractor's Security Deposit or the Contractor shall pay the amount of overpayment on demand.

8.9 Amount payable/ repayable for any subsequent change in the Goods and Services Tax (GST) will be made to/ from the Contractors after departmental verification of such changes of tax law issued by statutory authority.

9. TERMINATION, SUSPENSION, CANCELLATION & FORECLOSURE OF CONTRACT:

9.1 Cancellation of Contract-The owner shall, in addition to other remedial steps to be taken as provided in the conditions of contract, be entitled to cancel the contract in full or in part, if the contractor

- a) makes default in proceeding with the works with due diligence and continues to do so even after a notice in writing from the Engineer-in-charge, then on the expiry of the period as specified in the notice

Or

- b) commits default/breach in complying with any of the terms and conditions of the contract and does not remedy it or fails to take effective steps for the remedy to the satisfaction of the Engineer-in-charge, then on the expiry of the period as may be specified by the Engineer-in-charge in a notice in writing

Or

- c) fails to complete the work or items of work with individual dates of completion, on or before the date/dates of completion or as extended by the company, then on the expiry of the period as may be specified by the Engineer-in-charge in a notice in writing

Or

- d) shall offer or give or agree to give any person in the service of the company or to any other person on his behalf any gift or consideration of any kind as an inducement or reward for act/acts of favour in relation to the obtaining or execution of this or any other contract for the company.

Or

- e) Shall try to obtain a contract with the company by way of ring tendering or other non-bonafide method of competitive tendering.

Or

- f) transfers, sublets, assigns the entire work or any portion thereof without the prior approval in writing from the Engineer-in-charge. The Engineer-in-charge may by giving a written notice, cancel the whole contract or portion of it in default.

9.2 The owner shall in such an event give fifteen (15) days' notice in writing to the contractor of his decision to do so.

9.3 The contractor upon receipt of such notice shall discontinue the work on the date and to the extent specified in the notice, make all reasonable efforts to obtain cancellation of all orders and contracts to the extent they are related to the work terminated and terms satisfactory to the owner,

stop all further sub-contracting or purchasing activity related to the work terminated, and assist the owner in maintenance, protection, and disposition of the works acquired under the contract by the owner.

9.4 Termination of Contract-The contract shall stand terminated under the following circumstances unless the owner is satisfied that the legal representatives of the individual contractor or of the proprietor of the proprietary concern and in the case of partnership the surviving partners, are capable of carrying out and completing the contract and the owner shall in any way not be liable to payment of any compensation to the estate of deceased contractor and/or to the surviving partners of the contractor's firm on account of the termination of the contract.:

- a) If the contractor being an individual in the case of proprietary concern or in the case of a partnership firm any of its partners is declared insolvent under the provisions of insolvency act for the time being in force, or makes any conveyance or assignment of his effects or composition or arrangement for the benefit of his creditors amounting to proceedings for liquidation or composition under any insolvency act.
- b) In the case of the contractor being a company, its affairs are under liquidation either by a resolution passed by the company or by an order of court, not being a voluntary liquidation proceeding for the purpose of amalgamation or reorganization, or a receiver or manager is appointed by the court on the application by the debenture holders of the company, if any.
- c) If the contractor shall suffer an execution being levied on his/their goods, estates and allow it to be continued for a period of 21 days.
- d) On the death of the contractor being a proprietary concern or of any of the partners in the case of a partnership concern and the company is not satisfied that the legal representative of the deceased proprietor or the other surviving partners of the partnership concern are capable of carrying out and completing the contract. The decision of the company in this respect shall be final and binding which is to be intimated in writing to the legal representative or to the partnership concern.

9.5 If the contractor is an individual or a proprietary concern and the individual or the proprietor dies and if the contractor is a partnership concern and one of the partners dies, then unless the owner is satisfied that the legal representatives of the individual contractor or of the proprietor of the proprietary concern and in the case of partnership the surviving partners, are capable of carrying out and completing the contract the owner shall be entitled to cancel the contract as to its incomplete part without being in any way liable to payment of any compensation to the estate of deceased contractor and/or to the surviving partners of the contractor's firm on account of the cancellation of the contract.

The decision of the owner that the legal representatives of the deceased contractor or surviving partners of the contractor's firm cannot carry out and complete the contract shall be final and binding on the parties. In the event of such cancellation the owner shall not hold the estate of the deceased contractor and/or the surviving partners of the estate of the deceased contractor and/or the surviving partners of the contractor's firm liable to damages for not completing the contract.

9.6 On cancellation of the contract or on termination of the contract, the Engineer-in charge shall have powers

- a) To take possession of the site and any materials, constructional plant, implements, stores, etc. thereon.
- b) In such an event, the contractor shall be liable for loss/damage suffered by the employer because of action under this clause and to compensate for this loss or damage, the employer shall be entitled to recover higher of the following:
 - i) Forfeiture of security deposit comprising of performance guarantee and retention money at the disposal of the employer.
Or
 - ii) 20% of value of incomplete work (Contract Value minus already executed value of the work).

The amount to be recovered from the contractor as determined above, shall, without prejudice to any other right or remedy available to the employer as per law or as per agreement, will be recovered from any money due to the contractor on any account or under any other contract and in the event of any shortfall, the contractor shall be liable to pay the same within 30 days. In case of failure to pay the same the amount shall be debt payable.

In the event of above course being adopted by the Engineer-in-charge, the contractor shall have no claim to compensation for any loss sustained by him by reasons of his having purchased materials, equipment or entered into agreement or made advances on any account or with a view to the execution of work or performance of the contract. And in case action is taken under any of provision aforesaid, the contractor shall not be entitled to recover or to be paid any sum for any work thereof or actually performed under this contract unless and until the engineer-in-charge has certified in writing the performance of such work and value payable in respect thereof and he shall only be entitled to be paid the value so certified.

The need for determination of the amount of recovery of any extra cost/expenditure or of any loss/damage suffered by the company shall not however arise in the case of termination of the contract for death/demise of the contractor.

9.7 Suspension of Contract- The company shall have power to suspend the progress of the work or any part thereof and the Engineer-in-charge may direct the contractor in writing to suspend the work, for such period and in such manner as may be specified therein, on account of any default on the part of the contractor, or for proper execution of the work for reasons other than any default on the part of the contractor, or on ground of safety of the work or part thereof. In the event of suspension for reason other than any default on the part of the contractor, extension of time shall be allowed by the company equal to the period of such suspension. Any necessary and demonstrable costs incurred by the contractor as a result of such suspension of the works will be paid by the owner, provided such costs are substantiated to the satisfaction of the engineer. The owner shall not be responsible for any liabilities if suspension or delay is due to some default on the part of the contractor or his sub-contractor.

The work shall, throughout the stipulated period of contract, be carried out with all due diligence on the part of the contractor. In the event of termination or suspension of the contract, on account of default on the part of the contractor, as narrated hereinbefore, the security deposit and other dues of this work or any other work done under this company shall be forfeited and brought under the absolute disposal of the company provided, that the amount so forfeited shall not exceed 10% of the contract value.

9.8 Foreclosure of Contract (in full or in part) - If at any time after acceptance of the tender, the company decides to abandon or reduce the scope of the work for any reason whatsoever the company, through its Engineer-in-charge, shall give notice in writing to that effect to the contractor. In the event of abandonment/reduction in the scope of work, the company shall be liable:

- a) to pay the contractor at the contract rates full amount for works executed and measured at site upto the date of such abandonment/reduction in the work.
- b) to pay reasonable amount assessed and certified by the Engineer-in-charge of the expenditure incurred, if any, by the contractor on preliminary works at site. e.g. temporary access roads, temporary construction for labour and staff quarters, office accommodation, storage of materials, water storage tanks and supply for the work including supply to labour/staff quarters, office, etc.
- c) to pay for the materials brought to site or to be delivered at site, which the contractor is legally liable to pay, for the purpose of consumption in works carried out or were to be carried out but for the foreclosure, including the cost of purchase and transportation and cost of delivery of such materials. The materials to be taken over by the company should be in good condition and the company may allow at its discretion the contractor to retain the materials in full or part if so desired by him and to be transported by the contractor from site to his place.
- d) to take back the materials issued by the company but remaining unused, if any, in the work on the date of abandonment/reduction in the work, at the original issued price less allowance for any deterioration or damage caused while in custody of the contractor
- e) to pay for the transportation of tools and plants of the contractor from site to contractor's place or to any other destination, whichever is less.

The contractor shall, if required by the Engineer-in-charge, furnish to him books of accounts, papers, relevant documents as may be necessary to enable the Engineer-in-charge to assess the amount payable in terms of para 9.8 (b), (c) and (e) above, the contractor shall not have any claim for compensation whatsoever either for abandonment or for reduction in the scope of work, other than those as specified above.

10.0 CONTRACT PRICE

The lump sum prices quoted by the contractor in his bid with additions and deletions as may be agreed before signing of the contract, for the entire scope of the work including furnishing and erection of equipment covered under the specifications and documents and shall be treated as the contract price.

11.0 CHANGED QUANTITY

The owner reserves the right to vary the quantities of items or groups of items to be ordered as specified in the accompanying technical specifications, as may be necessary, during the execution of the contract, but such variations unless otherwise specified in the accompanying technical specifications shall be limited to plus or minus twenty percent (20%) of the original quantity ordered.

12.0 DEDUCTIONS FROM CONTRACT PRICE

All costs, damages or expenses which the owner may have paid, for which under the contract the contractor is liable, will be claimed by the owner. All such claims shall be intimated by the owner to the contractor regularly as and when they fall due. Such claims shall be supported by appropriate and certified vouchers or explanations, to enable the contractor to properly identify such claims. Such claims shall be paid by the contractor within fifteen (15) days of the receipt of the corresponding claims and if not paid by the contractor within the said period, the owner may then deduct the amount, from any moneys due or becoming due by him to the contractor under the contract or may be recovered by actions of law or otherwise, if the contractor fails to satisfy the owner of such claims and to recover the amount from any money due to the contractor on any account or under any other contract including contracts awarded by Coal India Ltd. or other subsidiaries and in the event of any shortfall, the contractor shall be called upon to pay the same on demand.

13.0 PACKING, FORWARDING AND SHIPMENT

- 13.1 The contractor, wherever applicable, shall after proper painting, pack and crate all equipment in such a manner as to protect them from deterioration and damage during rail and road transportation to the site and storage at the site till the time of erection. The contractor shall be held responsible for all damages due to improper packing.
- 13.2 The contractor shall notify the owner of the date of each shipment from his works, and the expected date of arrival at the site for the information of the owner.
- 13.3 The contractor shall also give all shipping information concerning the weight, size and content of each packing including any other information the owner may require.
- 13.4 The following documents shall be sent by registered post to the owner within 3 days from the date of shipment, to enable the owner to make progressive payments to the contractor: the payment shall be made only after receipt and acceptance of material at site in good condition. Application for payment in the standard format of the owner (3 copies), Invoice (6 copies), Packing list (6 copies), Pre-dispatch clearance certificate, if any (3 copies), Test certificate, wherever applicable (3 copies),
- 13.5 The contractor shall prepare detailed packing list of all packages and containers, bundles and loose material forming each and every consignment dispatched to site. The contractor shall further be responsible for making all necessary arrangements for loading, unloading and other handling right from his works up to the site and also till the equipment is erected, tested and

commissioned. He shall be solely responsible for proper storage and safe custody of all equipment.

14.0 DEMURRAGE, WHARFAGE, ETC.

All demurrage, wharfage and other expenses incurred due to delayed clearance of the material, or any other reason shall be to the account of the contractor.

15.0 LIABILITY FOR ACCIDENTS AND DAMAGES

Under the contract, the contractor shall be responsible for loss or damage to the plant until the plant is taken over in accordance with clause entitled 'Taking Over' in section technical terms and conditions of contract of this volume.

16.0 FORCE MAJEURE

16.1 Force majeure is herein defined as any cause which is beyond the control of the contractor or the owner as the case may be which they could not foresee or with a reasonable amount of diligence could not have foreseen and which substantially affect the performance of the contract, such as: (a) natural phenomena, including but not limited to floods, draughts, earthquakes and epidemics: (b) acts of any government, including but not limited to war, declared or undeclared, priorities, quarantines, embargoes, provided either party shall within fifteen (15) days from the occurrence of such a cause notify the other in writing of such causes.

16.2 (a) The successful Bidder/ Contractor will advise, in the event of his having resort to this clause by a registered letter duly certified by the local chamber of commerce or statutory authorities, the beginning and end of the cause of delay, within fifteen days of the occurrence and cessation of such Force Majeure condition. In the event of delay lasting over two months, if arising out of Force Majeure, the contract may be terminated at the discretion of the company.

(b) For delays arising out of Force Majeure, the successful Bidder/ Contractor will not claim extension in completion date for a period exceeding the period of delay attributable to the causes of Force Majeure and neither company nor the successful Bidder/ Contractor shall be liable to pay extra costs (like increase in rates, remobilization advance, idle charges for labour and machinery etc.) provided it is mutually established that the Force Majeure conditions did actually exist.

(c) If any of the Force Majeure conditions exists in the place of operation of the bidder even at the time of submission of bid he will categorically specify them in his bid and state whether they have been taken into consideration in their quotations.

16.3 The contractor or the owner shall not be liable for delays in performing his obligations resulting from any force majeure cause as referred to and/or defined above. The date of completion will, subject to hereinafter provided, be extended by a reasonable time even

though such cause may occur after contractor's performance of his obligations has been delayed for other causes.

17.0 EXTENSION OF DATE OF COMPLETION

17.1 On happening of any events causing delay as stated hereinafter, the contractor shall intimate immediately in writing the Engineer-in-charge:

- a. Due to any reasons defined as Force Majeure.
- b. Non-availability of stores which are the responsibility of the owner to supply
- c. Non-availability or breakdown of tools and plant to be made available or made available by the owner
- d. Delay on the part of the contractors or tradesmen engaged by the owner not forming part of the contract, holding up further progress of the work
- e. Non-availability of working drawings/work program in time, which are to be made available by the company during progress of the work
- f. Any other causes which, at the sole discretion of the company is beyond the control of the contractor.

17.2 A "Hindrance Register" shall be maintained by both the Company and the Contractor at site to record the various hindrances, as mentioned above, encountered during the course of execution.

17.3 The contractor may request the company in writing for extension of time within 15 days of happening of such event causing delay stating also, if practicable, the period for which extension is desired. The company may, considering the eligibility of the request, give a fair and reasonable extension of time for completion of the work. Such extension shall be communicated to the contractor in writing by the company through the Engineer-in-charge within 1 month of the date of receipt of such request. The contractor shall however use his best efforts to prevent or make good the delay by putting his endeavors constantly as may be reasonably required of him to the satisfaction of the Engineer-in-charge.

17.4 Interim extension of time may also be granted by the Engineer -In-charge during the course of execution, on written request for extension of time within 15 (fifteen) days of happening of such events as stated above, reserving the company's right to impose/ waive liquidated damages at the time of granting final extension of time as per contract agreement.

17.5 When the period fixed for the completion of the contract is about to expire, the question of extension of the contract may be considered at the instance of the Contractor or the Company or the both. The extension will have to be by party's agreement, expressed or implied.

17.6 In case the Contractor does not apply for grant of extension of time within 15 (fifteen) days of hindrance occurring in execution of the work and the Company wants to continue with the work beyond the stipulated date of completion for reason of the work having been hindered, the Engineer-in-charge at his sole discretion can grant interim extension of time even in the absence of application from the Contractor. Such extension of time granted by the Engineer-

in-charge is valid provided the Contractor accepts the same either expressly or implied by his actions before and subsequent to the date of completion. Such extension of time shall be without prejudice to Company's right to levy compensation under the relevant clause of contract.

17.7 All interim extensions of time shall be granted by Tender Accepting Authority limited to Director (Tech) for works approved by Chairman/FDs/Board and Area GM for area works and all final extension of time shall be granted by Tender Accepting Authority limited to Chairman/ CMD of CIL/ Subsidiary. Effort should be made to complete the work within the original contract period or extended period.

18.0 PAYMENT

18.1 The payment to the contractor for the performance of the works under the contract will be made by the owner as per the guidelines and conditions specified herein. All payment made during the contract shall be on account payments only. The final payment will be made on completion of all the works and on fulfilment by the contractor of all his liabilities under the contract. The payment to the contractor will be made through Electronics Mode.

18.2 **Currency of payment-** All payments under the contract shall be in Indian Rupees only.

18.3 **Due dates for payment-** Owner will make progressive payment as and when the payment is due as per the terms of payment set forth in the accompanying technical specifications. Payment will become due and payable by the owner within thirty (30) days from the date of receipt of contractor's bill/invoice/debit note by the owner, provided the documents submitted are complete in all respects.

18.4 **Payment Schedule** - The contractor shall prepare and submit to the engineer for approval, a break-up of the contract price. This contract price break-up shall be interlinked with the agreed detailed PERT network of the contractor setting forth his starting and completion dates for the various key phases of works prepared as per condition of this section while preparing the PERT network, the supply of P&M Equipment shall be linked to construction of respective Civil and Structural Works. Any payment under the contract shall be made only after the contractor's price breakup is approved by the engineer. The aggregate sum of the contractor's price break-up shall be equal to the lump sum contract price.

18.5 Interim Payments

18.5.1 The contractor shall submit running bill for the payment in the prescribed proforma of the owner to be supplied in due course at the time of payment.

18.5.2 Each such running bill shall state the amount claimed and shall set forth in detail, in the order of the payment schedule, particulars of the works including the works executed at site and of the equipment shipped/brought on to the site pursuant to the contract up to the date mentioned in the bill and for the period covered since the last preceding certificate, if any.

18.5.3 Every interim payment claim shall indicate the contract value of the works executed up to the date mentioned in the running bill, provided that no sum shall be included in any running bill in respect of the works that, according to the decision of the engineer, does not comply with the contract, or has been performed, at the date of certificate prematurely.

18.6 TERMS OF PAYMENTS

18.6.1 Payment: Any payment to the Contractor before the final payment shall be treated as interim payment towards the total contract value. The Contractor may at intervals of not less than one month submit claims/ bills for payment on account of work done after proper scrutiny and certification of the same by the Employer. The progressive payment shall be made in respect of the following:

- a) Supply Contract
- b) Works Contract
- c) O&M Contract

All such payments shall be made by the Employer online within a month from the date of the submission of claims/bills. Payment will also be governed by Clauses of 4.0 of General Terms & Conditions of Contract. Any sum due from the Contractor shall be deducted from the first or next subsequent on account of payments as the case may be, in general the procedure of payment shall be followed will be as mentioned in Special Conditions of Contract (SCC).

19.0 SETTLEMENT OF DISPUTES WITH THE CONTRACTOR

It is incumbent upon the contractor to avoid litigation and disputes during course of execution. However, if such disputes take place between the contractor and the department, effort shall be made first to settle the disputes at the company level.

The contractor should make request in writing to the Engineer-in-charge for settlement of such disputes/ claims within 30 (thirty) days of arising of the cause of dispute/ claim failing which no disputes/ claims of the contractor shall be entertained by the company. Effort shall be made to resolve the dispute in two stages:

In first stage dispute shall be referred to GM (E&M/Solar), SECL. If difference still persist the dispute shall be referred to a committee constituted by the owner. The committee shall have one member of the rank of Director of the company who shall be chairman of the committee.

If differences still persist, then matter shall be resolved through conciliation.

Conciliation:

The party initiating conciliation shall send a written invitation to the other party to conciliate and proceedings shall commence when the other party accepts the initiations to conciliation. The parties may agree on the name of a sole conciliator or each party may appoint one conciliator. The

conciliation shall assist the parties to reach an amicable settlement of their dispute. When the parties sign the settlement agreement, it shall be final and binding on the parties. The conciliator shall authenticate the settlement agreement and furnish a copy thereof to each party.

If differences still persist, the settlement of the dispute shall be resolved in the following manner: Disputes or differences relating to the interpretation and application of the provisions of commercial contract(s) between Central Public Sector Enterprise (CPSEs) / Port Trusts inter se and also between CPSEs and Government Departments/ Organizations (excluding disputes relating to Railways, Income Tax, Customs & Excise Department), shall be taken up by either party for its resolution through Administrative Mechanism for Resolution of CPSEs Disputes (AMRCD) as mentioned in DPE OM No. 05/003/2019-FTS-10937 dated 14th December 2022 and the decision of AMRCD on the said dispute will be binding on both the parties. In case of parties other than above Agencies, the redressal of the dispute may be sought through Arbitration (THE ARBITRATION AND CONCILIATION ACT, 1996 as amended by AMENDMENT ACT of 2015).

20.0 A Settlement of Disputes through Arbitration

- (i) Normally, there should not be any scope of dispute between the employer (department) and the contractor after entering into a mutually agreed valid contract. However, due to various unforeseen reasons, disputes may arise during the progress of the contract between the employer (department) and the contractor. Therefore, the conditions governing the contract shall contain suitable provision for settlement of such disputes / differences binding on both the parties.
- (ii) Mode of settlement of such disputes/differences shall be through Arbitration. However, when a dispute/difference arises, then, depending on the position of the case, either the employer (department) or the contractor shall give notice to the other party of its intention to commence arbitration. The applicable arbitration procedure will be as per the Arbitration and Conciliation Act, 1996 as amended by Amendment Act of 2015.
- (iii) Venue of Arbitration: The venue of arbitration shall be the place from where the contract has been issued.
- (iv) Applicable Law: The contracts shall be interpreted in accordance with the laws of the Union of India.
- (v) Legal Advice: While processing a case for arbitration, the purchase organization is to take legal advice, at appropriate stages from competent authorities viz their Legal Department.
- (vi) Following clause shall be included in the General Conditions of the Contract (GCC): Sole Arbitration Clause: In the event of any question, dispute or difference arising under these terms & conditions or any condition contained in this contract or interpretation of the terms of, or in connection with this Contract (except as to any matter the decision of which is specially

provided for by these conditions), the same shall be referred to the sole arbitration of a person, appointed to be the arbitrator by the CMD of Subsidiary Company. The award of the arbitrator shall be final and binding on the parties of this Contract.

- (a) In the event of the Arbitrator dying, neglecting or refusing to act or resigning or being unable to act for any reason, or his/her award being set aside by the court for any reason, it shall be lawful for the CMD of Subsidiary Company to appoint another arbitrator in place of the outgoing arbitrator in the manner aforesaid.
 - (b) It is further a term of this contract that no person other than the person appointed by the CMD of Subsidiary Company as aforesaid should act as arbitrator and that, if for any reason that is not possible, the matter is not to be referred to Arbitration at all. Subject as aforesaid, Arbitration and Conciliation Act, 1996 as amended by Amendment Act of 2015, and the rules thereunder and any statutory modification thereof for the time being in force shall be deemed to apply to the Arbitration proceedings under this clause. The venue of arbitration shall be the place from which the contract is issued or such other place as the CMD of Subsidiary Company at his discretion may determine.
- (vii) Contracts with Partnership firm/ JV/Consortium: A partner is the implied authority to bind the firm in a contract coming in the purview of the usual business of the firm. The implied authority of a partner, however, does not extend to enter into arbitration agreement on behalf of the firm. Therefore, while entering into a contract with partnership firm /JV/Consortium care should be taken to obtain consent of all the partners to the arbitration agreement. A suitable clause for obtaining consent of all the partners to the arbitration agreement shall be included in the General Conditions of the Contract (GCC).
- (viii) In cases where Subsidiary has challenged an arbitral award and as a result, the amount of the arbitral award has not been paid, 75% of the arbitral award (which may include interest up to date of the award) shall be paid by Subsidiary to the contractor/ concessionaire against a Bank Guarantee (BG). The BG shall only be for the said 75% of the arbitral award as above and not for the interest which may become payable to Subsidiary should the subsequent court order require refund of the said amount. The payment may be made into a designated Escrow Account with the stipulation that the proceeds will be used first, for payment of lenders' dues, second, for completion of the project and then for completion of other projects of Subsidiary as mutually agreed/ decided. Any balance remaining in the escrow account subsequent to settlement of lenders' dues and completion of projects of Subsidiary may be allowed to be used by the contractor/ concessionaire with the prior approval of the lead banker and Subsidiary. If otherwise eligible and subject to contractual provisions, retention money and other amounts withheld may also be released against BG. The only circumstances in which such payment need not be made is where the contractor declines, or is unable, to provide the requisite bank guarantee and/or fails to open an escrow account as required. Persons responsible for not adhering to are liable to be held personally accountable for the additional interest arising, in the event of the final court order going against the procuring entity.

- (ix) Arbitration court awards should be critically reviewed. In cases where there is a decision against Subsidiary the decision to appeal should not be taken in a routine manner, but only when the case genuinely merits going for the appeal and there are high chances of winning in the court/ higher court. There is a perception that such appeals etc. are sometimes resorted to postpone the problem and defer personal accountability. Casual appealing in arbitration / court cases has resulted in payment of heavy damages / compensation / additional interest cost, thereby causing more harm to the exchequer, in addition to tarnishing the image of the Government.
- (x) Legal department of Subsidiary should monitor the success rate of appealing against arbitration awards. There should be a clear delegation to empower officials to accept arbitration / court orders. A special board / committee may be set up by legal department of Subsidiary to review the case before an appeal is filed against an order. Arbitration /court awards should not be routinely appealed without due application of mind on all facts and circumstances including realistic probability of success. The board / committee or other authority deciding on the matter shall clarify that it has considered both legal merits and the practical chances of success and after considering the cost of, and rising through, litigation / appeal / further litigation as the case may be, it is satisfied that such litigation / appeal /further litigation cost is likely to be financially beneficial compared to accepting the arbitration / court award.

21. LIMITATIONS OF LIABILITIES:

Except in cases of criminal negligence or wilful misconduct,

- i) Notwithstanding anything herein to the contrary, no party shall be liable for any indirect, special, punitive, consequential or exemplary damages, whether foreseeable or not, arising out of or in relation to this contract, loss of goodwill or profits, lost business however characterized, any/or from any other remote cause whatsoever.
- ii) The contractor shall not be liable to the Owner for any losses, claims, damages, costs or expenses whatsoever arising out of or in connection with this contract in excess of the contract value of the work which caused such losses, claims, damages, costs or expenses
- iii) However, the limitation of liability of the contractor indicated above shall not apply to liquidated damages.

**SECTION – III: SPECIAL CONDITIONS OF
CONTRACT (SCC)**

SPECIAL CONDITIONS OF CONTRACT (SCC)

The following Special Conditions of Contract (SCC) shall supplement the General Conditions of Contract (GCC). Wherever there is a conflict, the provisions herein shall prevail over those in the GCC. The corresponding Clause number(s) of the GCC is/ are indicated in parentheses.

SCC No.	GCC Clause Ref. No. (If Applicable)	Details/ Description/ Special Conditions
1.	Definitions	<p>The Employer/Owner is: Southeastern Coal Fields Limited Bilaspur, Chhattisgarh, 495006</p> <p>Kind Attn.: Telephone Nos.: - 07752- 246318 Fax No.: - 246468 Email: - gmenm.secl@coalindia.in</p>
2.		<p>The Engineer-in-Charge: “Shall be intimated to the successful bidder”</p>
3.		<p>The Time for Commissioning for the cumulative capacity of 40 MW (AC) Ground mounted Solar PV Power Plant along with DC Overloading at Johilla Area, SECL along with other associated equipment as per this tender document in total shall be 12 (Twelve) Months from the Date of the Notification of Award NOA/LOA/LOI. The commencement of work should be within 30 days from the Date of the Notification of Award NOA/LOA/LOI.</p> <p>Further Contractor is also to provide Operation & Maintenance Contract of Solar Photo Voltaic Plant for a period of 10 (Ten) years from the date of Operational Acceptance of the Plant.</p>

Section	Clause	Aspect	Specific Terms
-	-	Location of Site	<p>Add following to the existing clause regarding the Site Visit:</p> <ol style="list-style-type: none"> 1. Prospective Bidders are advised to visit the site to study the actual conditions and go through the plans/ drawings connected to the present scope of work including power evacuation system, including conditions, availability of water etc. and get acquainted with the same before attending Pre-bid meeting. 2. The Bidder at the Bidder's own responsibility, cost and risk shall inspect and examine the site and its surrounding, and shall satisfy themselves fully before submitting bids as to the form and nature of the site, the geological conditions decisive for the success of the project, the means of access to the site, the loading and unloading facilities etc. In general, the Bidders shall themselves obtain all necessary information as to risks, contingencies, and other circumstances susceptible to influence or affect their bids. 3. Although certain information is provided in Scope of work of this tender document, it should be checked by the Bidders, any neglect or failure to obtain or confirm such information will not relieve the Bidders from any liability or responsibilities to carry out the works according to the contract. CIL/SECL will assist the Bidders in obtaining the data required but will not assume responsibility either for the data obtained or for their completeness. 4. Bidders shall acquaint themselves on their own responsibility with laws and regulations in India under which the work is to be performed including those which may influence, in general or in detail, design, supply, transportation, erection, operation of the equipment and requirement of manpower. Any failure or neglect to do so will not absolve the potential Contractor from his contractual obligation. 5. It is specially emphasized that it shall be the responsibility of the Bidders to have themselves familiarized with the prevailing conditions and that no claim

			<p>relating thereto for additional payment or adjustment of a Contract price will be acceptable after the submission of their Bid.</p> <p>6. It shall be deemed that the tenderer has visited the site/area and got fully acquainted with the working conditions and other prevalent conditions and fluctuations thereto whether he visits the site/area or not and has taken all the factors into account while quoting his rates.</p> <p>7. Prospective Bidders are advised to carefully read the Tender documents along with Annexures, understand them in the proper perspective and then fill the Technical Bid Format, Commercial Bid Format and Price Bid Format (SOR).</p> <p>8. In connection with the site visit, the bidder shall submit an Undertaking along with the bid.</p> <p>9. Cutting of trees, bushes and vegetation from site (including permission from local authorities) and disposal thereof. The site should be maintained in vegetation free condition during erection stage (at any point of time) i.e., up to start of O&M Contract.</p>
--	--	Completion Schedule	<ul style="list-style-type: none"> • The date of commencement shall be reckoned from the expiry of 30 days from the issue of letter of acceptance and submission of Performance Security or seven days after handing over the site. • The Contractor shall inform the Owner at least thirty (30) days advanced written notice of the date on which it intends to synchronize the Project to the grid.
2	6	Liquidated Damages for Delay and Underperformance	<p>A. Delay in Commissioning and COD</p> <ul style="list-style-type: none"> • If the COD of the project is delayed beyond 12 Months from the date of LOA, then unless such failure is due to Force Majeure (as defined in the relevant clauses) or due to SECL's defaults, 1/2 % (Half percent) of the total contract price per week of part thereof of delay. Subject to a maximum of 10% of total contract price will be deducted for such delay as LD.

			<ul style="list-style-type: none"> • Maximum applicable Liquidated Damages for Delay in Commissioning: The upper ceiling for total liquidated damages shall be maximum 10% of the total Contract Price. <p>B. Underperformance</p> <ul style="list-style-type: none"> • For each Contract Year, the Contractor shall demonstrate “Actual Energy Delivered” at the Metering Point as compared to the quoted NEEGG. • If for any Contract Year, during O&M period it is found that the “Actual Delivered Energy” is less than ‘Minimum NEEGG’ for the particular year, the Contractor shall pay the compensation to SECL with an amount equivalent to INR (Average Industrial Energy Charge Rate in INR/kWh payable by SECL to the DISCOM x1.5) per kWh for ‘Under-Generation (kWh)’. • ‘Average Industrial Energy Charge Rate’ during O&M period will be calculated as mentioned in ‘Technical Specifications’: • The same shall be recovered from payment yet to be made by the Company to the Contractor and/ or from the Security deposit available with the Company. • This compensation shall not be applicable in events of Force Majeure identified under this Tender affecting supply of solar energy from the Project. • Maximum applicable Liquidated Damages: The upper ceiling for total liquidated damages shall be maximum 10% of the total Contract Price.
2	6	Documents for Extension of Time request	<p>The following documents shall form the principal basis for consideration of Extension of Time with or without LD, levy of Liquidated Damages and settlement of extra claims during the execution of contract:</p> <ol style="list-style-type: none"> 1. The joint recordings in “Hindrance Register” and “Weekly Review Register”. 2. Records of Technical Coordination Meetings. 3. Records of Contract Review Meetings,

			4. Written notices issued by the “Engineer-in-Charge” or his authorized representative to the Contractor in the relevant period. "
1	1	Contract Performance Security	<p>Unconditional and irrevocable individual Bank Guarantees issued by any Nationalized Banks in the manner as mentioned below.</p> <p>The Contract Performance Security shall be in the form of Bank Guarantee only and shall be in the currency of the Contract and will be issued in the name of the Owner as “South Eastern Coalfields Limited”.</p> <p>The Contract Performance Security against this Contract need to be furnished as mentioned below:</p> <ol style="list-style-type: none"> 1. The value of the Contract Performance Security shall be 5% (Five percent) of the Contract Value (i.e., total sum of the Supply & Service Contract). This Performance security will be valid for a total period of 135 Months (12 Months Project commissioning period) + prescribed O & M Period, i.e., 120 Months + 03 Months additional) from the date of its issuance. The successful bidder can submit Contract Performance Security with initial validity of 36 months and the same may be extended after every 36 months till completion of the total 135 months period. 2. The Contract Performance Security shall be towards faithful performance of the contractual obligations and performance of equipment. 3. In case of any default or failure of the Contractor to comply with the requirements of any of the Obligations covered under this Tender Document and/ or Contract Agreement shall constitute sufficient grounds for forfeiture of the entire Contract Performance Security, in such cases, the liability on account of GST will be borne by the contractor. 4. Further, any delay beyond 30 (Thirty) days shall attract delay charges @ 1.25% per

			<p>month on the total Contract Performance Security amount, calculated on pro-rata basis accordingly. However, total project completion period shall remain same. Part Security shall not be accepted. Further, Owner at its sole discretion may cancel the Contract Agreement/ NOA & forfeit 100% of EMD inclusive of GST, in case Contract Performance Security is not submitted within 45 (Forty-Five) days from issuance of NOA/LOA/LOI.</p> <p>Contract Performance Security submitted shall be released to the Contractor without any interest not later than 75 (Seventy-Five) days after the successful completion of the complete O&M period (10 Years) subject to the approval and acceptance of the O&M period deliverables.</p>
2	6	Event of Default	<p>Contractor’s Default: The occurrence and/or continuation of any of the following events, unless any such event occurs as a result of a Force Majeure Event or a breach by imp of its obligations under this Agreement, shall constitute a Contractor Event of Default:</p> <p>(i) the failure to commence supply of power up to the Contracted Capacity, by the end of the period specified in Section-6 Special Conditions of Contract of this tender, or failure to continue supply of Contracted Capacity after COD throughout the O&M period, or</p> <p>if</p> <p>a) the Contractor assigns, mortgages or charges or purports to assign, mortgage or charge any of its assets or obligations related to the EPC contract for this solar Power Project in contravention of the provisions of this Agreement; or</p>

			<p>b) the Contractor transfers or novates any of its rights and / or obligations under this agreement, in a manner contrary to the provisions of this Agreement; except where such transfer</p> <ul style="list-style-type: none"> • is in pursuance of a Law; and does not affect the ability of the transferee to perform, and such transferee has the financial capability to perform, its obligations under this Agreement or • is to a transferee who assumes such obligations under this Agreement and the Agreement remains effective with respect to the transferee; <p>(ii) if (a) the contractor becomes voluntarily or involuntarily the subject of any bankruptcy or insolvency or winding up proceedings and such proceedings remain uncontested for a period of thirty (30) days, or (b) any winding up or bankruptcy or insolvency order is passed against the contractor, or (c) the contractor goes into liquidation or dissolution or has a receiver or any similar officer appointed over all or substantially all of its assets or official liquidator is appointed to manage its affairs, pursuant to Law, provided that a dissolution or liquidation of the contractor will not be a contractor Event of Default if such dissolution or liquidation is for the purpose of a merger, consolidation or reorganization and where the resulting company retains creditworthiness similar to the contractor and expressly assumes all obligations of the contractor under this Agreement and is in a position to perform them; or</p> <p>(iii) the contractor repudiates this Agreement and does not rectify such breach within a period of thirty (30) days from a notice from SECL in this regard; or</p> <p>(iv) except where due to any SECL's failure to comply with its material obligations, the contractor is in breach of any of its material obligations pursuant to this Agreement, and</p>
--	--	--	---

			<p>such material breach is not rectified by the Contractor within thirty (30) days of receipt of first notice in this regard given by SECL</p> <p>(v) Occurrence of any other event which is specified in this Agreement to be a material breach/ default of the contractor.</p> <p>(vi) Failure or refusal by the Contractor to perform any of it's material obligations under this contract</p> <ul style="list-style-type: none"> • Company's Default: The occurrence and the continuation of any of the following events, unless any such event occurs as a result of a Force Majeure Event or a breach by the contractor of its obligations under this Agreement, shall constitute the Event of Default on the part of defaulting Company: <ul style="list-style-type: none"> (i) The Company fails to pay (with respect to a Monthly Bill or a Supplementary Bill), for a period of ninety (90) days after the Due Date and the contractor is unable to recover the amount outstanding to the contractor through the Letter of Credit, (ii) The Company repudiates this Agreement and does not rectify such breach even within a period of sixty (60) days from a notice from the Contractor in this regard; or (iii) except where due to any Contractor's failure to comply with its obligations, The Company is in material breach of any of its obligations pursuant to this Agreement, and such material breach is not rectified by the Company within sixty (60) days of receipt of notice in this regard from the Contractor to Company; or if <ul style="list-style-type: none"> • The company becomes voluntarily or involuntarily the subject of any bankruptcy or insolvency or winding up proceedings and such proceedings remain uncontested for a period of sixty (60) days, or • any winding up or bankruptcy or insolvency order is passed against the Company, or • The Company goes into liquidation or dissolution or a receiver or any similar officer is appointed over all or substantially all of its assets or official liquidator is appointed to manage its affairs, pursuant to Law, provided that it shall not constitute a Company Event of Default, where such dissolution or
--	--	--	--

			<p>liquidation of Buyer or Company is for the purpose of a merger, consolidation or reorganization and where the resulting entity has the financial standing to perform its obligations under this Agreement and has creditworthiness similar to Company and expressly assumes all obligations of Company and is in a position to perform them; or;</p> <p>(iv) Occurrence of any other event which is specified in this Agreement to be a material breach or default of the Company.</p>
--	--	Power Evacuation	<p>Power Evacuation shall be through tie transformers at voltage level of corresponding STU substation, which shall be identified by bidder according to the location of solar plant. Supply and installation of metering panel along with control cable shall be in bidder's scope. ABT metering arrangement at STU substation ends shall be as per STU requirement/standard. The system design and redundancy/capacity margin in EHV Power Transformer should be such that even during outage of one power Transformer, power equivalent to 70% of project capacity can be evacuated at any time to STU Grid from Main pooling MV switchgear. In case bidder supply same power transformer as common mandatory spare which can be used as one to one replacement of transformers in service, then it shall also be accounted as redundancy. Bidder can adopt any of the following criteria or better for EHV power transformers:</p> <ul style="list-style-type: none"> A. 1x100% + 1 spare of equivalent capacity B. 2x50% + 1 spare of equivalent capacity C. 2x75% D. 3x35 % (Min) or with higher number of transformer combinations. (To ensure availability of minimum 70% capacity in case of the outage of one of the transformers) <p>If the bay execution work is not carried out by STU, it shall be the responsibility of bidder for the execution of bay work along with complete integration with STU system following the applicable standards/latest Technical Standard for Construction</p>

			<p>of Substation and Switchyard published by CEA, data communication etc. as per requirement. All charges payable for the bay related works and co-ordination with STU/SLDC shall be in bidder's scope. The coordination works Interface systems, software/hardware, data integration, telemetry data, RLDC/SLDC/CEA/STU requirements etc. as required for completeness of project commissioning are included in bidder's scope. The capacity of transmission system from solar plant to STU substation shall comply with connectivity regulations and procedures. All equipment/hardware required for termination as well as equipmentsupport structure and civil works for completing the connectivity of the system up to interconnection point is in the scope of the bidder.</p> <p>Bidder can evacuate the power using single circuit or multi-circuit configuration (complying with connectivity regulations) and bid evaluation shall be done as indicated in the evaluation criteria.</p>
--	--	Hindrance Register	<ul style="list-style-type: none"> • Record of Hindrances / events that lead to slow/ stoppage of smooth execution of work shall be maintained in "Hindrance Register". • The Contractor shall maintain the Register where reasons for delay may be recorded from time to time and at the time of occurrence of the hindrance and get it duly certified by the Engineer-in-Charge of the Company or his authorized representative.
1	32	Handing Over	<ul style="list-style-type: none"> • After Commissioning of the Project by the Contractor, the Contractor to intimate the same to the Company and subsequently, appropriate authorities from the Company will check the Project as per terms and conditions of the Contract and will give punch points to the Contractor, which shall be attended by the Contractor. Further after commissioning, the Contractor shall submit the following to the Company: <ul style="list-style-type: none"> I. All as- Built Drawings; II. Detailed Engineering Document with detailed specification, schematic drawing, circuit drawing and test results, manuals for all deliverable items, Operation,

			<p>Maintenance & Safety Instruction Manual and other information about the project;</p> <p>III. Bill of material; and</p> <p>IV. Inventory of spares at projects Site.</p> <p>V. Copies of all warranties/guarantees.</p> <ul style="list-style-type: none"> • After Commissioning, the Contractor to perform Operation & Maintenance for a period as mentioned in the Tender document. • Prior to the completion of the O&M period, the Company shall conduct a plant audit by self or the third party as per the Company’s discretion, and any defects identified during such audits or inspection shall be rectified by the Contractor at its own cost prior to handing over. • If the Employer is satisfied with the completion of O&M of Solar Photo Voltaic Project as the provisions of the Contract, the Employer shall issue to the Contractor a Taking Over Certificate as a proof of final acceptance of the entire Solar Photo Voltaic Project. Such certificate shall not relieve the Contractor of any of its obligation which otherwise survive, by the terms and conditions of the Contract after issuance of such certificate. • Upon successful fulfilment of all the obligation of the Contractor, the Employer shall require the Contractor to furnish a “No Claim Certificate” as per the format enclosed at Appendix XIII. • The final closing of the contract shall be effected after the Defect Liability Period is successfully completed and the Contract Performance Security of the Contractor is returned/ discharged.
-	-	Change in Law	<ul style="list-style-type: none"> • The term Change in Law shall refer to the occurrence of any of the following events pertaining to this project only after last date of submission of this tender including (i) the enactment of any new law; or (ii) an amendment, modification or repeal of an existing law; or (iii) the requirement to obtain a new consent, permit or license; or (iv) any modification to the prevailing conditions prescribed for obtaining an consent, permit or license, not owing to any default of the contractor; or (v) any change in the

			<p>rates of any Taxes including any duties and cess or introduction of any new tax made applicable for setting up the solar power project and supply of power from project which have a direct effect on the Project.</p> <ul style="list-style-type: none"> • However, Change in Law shall not include (i) any change in taxes on corporate income or (ii) any change in any withholding tax on income or dividends distributed to the shareholders of the Contractor. • In the event of occurrence of any of events as provided under Article which results in any increase/ decrease in the Project Cost (i.e. the cost incurred by the Contractor towards supply and services only for the Project concerned, upto the Actual Commissioning Date of the last part capacity or Scheduled Commissioning Date/extended Scheduled Commissioning Date, whichever is earlier), the Contractor/ Company shall be entitled for compensation by the other party, as the case may be. • However, in case of change in rates of safeguard duty, GST and basic customs duty after last date of submission of this tender and resulting in change in Project Cost, then such change will be treated as ‘Change in Law’ and the quantum of compensation payment on account of change in rates of such duties and shall be provided to the affected party by the other party. • It is clarified that, any introduction of new tax/duty/cess made applicable for setting up the solar power project and supply of power from the Solar Power project by the Contractor which have a direct effect on the Project, resulting in change in Project Cost, will also qualify under “Change in Law” as per timeline and procedure indicated herein. • It is further clarified that, applicability of Safeguard Duty on “Solar Cells whether or not assembled in modules or panels” which is till 29.07.2021, if gets extended and has a direct effect on the Project, resulting in change in Project Cost, such extension will also qualify under “Change in Law” as per timeline and procedure indicated herein.
--	--	--	---

			<p>Notification of Change in Law</p> <ul style="list-style-type: none"> • In case of any decrease or increase in project cost occurs due to Change in Law and the Contractor wishes to claim a Change in Law under this Article, it shall give notice to the SECL of such Change in Law as soon as reasonably practicable (but no later than 30 days from the date of occurrence of such Change in Law). • Any notice service shall provide, amongst other things, precise details of the Change in Law and its effect on the Project Cost, supported by documentary evidences including Statutory Auditor Certificate to this effect so as to establish one to one correlation and its impact on the Project Cost.
2	10	Progress Report of Work	<ul style="list-style-type: none"> • The authorized representative of the Contractor shall review the progress of the Project work every fortnight on a prefixed day at project site with the Company or its representative as per the network and record the minutes. • The Contractor shall submit a weekly progress report on execution of works conforming to bar/ PERT Chart and format provided by the Company. The Contractor shall be required to attend all weekly site progress review meetings organized by the 'Engineer-in-Charge' or his authorized representative. The deliberations in the meetings shall inter alia include the weekly program, progress of work (including details of manpower, tools and plants deployed by the contractor vis-a-vis agreed schedule), inputs to be provided by Employer, delays, if any, and recovery program, specific hindrances to work and work instructions by Employer. In case of any slippage(s) or delay in execution of work reasons for such delay along with details of hindrances will be submitted by the Contractor along with modified Bar/ PERT Chart mentioning the action plan being taken to keep the due date of completion of project unchanged. If required, the Contractor shall use additional manpower to keep the due date of completion of Project unchanged. • The minutes of the weekly meetings shall be recorded in triplicate in a numbered register available with the 'Engineer-in-Charge', or his authorized representative. These recordings shall be jointly signed by the Engineer-in-Charge or his authorized

			representative and the Contractor and one copy of the signed records shall be handed over to the Contractor.
-	-	Inspection and Testing	<ul style="list-style-type: none"> • The Company or its authorized representative including appointed Consultant for the project shall have, at all times, access to the Contractor's premises and also shall have the power to inspect and examine the materials and workmanship of project work during its manufacture, shop assembly and testing. If part of the plant is required to be manufactured in the premises other than the Contractor's, the necessary permission for inspection shall be obtained by the Contractor on behalf of the Company or its duly authorized representative. • The Contractor shall offer following Test / Inspection to the Company: <ul style="list-style-type: none"> I. The Company may depute its Engineer or representative or hire an agency for Third-Party Inspection, for pre-dispatch inspection at the manufacturing facility of the Contractor all items under this Tender Document as per applicable standards, approved QAP and documents. Samples for testing shall be drawn randomly in presence of the Company/ inspecting agency from the lot offered for inspection. After Test/Inspection of the Items at factory, the Contractor is to submit the inspection & test reports to the Company for review. After review of the inspection & test reports, the Company will give dispatch clearance in writing. The Contractor shall not dispatch any item without dispatch clearance from the Company, in writing. II. The Company may depute its Engineer or representative or third party inspection agency for inspection during manufacture and in assembled condition prior to dispatch in accordance with the standard practice/ QAP of the manufacturer and applicable Standards, at no additional cost to the Company for demonstration and performing the test/inspection. The Contractor shall raise inspection call with internal test reports in advance for all items like PV Modules, MMS, cables, SJBs, Inverters, Transformers, HT & LT switchgears, DC system, Switchyard equipment, earthing system, SCADA, RMU etc. III. Upon delivery of the photovoltaic modules on site, they shall be sampled randomly and tested for performance through an approved testing agency

			<p>assigned by the Company. The result of such testing agency shall be binding to both the parties and shall be considered final performance measurement report for the guarantee / warrantee conditions of this contract.</p> <ul style="list-style-type: none"> • In case of underperformance or rejection of the photovoltaic modules during above inspection or during operational lifetime of project, the Company shall notify the Contractor of such underperformance or rejection by email or in writing. <ul style="list-style-type: none"> I. Consecutively, the Contractor shall immediately replace such PV modules by supplying a new PV module of similar specification conforming to the required performance criteria and warranty to the Company within a period of 10 days from the date of intimation by email or written notice. II. Upon receipt of the new PV module, the Contractor shall arrange to collect the rejected/defective photovoltaic module from site. III. The cost of transportation of the PV modules from the supplier to the site of SECL, and return shall be borne by the Contractor. • The Company shall have the right to serve notice in writing to the Contractor on any grounds of objections, which he may have in respect of the work. The Contractor has to satisfy the objection, otherwise, the Company at his liberty may reject all or any component of plant or workmanship connected with such work. • The Contractor shall issue request letter to the Company or his authorized representative for testing of any component of the plant, which is ready for testing at least fifteen (15) days in advance from the date of actual date of testing at the premises of the Contractor or elsewhere. When the inspection and the tests have been satisfactorily completed at the Contractor's works, the Company shall issue a certificate to that effect. However, the Owner at its own discretion may waive the inspection and testing in writing under very special circumstances. In such case, the Contractor may proceed with the tests which shall be deemed to have been made in the Company's presence, and it shall forthwith forward six (6) sets of duly certified copies of test results and certificates to the Company for approval of the Company. The Contractor, on receipt of written acceptance from the Company, may dispatch the equipment for erection and installation.
--	--	--	--

			<ul style="list-style-type: none"> • For all tests to be carried out, whether in the premises of the Contractor or any Subcontractor or the supplier, the Contractor, shall provide labor, materials, electricity fuel, water, stores, apparatus and instruments etc. free of charge as may reasonably be demanded to carry out such tests of the plant in accordance with the Contract. The Contractor shall provide all facilities to the Company or its authorized representative to accomplish such testing. • The Company or his authorized representative shall have the right to carry out inward inspection of the items on delivery at the Site and if the items have been found to be not in line with the approved specifications, shall have the liberty to reject the same. • If the Company desires, testing of any component(s) of the plant be carried out by an independent agency, the inspection fee, if any, shall be paid by the Owner. However, the Contractor shall render all necessary help to the Company whenever required free of charge. • The Contractor has to provide the necessary testing reports to the Company as and when required. • Neither the waiving of inspection nor acceptance after inspection by the Company shall, in anyway, absolve the Contractor of the responsibility of supplying the plant and equipment strictly in accordance with specification and drawings etc. • If any item is not found conforming to standards during test / inspection, the same shall be replaced / rectified by Contractor without any cost to the Company and shall be re-offered for inspection. • The work is subject to inspection at all times and at all places by the Company. The Contractor shall carry out all instructions given during inspection and shall ensure that the work is carried out according to the relevant codes of practice • Decision of the Company in regard to the quality of work and materials and performance to the specifications and drawings shall be final.
--	--	--	--

--	--	Authorized Test Centers	<ul style="list-style-type: none"> The PV modules, inverters, transformers, panels, wires, etc. deployed in the power plants shall have valid test certificates for their qualification as per IEC/ BIS Standards by one of the reputed labs of the respective equipment (preferably NABL Accredited Test Centres) in India. In case of module or other equipment for which such Test facilities may not exist in India, test certificates from reputed ILAC Member Labs abroad or from test reports as per industry best practices in India will be acceptable.
-	-	Terms of Payment	<p>All payment shall be made against invoices raised in line with the approved billing break up under individual heads of Supply, Works and O&M works.</p> <p>A. The payment for the Supply Portion - First Contract (Supply Contract) shall be made as per the following terms and conditions:</p> <p>Mobilization advance (optional) can be claimed by the contractor within a time period of 30% of the original Schedule Contract Period along with requisite conditions as per Clause 50 of NIT.</p> <p>10% of the value of Supply Contract can be claimed as Mobilization Advance payable in 2 instalment as follows:</p> <p>(i) 1st installment: At the time of placing of material order with submission of necessary supporting document.</p> <p>(ii) 2nd Installment: At the time of inspection of material with submission of necessary supporting document.</p> <p>The mobilisation advance of 10% shall be proportionately adjusted from the running bills of the contractor during initial 70% payment of “Supply contract”.</p>

		<p>(a) Sixty Five percent (65%) payments (if mobilization advance is availed)/ Seventy Five percent (75%) payments (if mobilization advance is not availed)/ shall be paid on Pro rata basis against supply, receipt and acceptance of Materials at site on submission of documents , Contractor’s detailed invoice & packing list identifying contents of each shipment, evidence of dispatch (GR/ LR copy), Manufacturer’s/ Contractor’s Guarantee certificate of Quality, submission of the certificate by the Executing Agency’s authorized representative that the item(s) have been received and MDCC (Material Dispatch Clearance Certificate) issued by EMPLOYER’s authorized representative in original.</p> <p><i>* In case the mobilization advance is availed by the Contractor and no progress/work is executed at site till the commissioning period or if the contract is terminated due to default of contractor as mentioned under the Contract/tender, thereby not adjusting the advance amount timely, the entire advance amount will be recovered from the Contractor along with one-year SBI MCLR rate. Reference of SBI MCLR rate shall correspond to the rate as on 1st April of each year.</i></p> <p>(b) Ten percent (15%) price of each item quoted in supply shall be paid after installation of each item on Unit rate basis and certification of the same by the Project Manager/In-charge.</p> <p>(c) Five percent (5%) price of supply of the plant and Equipment shall be payable on successful completion of Performance Guarantee tests and certification of the same by the Project Manager.</p> <p>(d) Five percent (5%) price of supply of the plant and equipment against shall be payable after Final take over and certification of the same by the Project Manager.</p> <p><i>Additional condition for release of last 2 bills of 5% each totaling to 10% of Supply Contract Value:</i></p>
--	--	---

		<p><i>In case PBG submitted by the bidder has not been encashed for delay LD, then no additional BG is required from the Bidder.</i></p> <p><i>In case PBG submitted by the bidder has been encashed for delay LD in part of full, bidder has to furnish the additional BG falling short from the remaining PBG amount.</i></p> <p>B. The payment for the Service Portion - Second Contract (Works Contract) shall be made as per the following terms and conditions.</p> <p>90% of the price of the Civil and Structural works shall be payable on pro-rata basis after completion of installation of equipment of the Solar Power Plant and certification of the same by the Project Manager.</p> <p>Five percent (5%) price of the Civil and Structural works shall be payable on successful completion of Performance and Guarantee tests as specified and certification of the same by the Project Manager.</p> <p>The final five percent (5%) price of the Civil and Structural works shall be payable after Final take over and certification of the same by the Project Manager.</p> <p>Additional condition for release of last 2 bills of 5% each totaling to 10% of Works Contract Value:</p> <p>In case PBG submitted by the bidder has not been encashed for delay LD, then no additional BG is required from the Bidder.</p> <p>In case PBG submitted by the bidder has been encashed for delay LD in part of full, bidder has to furnish the additional BG falling short from the remaining PBG amount.</p> <p>Note: Final take over will occur when the following are achieved</p> <ul style="list-style-type: none"> i. All supplies and services have been completed as per the Supply and Works Contract. ii. The Contractor has met any and all obligations under the Supply and Works Contract. iii. Final balance documentation, if any, incorporating latest modifications in ‘as built’ drawings has been submitted by the Contractor in requisite copies.
--	--	---

		<p>iv. The Contractor has rectified in a definite manner all objections / observations mentioned in the "Commissioning Certificate".</p> <p>v. Successful completion of Performance Guarantee Test for the plant and acceptance of PG Test Report submitted.</p> <p>C. For the Third Contract (Operation & Maintenance Part), the payment shall be made as detailed below: -</p> <p>Operation and Maintenance of the entire Project payment will be released on quarterly basis at the end of every quarter for each year till 10 (Ten) years. The bills will be calculated on pro-rata basis based on the capacity commissioned.</p> <p>In case of any default, Non-Performance or breach of contractual conditions of the O&M contract during the O&M period, the penalties/deductions, if applicable will be liable to be deducted from the Quarterly O&M payments first & then from the Contract Performance Security</p> <p>The required ESI/PF Challans/any other mandatory compliance will also be provided by the Contractor during any of the Service (Services + O&M) related payments.</p> <p>All the payment shall be released from Owner's Head Office upon submission of Original Documents like MDCC, delivery challan, warranty certificate, LR, WCC, MRN, commissioning certificate, handing over certificate, Insurance, PF, ESI, etc. as required and mentioned against each Milestone payment, duly certified by the authorized representative of the EMPLOYER/Owner.</p>
-	-	<p>Payment Procedure</p> <ul style="list-style-type: none"> • Subject to any deduction which the Employer may be authorized to make under this Contract, and or to any additions or deductions provided for this Contract, the Contractor shall be entitled to payment as follows: <ul style="list-style-type: none"> I. All payments shall be made in Indian Rupees (INR), unless otherwise specified in the LOA/Contract Agreement. All payment shall be made on the basis of actual measurement for the quantified items as per schedule of works.

			<p>II. The Contractor shall submit the Tax Invoice for claim in three copies with relevant GST details and all supporting documents as per the Contract condition to the Employer. After due verification and recommendation, the Employer shall process verified bills for release of payment. Payments shall be released in 30 (Thirty) days by A/c payee cheque / RTGS/ NEFT or any other mode as communicated by the Employer from date of submission of clear invoice.</p> <p>III. The Contractor shall give complete shipping information concerning the weight, size, content of each package including any other information the Employer, may require.</p> <p>a. For offshore supplies by the Contractor, following documents shall be air-mailed to the Employer within (7) days from the date of shipment. The advance copy of these documents shall be sent through e-mail:</p> <ul style="list-style-type: none"> i. Insurance certificates (6 copies) ii. Bill of lading (5 non-negotiable copies) iii. Invoice (6 copies) iv. Packing list (6 copies) v. Test certificate (3 copies) vi. Certificate of Origin (six copies) vii. One copy of the packing list shall also be enclosed in each case. viii. O & M Manuals &/or Catalogues <p>b. For onshore supply, the following documents shall be submitted through registered post to the Employer within 3 days from the date of shipment, the advance copy of these documents shall be sent through e-mail.</p> <ul style="list-style-type: none"> i. Invoice (4 copies) ii. LR copies iii. Packing list (4 copies) iv. Test Certificate (3 copies) v. One copy of the packing list shall also be enclosed in each case. vi. O & M Manuals &/or Catalogues
--	--	--	--

			<p>IV. The Contractor shall submit the Tax Invoice for the work executed showing separately GST and any other statutory levies in the Tax Invoice.</p> <p>V. Any discrepancy and delay, which result in demurrage and other charges for the consignment (for incomplete/incorrect documentation) will be to the account of the Contractor. All the formalities for custom clearance are in the Contractor's scope.</p> <p>VI. All taxes and deductions shall be applicable as per prevailing statutory rules and provisions in force.</p> <p>VII. In case the Contractor fails to submit the invoice with all the required documents to process payments, the Employer reserves the right to hold the payment of the Contractor against such invoices.</p>
-	-	Warranty/ Guarantee	<ul style="list-style-type: none"> • The Plant shall perform as per the Guaranteed Performance indicated by the Bidder in its Bid. • PV modules used in the project must be warranted by the module Manufacturer/OEM for peak output wattage, which should not be less than 90% at the end of 10 years and 80% at the end of 25 years. • All plant equipment and components and overall workmanship of the grid solar power plants shall be warranted for a minimum of 10 years except solar PV Modules for which product warranty shall be for 10 years and performance warranty shall be for 25 years. • The Contractor shall ensure that the goods supplied under the Contract are new, unused and of most recent or current models and incorporate all recent improvements in design and materials unless provided otherwise in the Contract. • At the end of Contract period, the Contractor's liability shall cease. SECL shall be entitled to the benefit of such warranty given to the Contractor by the original contractor or manufacturer or supplier of such goods. • During the Contract period, the Contractor shall be responsible for any defects in the work due to faulty workmanship or due to use of substandard materials in the work.

			Any defects in the work during the Contract period shall therefore, be rectified by the Contractor without any extra cost to SECL within a reasonable time as may be considered from the date of receipt of such intimation from SECL failing which SECL shall take up rectification work at the risk and cost of the Contractor.
--	--	Project Management Consultant and Third-Party Inspection Agency	<ul style="list-style-type: none"> • A Project Management Consultancy (PMC) or Third-Party Inspection agency (TPI) may be appointed by the Company, at its sole discretion, to conduct any kind of inspection regarding procurement, fabrication, installation, hook-up, quality, execution, commissioning, operation and maintenance during the span of the Project. The Contractor shall provide necessary access and coordination to conduct such inspections. The Contractor shall provide all necessary access and cooperation for inspection by any National or State agency.
--	--	Power and Water Supply during Construction	<ul style="list-style-type: none"> • The Contractor shall arrange for the temporary Power Supply at the site for construction purpose at its own cost. • Cost of water shall be as per prevailing rate and to be borne by the Contractor. Contractor has to arrange water. • Cost of electricity required during construction shall be payable by the Contractor. For construction, temporary connection from Distribution Company shall be arranged by the Contractor as per applicable tariff. • The Company shall not provide facility for storage of material, and accommodation for labors at site. The Contractor shall make his own arrangement for the same.
--	--	Shift Work	<ul style="list-style-type: none"> • To achieve the required rate of progress in order to complete the Facilities within the Time for Completion, the Contractor may carry on the work round the clock, in multiple shifts per day, as may be necessary. The Contractor shall however be responsible to comply with all applicable laws in this regard. • No additional payment will be made on account of round the clock working in multiple shifts.

			<ul style="list-style-type: none"> Wherever the work is carried out at night adequate lighting of working areas and access routes for pedestrians or vehicles shall be provided by the Contractor at his cost. Sufficient notice should be given by the Contractor to the Employer regarding the details of works in shifts so that necessary supervision should be provided. 												
--	--	Transportation of Materials by Road	<ul style="list-style-type: none"> In case, the Contractor decides to transport the Plant and Equipment and the Contractor's Equipment by road, then such Plant and Equipment and the Contractor's Equipment must necessarily be transported through a registered common carrier as per Carriage by Road Rules 2011 of Central Government of India. 												
--	--	Contractor's obligations	<ul style="list-style-type: none"> Subsequent to successful completion of Guarantee Test, the Contractor shall be responsible for completion of all pending obligations within the stipulated timelines as mentioned hereunder: <table border="1"> <thead> <tr> <th>S. No</th> <th>Contractor's Obligation</th> <th>Timelines</th> </tr> </thead> <tbody> <tr> <td>01</td> <td>Any inputs regarding Scope Change</td> <td>Within 01 month from the date of successful completion of Guarantee Test</td> </tr> <tr> <td>02</td> <td>Submission of pending Engineering Documents/Drawings including O&M Manuals.</td> <td>Within 01 month from the date of successful completion of Guarantee Test</td> </tr> <tr> <td>03</td> <td>Contractor's compliance to all the pending points recorded in writing by the Employer during</td> <td>Within 01 month from the date of successful completion of Guarantee Test</td> </tr> </tbody> </table>	S. No	Contractor's Obligation	Timelines	01	Any inputs regarding Scope Change	Within 01 month from the date of successful completion of Guarantee Test	02	Submission of pending Engineering Documents/Drawings including O&M Manuals.	Within 01 month from the date of successful completion of Guarantee Test	03	Contractor's compliance to all the pending points recorded in writing by the Employer during	Within 01 month from the date of successful completion of Guarantee Test
S. No	Contractor's Obligation	Timelines													
01	Any inputs regarding Scope Change	Within 01 month from the date of successful completion of Guarantee Test													
02	Submission of pending Engineering Documents/Drawings including O&M Manuals.	Within 01 month from the date of successful completion of Guarantee Test													
03	Contractor's compliance to all the pending points recorded in writing by the Employer during	Within 01 month from the date of successful completion of Guarantee Test													

				Performance Guarantee Test.	
			04	Any other obligations of the Contractor set forth in the Contract	Within 01 month from the date of successful completion of Guarantee Test.
2	1	Definitions	<ul style="list-style-type: none"> • “Actual Energy Delivered” means the net energy in kilo-watt hour (kWh) from the Project as measured at the Metering Point at Grid/delivery point. • “Applicable Law” means any statute, law, regulation, ordinance, notification, rule, regulation, judgment, order, decree, bye-law, approval, directive, guideline, policy, requirement or other governmental restriction or any similar form of decision of, or determination by, or any interpretation or administration having the force of law in the Republic of India and the State Government, by any Government Authority or instrumentality thereof, whether in effect as of the date of this Contract or thereafter. • “Appropriate Commission” shall mean Electricity Regulatory Commission unless otherwise stated; • “Bid” shall mean the bid submitted by the Bidder in response to this Tender. • “Bidder” shall mean Bidding Company or a Bidding Individual submitting the Bid. Any reference to the Bidder includes Bidding Company / Bidding Individual including its successors, executors and permitted assigns severally, as the context may require; • “Capacity Utilization Factor (CUF)” shall have the same meaning as provided in CERC (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2009 as amended from time to time; However, for avoidance of any doubt, it is clarified that the CUF shall be calculated on the Contracted Capacity as per following formula: 		

			<p>In any Contract Year, if ‘X’ MWh of energy has been metered out at the Delivery Point for ‘Y’ MW Project capacity, $CUF = (X \text{ MWh} / (Y \text{ MW} * 8766)) * 100\%$; “CERC” means Central Electricity Regulatory Commission.</p> <ul style="list-style-type: none"> • “Change in Law” shall have the meaning ascribed thereto in this Tender document. • “Chartered Accountant” shall mean a person practicing in India or a firm whereof all the partners practicing in India as a Chartered Accountant(s) within the meaning of the Chartered Accountants Act, 1949. • "Commercial Operation Date (COD)" shall be the date on which the commissioning certificate is issued by concerned Discom upon successful commissioning of the full capacity of the Project including the DC to AC ratio as quoted by the bidder. • “Commissioning”: The Solar Power Project will be considered as commissioned if all equipment as per rated project capacity has been installed and energy has gone into the grid and witnessing of such generation of electricity by representatives authorized by DISCOM/ CTU. • “Completion” means that the Facilities (or a specific part thereof where specific parts are specified in the Scope of Work) have been completed operationally and structurally and put in a tight and clean condition and that all work in respect of Commissioning of the Facilities or such specific part thereof has been completed as per the Scope of Work. • “Completion Certificate” shall mean the certificate to be issued by the owner or his representative when the works have been completed to his satisfaction. • “Contract” or “Contract Agreement” means the Contract signed between the Company (SECL) and the Contractor to execute the entire Scope of Work as given in this RFP document. • “Contracted Capacity” shall mean 40 MW (AC) contracted with the Company for supply at the Delivery Point from the Project.
--	--	--	---

			<ul style="list-style-type: none"> • “Contracted CUF” shall mean the % capacity utilization factor of the project measured at the Delivery Point as specified in the Contract. • “Contractor” means the person(s) whose bid to perform the Contract has been accepted by the Company and is named as such the Contract Agreement, and includes the legal successors or permitted assigns of the Contractor. • “Contractor’s Equipment” means all plant, facilities, equipment, machinery, tools, apparatus, appliances or things of every kind required in or for installation, completion and maintenance of Facilities that are to be provided by the Contractor, but does not include Plant and Equipment, or other things intended to form or forming part of the Facilities. • “Day” means calendar day of the Gregorian/English calendar. • “Delivery Point”/” Inter-connection Point" shall be the point or points of inter-connection of project with STU/CTU Grid i.e. STU/CTU Periphery at which Electricity shall be delivered. • All expenses, including transmission / wheeling charges and losses upto Delivery Point including on account of any Change in Law event, shall be paid by the Successful Bidder without any reimbursement by SECL. • “Defect Liability Period” means the period of validity of the warranties given by the Contractor, during which the Contractor is responsible for defects with respect to the Facilities (or the relevant part thereof) as provided in Defect Liability clause hereof. Defect Liability Period shall be for a duration upto the end of the O&M period or as for any duration extended by the mutual agreement of both the parties. • “Effective Date” for this Contract shall mean the date of commencement of work • “Facilities” means the Plant and Equipment to be supplied and installed, as well as all the Installation Services to be carried out by the Contractor under the Contract for enabling the installation, construction, testing and commissioning of the Solar Power System(s).
--	--	--	--

			<ul style="list-style-type: none"> • “Government Authority” means Government of India, any state government or any governmental department, commission, board, body, bureau, agency, authority, undertaking, court or other judicial or administrative body or any sub-division or instrumentality thereof, central, state, or local, having jurisdiction over the Contractor, the Facility, or the performance of all or any of the services, obligations or covenants of Contractor under or pursuant to this Contract or any portion thereof. • “Guarantee Test(s)” means the Performance Guarantee test(s) specified in the Technical Specifications to be carried out to ascertain whether the Facilities or a specified part thereof is able to attain the Functional Guarantees. • “Installation Services” means all those services ancillary to the supply of the Plant and Equipment for the Facilities, to be provided by the Contractor under the Contract; e.g., transportation and provision of marine or other similar insurance, inspection, expediting, Site preparation works (including the provision and use of Contractor’s Equipment and the supply of all civil, structural and construction materials required), installation, Commissioning, carrying out guarantee tests, operations, maintenance, the provision of operations and maintenance manuals, training of Company’s personnel etc. • “Interconnection Facilities” shall mean the facilities from the Project up to the grid connection point for scheduling, transmitting and metering the electrical output in accordance with the Long Term Open Access and which shall include, without limitation, all other transmission lines and associated equipment, transformers, relay and switching equipment and protective devices, safety equipment and RTU, Data Transfer and Acquisition facilities for transmitting data, the Metering System required for supply of power as per the terms of the Terms and conditions of the LTOA . • “Metering Point” shall have the same meaning as Delivery Point • “MNRE” means Ministry of New and Renewable Energy, Government of India.
--	--	--	---

			<ul style="list-style-type: none"> • “Month” means shall mean a period of thirty (30) days from (and excluding) the date of the event, where applicable, else a calendar month of the Gregorian/English calendar. • “O&M” means Operations and Maintenance. • “Project” or “Solar Power Project” or “Solar Project” is defined as the 40 MW(AC) Grid-Connected Solar Photovoltaic Power Plant proposed to be located in the State of Madhya Pradesh and having a separate control system, metering and a single or multiple point(s) of injection into the grid at Delivery/Metering point at STU/CTU substation or in case of sharing of transmission lines, by separate injection at pooling point. This includes all units and auxiliaries such as water supply, treatment or storage facilities; bay/s for transmission system in the switchyard, dedicated transmission line up to the Delivery Point and all the other assets, buildings/structures, equipment, plant and machinery, facilities and related assets required for the efficient and economic operation of the power generation facility; whether completed or at any stage of development and construction or intended to be developed and constructed for the purpose of supply of power as per this Agreement. • “Plant Capacity” or “Project Capacity” shall mean the Contracted Capacity of the Project measured at the Delivery Point. • "Prudent Utility Practices" shall mean those practices, methods, techniques and standards, that are generally accepted for use in electric utility industries taking into account conditions in India, and commonly used in prudent electric utility engineering and operations to design, engineer, construct, test, operate and maintain equipment lawfully, safely, efficiently and economically as applicable to power stations of the size, service and type of the Project, and that generally conform to the manufacturers' operation and maintenance guidelines. • “RFP document” or “Tender document” or “Tender” shall mean this bidding document issued by the Company including all attachments.
--	--	--	--

			<ul style="list-style-type: none"> • “Site” means the land and other places upon which the Facilities are to be installed, and such other land or places as may be specified in the Contract as forming part of the Site. • “Solar Power System(s)” means the solar photovoltaic grid interactive power system(s) to be established at the site specified in the Tender Document. • “Subcontractor”, including vendors, means any person to whom execution of any part of the Facilities, including preparation of any design or supply of any Plant and Equipment, is sub-contracted directly or indirectly by the Contractor, and includes its legal successors or permitted assigns. • “Successful Bidder” means the bidder who has been awarded the Contract and described as Contractor for the “Project”. • “Time for Completion” shall be the date on or before which Commissioning of the Facility has to be achieved to the satisfaction of the Company and such date is specified in NIT. • “Year” means a period of 12 full consecutive months or 365 consecutive days. • “Goods and Services Tax” or “GST” means taxes or cess levied under the Central Goods and Services Tax Act, Integrated Goods and Services Tax Act, Goods and Services Tax (Compensation to States) Act and various State/Union Territory Goods and Services Tax Laws and amendments thereof and applicable cesses, if any under the laws in force (hereinafter referred to as relevant GST Laws), which shall be fully complied with by Bidders.
--	--	--	---

SECTION – IV: SAFETY CODE

1.0 GENERAL PROVISIONS:

1.1 Housekeeping:

- a) The contractor shall be primarily responsible for maintaining Good housekeeping and safety standards in the workplace;
- b) Loose materials that are not required for use shall not be placed or left behind so dangerously as to obstruct workplaces or passageways;
- c) All projecting nails shall be removed or bent to prevent injury;
- d) Equipment, tools and small objects shall not be left lying unattended or unsecured from where they could fall or cause a person to trip;
- e) Scrap, waste or rubbish shall not be allowed to accumulate in the site as these combustibles can create serious fire hazards and affect safe working;
- f) Workplaces and passageways that become slippery owing to spillage of oil or other causes shall be cleaned up or strewn with sand, ash or the like;
- g) Portable equipment shall be returned after use to their designated storage place.

1.2 Means of access and egress

shall consist of

- a) Adequate and safe means of access and egress shall be provided in all workplaces;
- b) The means of access and egress shall be maintained in a safe condition;

1.3 Lighting and ventilation

- a) All practical measures shall be taken to prevent smoke, fumes etc. from obscuring any workplace or equipment at which any worker is engaged;
- b) Adequate and suitable artificial lighting shall be provided where natural lighting is not sufficient as per IS 3646 (Part II). The artificial lighting so provided shall not cause any incidental any danger, including that of producing glare or disturbing shadows;
- c) To prevent danger to health from air contamination by dust generated during grinding, cleaning, spraying or manipulation of materials as also to provide protection against dangerous gases, fumes, vapours, mist, etc. effective arrangements shall be made for ventilation;
- d) Workers shall be provided with suitable respiratory protective equipment, if it is not technically possible to have uncontaminated air. To this end, a study by a competent person shall be made to decide on the due protection. Sufficient illumination at all times for maintaining safe working conditions shall be provided where building workers are required to work or pass, and for passageways, stairways and landings such illuminations shall not be less a than 0.5 foot candles at the floor level;
- e) Where natural lighting is not adequate to prevent danger, adequate and suitable lighting shall be provided as per IS: 3646 – Part II;
- f) Artificial lighting shall not cause any danger due to a brightness greater than 10 foot candles per square inch, except where the angle of inclination from the eye to the source or the part pf the fitting as the case may be exceeds 200, including that of producing glare or disturbing shadows;

- g) Where necessary to prevent danger to health from air contamination by dust from the grinding, cleaning, spraying, or manipulating of materials or objects, arrangements shall be made to limit the concentration of the pollutants by thorough ventilation, and dust generated due to movement of earthmoving machinery and other construction equipment, by spray of water in the area from time to time;
- h) Adequate ventilation by the circulation of fresh air shall be maintained in such places where the concentration of pollutants is likely to affect the health of the workers;

- i) Special care shall be taken to ventilate the workplace where gas cutting, welding or other operations involving generation of dangerous fumes, vapours, mists, gases etc is likely;
- j) Where it is technically not possible to eliminate dust or noxious or harmful fumes or gases sufficiently to prevent injury to the health of the workers, the contractor shall provide suitable respiratory equipment like dust mask or gas/fume mask or breathing apparatus or other suitable respiratory equipment.

1.4 Dangerous and harmful environment:

- a) When an internal combustion engine exhausts into confined space or excavation or tunnel or any other workplace where neither natural ventilation nor artificial ventilation system is adequate to keep the carbon monoxide content of the atmosphere below fifty parts per million, adequate and suitable measures shall be taken at such workplace in order to avoid exposure of building workers to health hazards;
- b) No building worker shall be allowed to enter any confined space or tank or trench or excavation wherein there is given off any dust fumes or other impurities of such nature and to such extent as is likely to be injurious or offensive to the building worker or in which explosives, poisonous, noxious or gaseous material or other harmful articles have been carried or stored or in which dry ice has been used as a refrigerant, or which has been fumigated or in which there is a possibility of oxygen deficiency, unless all practical steps have been taken to remove such dust, fumes or other impurities and dangers which may be present

and to prevent any further ingress thereof, from such workplace or tank or trench or excavation;

- c) No worker shall be allowed to enter any such space unless a responsible person has certified it safe and fit for the entry of such building workers.

1.5 Fumes/gases due to Welding and gas-cutting operations:

When welding or cutting operations are carried out in a confined space:

- a) Adequate ventilation, by means of exhaust fans or forced draught, as the condition may require, shall be constantly provided; otherwise enough quantity of air shall be circulated by means of air compressors to dilute the contaminant within permissible limits;
- b) Workers shall take necessary precautions to prevent unburned combustible gas or oxygen from escaping inside a tank or vessel or other confined space;
- c) Welding or cutting operations on any container that has held explosives or where inflammable gases may have been generated, shall be undertaken after the container has been thoroughly cleaned by steam or other effective means; and
- d) Gas-test shall be carried out ensure that the confined space is completely free from combustible gases and vapours.
- e) Dust, gases, fumes
- f) Concentration of dust, gases or fumes shall be prevented by providing suitable means to control their concentration within the permissible limit so that they may not cause injury or create health hazard to a building worker;

- g) For protection against such hazardous substances, besides efficient and effective means of control, personal protective equipment like dust masks, breathing apparatus, other respiratory appliances, goggles, as the case may be, shall be provided.

1.6 Excessive noise:

- a) Adequate measures shall be taken against the harmful effects of an excessive noise;
- b) Use of earplugs/muffs and anti-vibration gloves shall be ensured to protect the workers from the impact of exposure to such dangers;
- c) The noise level in no case shall exceed as prescribed in the concerned Rules and exposure in excess of 115 dBA over the period of a quarter of an hour cannot be permitted.

1.7 Corrosive substances:

- a) All corrosive substances, including alkalis and acids, shall be stored and used by a person dealing with such substances at a building or other construction work in such a manner that it does not endanger the building worker and suitable protective equipment shall be provided by the employer to a building worker during handling or use of such substances at a building or other construction work and in case of spillage of such substances on the building worker, immediate remedial measures shall be taken;
- b) While protection of the body could be ensured by use of corrosion resistant apparel/overalls, suitable goggles, gloves, apron, gum boots etc. shall be made available to all concerned personnel;

- c) To deal with an accidental spillage of a corrosive substance on the body of a worker, the facility of eyewash fountain or water shower, as the case may be, shall be installed, within the easy reach of the workplace.
- d) Eye protection:
- e) Suitable personal protective equipment for the protection of eyes shall be provided and used by the building worker engaged in operations like welding, cutting, chipping, grinding or similar operations which may cause hazard to his eyes;
- f) Goggles or face shield or welding screen with suitable shade of glass/filters etc shall be provided for the protection of the eyes.

1.8 Overhead protection:

- g) It shall be ensured that at the building or other construction site, overhead protection is erected along the periphery of every building under construction that shall be of fifteen meters or more in height when completed;
- h) Overhead protection shall not be less than two meters wide and shall be erected at a height not more than five meters above the base of the building and the outer edge of such overhead protection shall be one hundred fifty millimeters higher than the inner edge thereof or shall be erected at an angle of not more than twenty degrees to its horizontal sloping into the building;
- i) It shall be also ensured that at the building and other construction work that any area exposed to risk of falling material, articles or objects is roped or cordoned off or otherwise suitably guarded from inadvertent entry of persons other than building workers at work in such area.

1.9 Lifting and carrying of excessive weight:

- a) No building worker lifts by hand or carries overhead or over his back or shoulders any materials, articles, tools or appliances exceeding in weight the maximum limits as set out in the following table unless aided by any other building worker or a mechanical device;
- b) No worker aided by other workers, lift by hand or carry overhead or over their back or shoulders any materials, articles, tools or other appliances exceeding in weight the sum total of the maximum limits as prescribed in the concerned Rules, unless aided by a mechanical devices.

1.10 Protections against fall of persons –

- a) All scaffolds/working platforms at height of two metres or more shall be fenced;
- b) All guard-rails for the fencing of floor openings, gangways, elevated workplaces shall be made of sound material, good construction and possess adequate strength and be between 1 m and 1.5 m above platform level, consist of two rails (two ropes or chains may be used if they are sufficiently taut) and supporting stanchions;
- c) Intermediate rails, ropes or chains shall be midway between the top and lower of edges of the top rail;
- d) Sufficient number of stanchions or standard poles or uprights shall be maintained to ensure the required stability and resistance;
- e) Guard-rails shall be free from sharp edges and be maintained in good repair;

- f) Floor openings through which persons could fall, shall be guarded by covering or fencing;
- g) If the means of protection is removed to allow the passage of persons or goods or other purpose, the same shall be replaced as soon as possible, while making temporary arrangements for reasonable degree of safety in the meanwhile;
- h) Covers for floor opening shall be safe to walk on and if vehicles operate thereon it shall be safe for the same. This will require the contractor to have prior assessment of expected loads;
- i) Cover for floor opening shall be secured by hinges, grooves, stops or other effective means against sliding, falling down or lifting out or any other inadvertent displacement;
- j) Covers for any openings shall not constitute any hindrance to traffic and, as far as practicable, be flush with the floor;
- k) If covers constitute as grids, the bars shall be spread not more than 5 cm apart;
- l) Elevated workplaces at more than 2 m above the floor or ground shall be protected on all open sides by guardrails. It is commonly observed that fragile barricade tapes are used as a substitute of a strong and dependable fencing. This practice is prohibited. The barricade tapes can be used as markers/route guide only;
- m) Elevated workplaces shall be provided with safe means of access and egress such as stairs, ramps or ladders according to suitability;
- n) Persons employed at elevated workplaces or other situations at more than 2m from which they may fall, shall be protected by means of

adequate safety nets, or platforms, or be secured by safety belts with the lanyard properly anchored above the head level of the user. All possible effort shall be made to have strong and dependable mechanical arrangement.

1.11 Protection against fall of objects and materials:

- a) Materials and objects such as scaffolding materials, waste materials or tools shall not be thrown up or down from heights, as they are liable to cause injury;
- b) If materials and other objects cannot be safely lowered from heights, adequate precautions such as the provision of fencing, lookout men or barriers shall be provided to protect any person from injury.

1.12 Protection against entry of unauthorized persons:

- a) Construction zones in the site and built up areas alongside main traffic routes shall be barricaded;
- b) Unauthorized persons shall not be allowed access to construction sites and visitors shall be provided with the required protective equipment and it be ensured that they use them effectively.

1.13 Head protection and other protection apparel:

Every building worker who is required to –

- a) Pass through or working within the areas where there is hazard of his being struck by falling objects or materials, shall be provided with safety helmets of the type approved and tested in accordance with the national standards;

- b) Work in water or in wet concrete or in other similar work, shall be provided with suitable waterproof;
- c) Work in rain or in similar wet condition, shall be provided with waterproof coat with hat;
- d) Workers using or handling of alkalis, acid or other similar corrosive substances shall be provided with appropriate protective equipment in accordance with the approved standards;
- e) Every building worker engaged in handling sharp objects or materials at a building or other construction work, which may cause hand injury, shall be provided with suitable hand gloves in accordance with the approved standards.

1.14 Stability of structures:

- a) No wall, chimney or other structure or part of a structure shall be left unsupported in such condition that it may fall, collapse or weaken due to wind pressure, vibration or due to any other reason. Entry of persons into such locations where tall structures are being built shall be regulated without a let up.

1.15 Safety of Structures and equipment and other safety concerns

- a) Safety of structures like scaffoldings, platforms, gangways/walkways, towers, stairs, ladders, ramps, safety in excavation, formwork, falsework, demolition work, storage, handling and use of explosives, inflammable substances and hazardous materials, gas cutting and welding, use of electricity etc.; and equipment viz. construction machinery, crushers and batching plant, boiler and other pressure vessels, transport and material handling equipment, lifting appliances,

vehicles etc., shall be operated and maintained as per approved norms and –

- b) They shall be made of sound material and of good construction, free from patent defects, provided with adequate safe guards, properly maintained, periodically inspected and strong enough to withstand safely the loads and stresses to which they may be subjected;
- c) They shall carry enough factor of safety bearing in mind that the possibility of their abuse, which otherwise shall be prevented by constant and adequate supervision, cannot be ruled out altogether;
- d) It is incumbent on the contractor to ensure that only competent and authorized persons operate the equipment or attend to electrical and mechanical systems and repair of faults or breakdowns etc.
- e) Working in the confined space may involve certain serious hazards. Strict adherence to the conditions of Permit-to-work issued for the purpose is required;
- f) Control of energy sources shall be ensured through Log-out/Tag-out practices.

1.16 Slipping, tripping, cutting, drowning and falling hazards:

- a) The contractor shall keep all passageways, platforms and other places free from accumulations of dust, debris or similar material and from other obstructions that may cause tripping;
- b) Any sharp projections or protruding nails or similar projections which may cause any cutting hazard to a building workers shall be removed or otherwise made safe by taking suitable measures;

- c) No contractor shall allow any building worker at construction work to use the passageway, or a scaffold, platform or any other elevated working surface which is in slippery and dangerous condition and shall ensure that water, grease, oil or other similar substances which may cause the surface slippery, be removed or sanded/saw-dusted or covered with suitable material to make it safe from slipping hazard;
- d) Wherever building workers are exposed to the hazard of falling into water, they shall be provided with rescuing arrangement from such hazard and if it is considered necessary, well equipped boat or launch manned with trained personnel shall be provided by the contractor at the site of such work;
- e) Every open side or opening into or through which a building worker, vehicle or lifting appliance or other equipments may fall at a building or other construction work shall be covered or guarded suitably to prevent such fall except where free access is necessary by reasons of their nature of the work;
- f) Wherever building workers are exposed to the hazards of falling from height while employed on such work they shall be provided by the employer with adequate equipment or means for saving them from such hazards, Such equipments or means shall be in accordance with the standards as laid down;
- g) Whenever there is a possibility of falling of any material, equipment or building worker at a construction site relating to a building or other construction work, adequate and suitable safety net shall be provided in accordance with the above stipulation;

2.0 SAFETY IN MATERIAL HANDLING AND WASTE DISPOSAL

2.1 GENERAL PROVISIONS:

- a) All building materials stored in tiers shall be stacked, racked, blocked, interlocked or otherwise secured safely to prevent sliding, falling or collapse and in an orderly manner to avoid obstruction of any passageway at the place of work. Piles of materials shall be stored or stacked in such a manner as to ensure their stability;
- b) Maximum safe load limits of floors within buildings and structures in kg/cm² shall be conspicuously posted in all storage areas, except for floor or slab on gradient. Maximum safe load shall not be exceeded. Material or equipment shall not be stored upon any floor or platform in such quantity as to exceed its safe carrying capacity;
- c) Ailes and passageways shall be kept clear to provide for the free and safe movement of material handling equipment or persons. Such areas shall be kept in good repair;
- d) When a difference in road or working levels exist, means such as ramps, blocking or grading shall be used to ensure the safe movement of vehicles between two levels;
- e) Material stored inside buildings under construction shall not be placed within 2 m of any hoist way or inside floor openings nor within 3.2 m of exterior wall which does not extend above the top of material stored;
- f) Persons employed required to work on stored material in silos, hoppers and similar storage areas shall be equipped with lifelines and safety belts;
- g) Non-compatible materials shall be segregated in storage;

- h) Bagged materials shall be stacked by stepping back the layers and cross-keeping the bags at least every 10 bags high;
- i) Materials shall not be stored on scaffolds or runways in excess of supplies needed for immediate operations;
- j) Bricks stacks shall not be more than 2.2 m in height. When a loose brick stack reaches a height of
- k) 1.3 m it shall be tapered back 5 cm in every foot of height above the 1.25 m level;
- l) When masonry blocks are stacked higher than 2 m, the stack shall be tapered back on half block per tier above the 2 m level;
- m) Material or equipment shall not be stored or placed so close to any edge of a floor or platform as to endanger the safety of persons below or working in the vicinity. Where stacking, unshackling, stowing or unstacking of construction material or article, or handling in connection therewith cannot be safely carried out unaided, reasonable measures to guard against accident or dangerous occurrences shall be taken by shoring or otherwise to prevent any danger likely to be caused by such handling;
- n) Stacking of material or article shall be made on firm foundation not liable to settle and such material or article and shall not overload the floor on which such stacking is made;
- o) The material or articles shall not be stacked against partition or walls of a warehouse or stores unless it is known that such partition or the wall is of sufficient strength to withstand the pressure of such materials or articles;

- p) The materials or articles shall not be stacked to such a height and in such a manner as would render the pile of such stack unstable and cause hazards to the building workers or the public in general;
- q) Where the building workers are on stack exceeding one point five meters in height, safe means of access to the stack shall be provided;
- r) All stacking or unshackling operations shall be performed under the supervision of a responsible person for such stacking or unstacking;
- s) The stacking of construction materials or articles shall not be made near the site of excavation, shaft, pit or any other such opening;
- t) Stacks that may lean heavily or become unstable or collapse are barricaded shall be avoided;
- u) Structural steel, poles, pipe, bar stock and other cylindrical materials, unless racked, shall be stacked and blocked so as to prevent sliding, spreading or tilting.

2.2 LUMBER:

- a) Used lumber shall have all nails withdrawn before stacking;
- b) Lumber shall be stacked on level and solidly supported sills;
- c) Lumber piles shall not exceed 6 m in height provided that lumber is handled manually, shall not be stacked more than 5 m height;
- d) Lumber shall be so stacked as to be stable and self-supporting.

2.3 STACKING OF CEMENT AND BAGS CONTAINING OTHER MATERIALS:

- a) The cement or other material in bags shall be stacked in a header and stature-wise in rows alternately in not more than 10 numbers and there will be circulation of space of at least 600 mm in between two such rows;
- b) While removing bags from the stack pile the stability of such stack pile shall be ensured;
- c) Bags containing cement or lime shall be stored on a firm ground;
- d) The materials like bricks, tiles or blocks shall also be stored on a firm ground;
- e) Reinforcing steel shall be stored according to its shape, size and length and stack of reinforcing steel kept as low as possible;
- f) No pipe shall be stored on rack or in stack where such pipe is likely to fall by rolling;
- g) The angle of repose shall be maintained where loose materials are stacked;
- h) When dust laden material is to be stored or handled, measures shall be taken to suppress the dust produced by such storing or handling and suitable personal protective equipment supplied to and used by the building workers working for such storing or handling.

2.4 DISPOSAL OF DEBRIS AND WASTE MATERIAL:

- a) It shall be ensured that debris is
- b) Handled and disposed of by a method, which does not cause danger to the safety of a person and not allowed to accumulate so as to constitute a hazard;

- c) Kept sufficiently moist to bring down the dust under control;
- d) Not thrown inside or outside from any height of such building or other construction work;
- e) Brought down by suitable means/chutes provided for the purpose and on completion of work, leftover building material, article or other substance or debris shall be disposed off as soon as possible to avoid any hazard to any traffic or person;
- f) Whenever materials are dropped more than 6 m to any point lying outside the exterior walls of the building an enclosed chute of wood, or equivalent material shall be used;
- g) When debris is dropped through holes in the floor without the use of chutes, the area where the material is dropped shall be completely enclosed with barricades not less than 1.1 m high and not less than 1.9 m back from the edge of the opening above. Signs warning of the hazard of falling material shall be posted at each level;
- h) All scrap lumber, waste material and rubbish shall be removed from the immediate work area as the work progresses;
- i) Disposal of waste material or debris as per the guideline issued by CPCB in compliance of Rule 10 sub-rule 1(a) of C & D Waste Management Rules, 2016).
- j) All bio-degradable material shall be disposed off in the pit for making compost. Pellets can also be made from bio-degradable material
- k) All solvent wastes, oil rags and flammable liquids shall be kept in fire resistant covered containers until removed from the work site.

2.5 **HANDLING GAS CYLINDERS:**

- a) Gas cylinders shall not be lifted on bare slings. For lifting the cylinders, cage of suitable size shall be used and all cylinders shall be horizontally positioned in it. Such cage shall have fencing in such a way that there is no possibility of fall of cylinders from this cage.

2.6 RIGGING EQUIPMENT FOR MATERIAL HANDLING:

- a) Rigging equipment for material handling shall be inspected prior to use in each shift as necessary during its use to ensure that it is safe. Defective rigging equipment shall be removed from service;
- b) Rigging equipment shall not be loaded in excess of its recommended safe working load, as prescribed in the Indian standards;
- c) Rigging equipment, when not in use, shall be removed from the immediate work area so as not to present a hazard to persons engaged in the area;
- d) Special custom designed grabs, hooks, clamps, or other lifting accessories, for such units as modular panels, prefabricated structures and similar materials, shall be marked to indicate the safe working loads shall be proof tested prior to use 125% of their rated load;
- e) Welded alloy steel chain slings shall have permanently affixed-durable identification standing size, grade, rated capacity and manufacturer.

2.7 FENCING OF MOTORS ETC

- a) All motors, cogwheels, chains and friction gearings, flywheels, shafting and the other dangerous and moving parts of machinery (whether or not driven by mechanical power) and steam pipes shall be securely fenced and the fencing of dangerous parts of machinery not removed while such machinery is in motion or in use;

- b) No part of any machinery which is in motion and which is not securely fenced, shall be examined, lubricated, adjusted or repaired except by a person skilled and trained for such examination, lubrication, adjustment or repairs and machine parts cleaned only when such machine is stopped;
- c) When a machine is stopped for servicing or repairs, adequate measures shall be taken to ensure that such machine does not restart inadvertently and not only tag-out sign is required; it is also essential that an active system of isolating the power be applied.

2.8 **PROTECTION AGAINST LIGHTNING**

- a) Where necessary, installations shall be protected against lightning, provided further that;
- b) No bare conductors or bare current-carrying parts of equipment be permitted to be installed unless adequate precautions are taken to prevent direct or indirect contact;
- c) Only flame-proof equipment and conductors shall be installed at places where explosives or inflammable substances are stored, handled or used or where explosive atmosphere exists;
- d) Persons competent and authorized only shall attend to electrical breakdowns and other operational faults and give or restore power to an equipment and such persons shall be easily identifiable by their dress or special helmet worn;
- e) It will constitute a standard practice to switch off portable tools while shifting from one place to another or while leaving them behind unattended;

- f) The contractor shall ensure that a system is in place to always keep tools well maintained.

2.9 **VEHICULAR TRAFFIC**

- a) Whenever any building or other construction work is being carried on, or is located in close proximity to a road or any other place where any vehicular traffic may cause danger to building workers, it shall be ensured that such building or other construction work is barricaded and suitable warning signs and lights displayed or erected to prevent such danger and if necessary, a request in writing made to the concerned authorities to control such traffic;
- b) All vehicles used at construction site shall comply with the requirements of the Motor Vehicles Act, 1988 (59 of 1988) and the Rules made hereunder;
- c) The driver of a vehicle of any class or description operating at a construction site shall hold a valid driving license under the Motor Vehicles Act. 1988 (59 of 1988).
- d) **USE OF SAFETY BELT OR OTHER FALL ARREST SYSTEMS:**
- e) Wherever any work at a height of 3 m or more is carried out, use of a suitable fall arrest system is mandatory if the workplace has already not been provided with an otherwise reliable means of protection for preventing the fall of persons from that height, provided further that:
- f) Safety belt, lanyard, life lines and devices for the attachment of such life lines shall conform to the approved standards;

- g) Every building worker shall be supplied with safety belt and safety life lines for his protection and such building worker shall use such belts and life lines during the performance of his work;
- h) All building workers using safety belt and safety life lines shall have the knowledge of safe use and maintenance of such belts and life lines and shall be supplied with necessary instructions for its use;
- i) The responsible person for supervising the use of safety belts and safety lifelines shall inspect and ensure that such safety belts and lifelines are fit for use before taking them into use.

2.10 SAFETY NET AND ITS USE

- a) Every safety net shall be of adequate strength, made of sound material and suitable for use and conform to the approved standards;
- b) The responsible person for maintenance of safety nets and their use shall ensure safe fixing of such safety nets and provide such safety nets with suitable and sufficient anchorage so that the purposes for which such safety net is intended for use is served;
- c) Use of multi-layer safety net to be ensured to avoid fall of material/objects.

2.11 STORAGE OF SAFETY BELTS AND NETS, ETC:

- a) Proper arrangement shall be made for the safe storage of safety belts, safety lifelines and safety nets when they are not in use and are protected against mechanical damage, damages from chemicals and damages from biological agents.

2.12 SAFETY HELMETS AND SAFETY FOOTWEAR

- a) The Engineer in-charge may declare whole or part of a site as the hardhat area and in such an eventuality it shall be the responsibility of the contractor to provide safety helmet of the approved quality to all personnel engaged in construction and erection work, including the visitors to the site;
- b) Accordingly, wherever safety footwear is required for the safety of the personnel, the contractor shall provide the same of the approved type free of charge.

3.0 WELDING AND GAS CUTTING OPERATIONS

A. GAS WELDING:

3.1 GENERAL PROVISIONS:

- a) All welders shall be provided with fire resistant protective clothing and equipment, such as fire resistant gauntlets and aprons, helmets and goggles with suitable filter lenses and its usage shall be ensured;
- b) The welders shall not be allowed to wear clothing that is not free from grease, oil and other flammable material;
- c) Adequate precautions shall be taken to protect persons working or passing near welding operations from dangerous sparks and radiation;
- d) When welding or cutting is being done on materials containing toxic or harmful substances or liable to produce toxic or harmful fumes, adequate precautions shall be taken to protect workers from the fumes, either by
 - e) Exhaust ventilation, or
 - f) Respiratory protective equipment;
- g) Arrangement shall be made so that welding sparks do not fall down on the persons working below or material, which are combustible in nature and may be damaged with such sparks.
- h) The oxygen pressure for welding shall always be high enough to prevent acetylene flowing back into the oxygen cylinder;
- i) Acetylene shall not be used for welding at a pressure exceeding 1 atmosphere gauge;

- j) Adequate precautions shall be taken to prevent:
- k) Fire being started by sparks,
- l) Slag or hot metal; and
- m) Damage to fibre ropes from heat, sparks, slag or hot metal;
- n) Precautions shall be taken to prevent flammable vapours and substances from entering the working area;

3.2 WELDING AT PLACES WITH FIRE RISKS:

- a) Unless adequate precautions are taken, no welding or cutting operations shall be allowed near the place where combustible materials are stored, or near materials or plant where explosive or flammable dusts, gases or vapours are likely to be present or given off. If hot work permit system exists at the site, the same shall be followed;
- b) Combustible materials and structures that cannot be removed from the vicinity of welding operations shall be shielded by asbestos or protected by other suitable means.

3.3 WELDING IN CONFINED SPACE:

- a) When welding or cutting operations are being carried out in a confined space;
- b) Adequate ventilation, by means of exhaust fans or forced draught as the condition may require, shall be constantly provided; otherwise enough quantity of air shall be blown in by means of compressors to dilute the pollutants;
- c) No blow pipe shall be left unattended inside a tank or vessel or other confined space during meal break or other interruption of the work;

- d) The worker shall take all necessary precautions to prevent unburned combustible gas or oxygen from escaping inside a tank or vessel or other confined space; and
- e) When necessary to prevent danger, an attendant shall watch the welders from outside.

3.4 WELDING ON CONTAINERS FOR EXPLOSIVE OR FLAMMABLE SUBSTANCES:

- a) Welding or cutting operations on containers in which they are explosives or flammable substances shall not be allowed;
- b) Welding or cutting operations on any container that has held explosive or where flammable gases may have been generated, shall only be undertaken,
- c) After the container has been thoroughly cleansed by steam or other effective means; and
- d) Found by air tests to be completely free from combustible gases and vapours; or
- e) After the combustible gas in the container has been completely replaced by an inert gas or by water;
- f) If an inert gas is used as laid down in clause 4.2.3, after the vessel has been filled with gas, the gas shall continue to flow slowly into it thorough out the welding or cutting operations;
- g) Before starting any welding operations on, or otherwise applying heat to, closed or jacketed containers or other hollow parts, such containers or parts shall be adequately vented in suitable manner.

3.5 GAS CYLINDERS

- a) Gas cylinders shall be inspected, stored, handled and transported in conformity with the requirements of Gas Cylinders Rules, 1981;
- b) When in use, cylinders shall be held in upright positions by straps, collars or chains;
- c) Devices referred to in clause 6.2 shall be such that the cylinders can be rapidly removed in an emergency;
- d) Welders shall not temper with or attempt to repair safety devices and valves on gas cylinders;
- e) When acetylene cylinders are coupled, flash back arrestor shall be inserted between the cylinder and the coupler block, or between the coupler block and the regulator;
- f) Only acetylene cylinders or approximately equal pressure shall be coupled;
- g) No gas shall be taken from a cylinder unless a pressure reducing regulator has been attached to the valve;
- h) Only the right pressure reducing regulator shall be used for the gas in the cylinder;
- i) Cylinder valves shall be kept free from gases, grease, oil, dusts and dirt;
- j) Leaky cylinders charged with acetylene or liquefied fuel gas shall be taken into the open air at a safe distance from any open flame or sparks.

3.6 HOSE

- a) Only hose especially designed for welding and cutting operations shall be used to connect an oxy- acetylene torch to gas outlet;
- b) Hose lines for oxygen and for oxy-acetylene shall be of different colours and preferably of different size;
- c) Hose connections shall be sufficiently light to withstand without leakage a pressure twice the maximum delivery pressure of the pressure regulators in the system;
- d) Care shall be taken that hose does not become kinked or tangled, stepped on or run-over or otherwise damaged;
- e) Any length of hose in which a flashback has burned, shall be discarded;
- f) No hose with more than one gas passage shall be used;
- g) Only soapy water shall be used for testing hose for leaks.

3.7 TROCHES

- a) When torches are being changed, the gases shall be shut off at the pressure reducing regulators and not by crimping hose;
- b) Torches shall be lit with friction lighters or other safe source but not with matches.
- c) Electric welding equipment:
- d) Welding machines shall be controlled by a switch mounted on or near the machine framework that, when opened, immediately cuts off the power from all conductors supplying the machine;
- e) Welding circuit shall be so designed as to prevent the transmission of high potential from the source of supply to the welding electrodes;

- f) The maximum open circuit voltage shall be in accordance with Indian Standards;
- g) Electrode conductors or cables shall not be excessive in length and shall not be longer than necessary to perform the work;
- h) Return conductors shall be taken directly to work and securely connected mechanically and electrically to it or to the work bench, floor etc. and to an adjacent metallic object;
- i) Cable shall be supported so as not to create dangerous obstruction;
- j) Motors, generators, rectifiers and transformers in arc welding or cutting machines, and all current carrying parts, shall be protected against accidental contact with uninsulated live parts;
- k) Ventilating slots in transformer enclosures shall be so designed that no live part is accessible through any slot;
- l) Frames of arc welding machines shall be effectively earthed;
- m) In hand-operated arc welding machines, cables and cable connectors used in arc welding circuits shall be effectively insulated on the supply side;
- n) The outer surface electrode holders of hand-operated arc welding machines, including the jaw so far as practicable, shall be effectively insulated;
- o) Electrode holders of hand-operated arc-welding machines shall, if practicable, be provided with discs or shields to protect the operator's hands from the heat of the arcs;
- p) Only heavy-duty cable with unbroken insulation shall be used;

- q) Circuit connections shall be waterproof;
- r) When lengths of cable have to be joined, only insulated connectors shall be used on the earth line and the electrode holder line;
- s) Connections to welding terminals shall be made at distribution boxes, socket outlets, etc. by bolted joints;
- t) Welding terminals shall be adequately protected against accidental contact by enclosures, covers or other effective means;
- u) Electrode holder shall
- v) Have adequate current capacity;
- w) Be adequately insulated to prevent shock, short-circuiting or flashovers.

3.8 OPERATIONS

- a) Arc welding and cutting operations that are carried on at places where persons other than the welders are working or passing shall be enclosed by means of suitable stationary or mobile screens;
- b) Walls and screens of both permanent and temporary protective enclosures shall be provided to absorb harmful rays from the welding equipment and prevent reflection, and if necessary, be painted or otherwise treated for the purpose;
- c) When arc welding is done in damp confined spaces;
- d) Electrode holders shall be completely insulated; and
- e) The welding machines shall be outside the confined space;
- f) Welders shall take adequate precautions

- g) To prevent any part of their body from completing an electric circuit
- h) To prevent contact between any part of the body and the exposed part of the electrode, or electrode when in contact with metal; and
- i) To prevent wet or damaged clothing, gloves and boots from touching any live part;
- j) Welding circuits shall be switched off when not in use;
- k) Electrodes shall only be inserted in the holder with insulating means such as insulating gloves;
- l) Electrode and return leads shall be adequately protected against damage;
- m) Live parts of electrode holders shall be inaccessible when they are not in use;
- n) Electric arc-welding equipment shall not be left unattended with current switched on.

4.0 SAFETY IN THE USE OF ELECTRICITY

4.1 GENERAL PROVISIONS

- a) Before commencement of any building or other construction work, adequate measures shall be taken to prevent any worker from coming into physical contact with any electrical equipment or apparatus, machines or live electrical circuit which may cause electrical hazard during the course of his employment and suitable warning signs shall be displayed and maintained at conspicuous places in Hindi and in local language understood by the majority of the building workers;
- b) In workplaces where the exact location of underground electric power line is not known, the building workers using jack hammers, crow bars or other hand tools which may come in contact with a live electrical line shall be provided with approved insulated protective gloves and footwear;
- c) As far as practicable, no wiring or cable, which may come in contact with water or which may be mechanically damaged or which may result in electric shock shall be left on ground or;
- d) All electrical appliances and current carrying equipment used shall be made of sound material and adequately earthed;
- e) All temporary electrical installations shall be provided with earth leakage circuit breakers;
- f) It is required that all portable power-driven hand tools are provided with double insulation to secure a high degree of protection from electrical hazards;

- g) Electrical installations shall comply with the requirements of any law for the time being in force, especially the Indian Electricity Act/Rules in particular with specific reference to the following:
- All parts of installations shall be of standard construction not lower, from the safety point of view, than the national standards, as applicable. All parts of electrical installations shall be so constructed, installed and maintained so as to prevent electrical fires, explosion and shock;
 - Earthing of metal work of electrical equipment, other than the parts which carry current, shall be provided and will conform to Electricity Act and IS: 3042 – 1966 (code of practice for earthing);
- h) All parts of electrical installation shall be adequate size and characteristics for the work they may be called upon to do and in particular they shall:
- Be of adequate mechanical strength to withstand working conditions in construction operations; and
 - Be not liable to damage by water, dust or electrical, thermal or chemical action to which they are subjected to in construction operations;
- i) All parts of electrical installations shall be so constructed, installed and maintained as to prevent the danger of electric shock; fire and external explosion;
- j) It shall be made impossible for circuit breakers to be opened or closed inadvertently, by gravity or by mechanical impact;

- k) Before operation of OCBs, oil level must be checked and the event of short, extra quantity must be filled;
- l) Use of rubber gloves and rubber gum boots of tested quality where electric shock is likely to occur shall be provided, but these shall not be considered as providing adequate protection against the risk of electric shock in lieu of inbuilt safety arrangement in the system;
- m) First-aid boxes, instruction for restoration of persons affected by electric shock shall be made;
- n) Arrangement shall be made for sufficient number of CO₂/chemical powder type fire extinguishers/sand buckets etc.;
- o) No electrical circuits shall ever be overloaded to the dangerous extent or beyond the rated capacity;
- p) In confined areas, only 24 volt supply shall be used for every equipment, including hand-held portable tools and hand lamps;
- q) All electrical appliances and outlets shall be clearly marked to indicate their purpose and voltage.

4.2 FUSES

- a) Fuses shall bear markings indicating their rated current, whether they are of the fast or slow- breaking type and, as far as practicable, and their rated breaking capacity. Fuses as per need and of correct rating shall be used in the circuit;
- b) Effective measures shall be taken to ensure that persons removing or inserting fuses will not be endangered, in particular by any adjacent live parts;

- c) In case of blow of fuses only after finding out and correcting of the fault, new fuses shall be provided in the circuit.

4.3 SWITCHES

- a) All switches shall be of enclosed type and so installed and earthed as to prevent danger in their operation;
- b) Use of switches, which may connect or disconnect circuit through gravity, shall not be used.

4.4 MOTORS

- a) All motors shall be equipped with a switch;
- b) When a motor can be cut off from more than one place, where practicable, a stopping device shall be installed in the immediate vicinity of the motor;
- c) Motors shall be so installed as to ensure that they can be adequately cooled;
- d) Motors shall be effectively protected against over current;
- e) Whenever the motors installed are in the open area where there is the possibility of fall of liquid corrosives or otherwise, it shall be suitably protected with covering;
- f) Earthing shall be connected to all motors, generators etc. as prescribed in the Indian Electricity Rules, amended from time to time.

4.5 CONNECTIONS

- a) At points where conductors are joined, branched or led into apparatus, they shall be: Mechanically protected, and Properly maintained;

- b) Conductors shall be joined, branched or led into an apparatus through junction boxes, bushings, glands or equivalent connecting devices;
- c) Junction boxes or plug-out-socket couplings shall be used for joining cables wherever practicable;
- d) When parts of conductors are joined together, or conductors are joined to one another or to an apparatus, the attachment shall be made by screwing, clamping, soldering, riveting, brazing, crimping, or equivalent means. Loose connections shall not be provided in any case;
- e) Cable joints, junction boxes and connectors shall be protected as far as practicable, against traffic, fall of ground, water and other sources of damage;
- f) Whenever armoured cables are joined, the junction boxes shall be bridged by a suitably conductive bond between the armouring of the cables.

4.6 TRANSPORTABLE AND PORTABLE ELECTRICAL EQUIPMENT:

- a) The supply of electricity to portable apparatus shall not exceed 250v;
- b) Hand-held and portable machines shall be equipped with a built-in switch to switch off power in case of emergency;
- c) Hand-held electrically operated tools shall be provided with built-in switch to disconnect the circuit when the tool is not being used;
- d) Portable electrical tools, unless flameproof, shall not be used in flammable or explosive atmosphere;

- e) Only three-core cable shall be used for single-phase operated tools with the third core connected to earth

4.7 **HAND LAMPS**

- a) Hand lamps shall be equipped with strong cover of glass or other transparent material;
- b) Portable lamp holders shall have:
 - All current –carrying parts enclosed;
 - Insulated handle; and
 - They shall operate at 24 v;

4.8 **INSPECTION, MAINTENANCE**

- a) All electrical equipment shall be inspected before it is taken into use to ensure that it is suitable for its purpose of use;
- b) At the beginning of every shift every person using electrical equipment shall make a careful external examination of the equipment and conductors for which he is responsible, especially flexible cables;
- c) Periodic inspections, testing, maintenance of all electrical equipment is to be made and record of test of transformer oil and pit earthing shall be maintained;
- d) Electrical conductors and equipment shall be repaired by the electrician only as far as practicable, no work shall be done live conductors or equipment;
- e) Before any work is begun on conductors or equipment that does not have to remain live;

- f) The current shall be switched off;
- g) Adequate precautions shall be taken to prevent the current from being switched on again;
- h) The conductors or the equipment shall be tested to ascertain that they are dead;
- i) The conductor and equipment shall be earthed and short-circuited; and
- j) Neighbouring live parts shall be adequately protected against accidental contact;
- k) After work on conductors and equipment, the current shall only be switched on again on the orders of a competent person;
- l) Electricians shall be provided with adequate tools, and person protective equipment, such as rubber gloves, mats etc.;
- m) All conductors and equipment shall be considered to live unless there is certain proof to the contrary.

4.9 WORK IN THE VICINITY OF ELECTRICAL INSTALLATION

- a) When work is to be done in the neighborhood of electrical conductors or installations, the contractor shall ascertain the voltage carried and the works shall not be allowed to reach to unsafe distance from them;
- b) When any excavation is to be made or any bore-holed sunk, the contractor shall ascertain whether there are any underground conductors, in or in dangerous proximity to, the zone of operations;
- c) No work shall be done in dangerous proximity to a conductor or an installation until it has been made dead;

- d) Before work begins, work permit shall be obtained from the Engineer in-charge if live electricity lines/circuit are passing in close vicinity;
- e) Before the current is restored, the contractor shall ensure that no work remain on the work site;
- f) If conductor or an installation in the neighbourhood of which work is io be done can not be made dead, special precautions shall be taken and special instructions given to the workers so as to prevent danger by adequately enclosing or fencing;
- g) If mobile equipment has to be employed in the neighbourhood of conductors or installations that cannot be made dead, its movement shall be so controlled as to keep it as a safe distance from them.

5.0 SAFETY IN THE USE OF HAND TOOLS AND POWER-OPERATED TOOLS

5.1 GENERAL PROVISIONS

- a) All hand and power tools and similar equipment, shall be maintained in safe condition.
- b) When power operated tools are designed to accommodate guards, they shall be equipped with such guards, when in use;
- c) Belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains and other reciprocating, rotating or moving parts of the equipment shall be similarly guarded;
- d) Personnel using hand and power tools and exposed to the hazard of falling, flying, abrasive, and splashing objects, or exposed to harmful dusts, fumes, mists, vapours, or gases shall be provided with the particular personal protective equipment necessary to protect them from the hazards;
- e) All hand-held powered platen sanders, grinders, grinders with wheels of 5 cm or less, routers, planers, laminate trimmers, nibblers, shears, scroll saws and jigsaws with blade shanks of 0.5 cm wide or less shall be equipped with only a positive on-off control.
- f) All hand-held powered drills, tappers, fastener drivers, horizontal, vertical or angle grinders with wheels greater than 5 cm in diameter, disc sanders, belt sanders, reciprocating saws, saber saws and other operating powered tools shall be equipped with a momentary contact on control provided that turnoff can be accomplished by a single motion of the same finger or fingers that turn it on.

5.2 HAND TOOLS

- a) The contractor shall not issue or permit the use of unsafe hand tools;
- b) Wrenches including adjustable pipe end and socket wrenches shall not be used when saws are sprung to the point that slippage occurs;
- c) Impact tools such as drift pins, wedges and chisels shall be kept free of mushroomed heads;
- d) The wooden handles of tools shall be kept free of splinters or cracks and shall be kept tight on the tools.

5.3 POWER OPERATED TOOLS

- a) Electric power operated tools shall be either of the approved double-insulated type or shall be grounded;
- b) The use of electric cords for hoisting or lowering loads shall not be permitted;
- c) Pneumatic power tools shall be secured to the hose or whip by some positive means to prevent the tool from becoming accidentally disconnected;
- d) Safety clips or retainers shall be securely installed or maintained on pneumatic impact (percussion) tools to prevent attachments from being accidentally expelled;
- e) All pneumatically riveting machine staplers and other similar equipment provided with automatic fastener feed, which operate at more than 7 kg/cm² pressure at the tool a safety device on the muzzle to prevent the tool from ejecting the fasteners unless the muzzle is in contact with the work surface;

- f) Compressed air shall not be used for cleaning purposes except when the pressure is reduced to less than 2 kg/cm² and that too with effective chip guarding. The 2 kg/cm² pressure requirement does not apply to concrete form, mill scale and similar cleaning purposes;
- g) The manufacturer's safe operating for hoses, pipes, valves, filters and other fittings shall not be exceeded;
- h) Only personnel who has been trained in the operation of the particular tool shall be allowed to operate power-actuated tools;
- i) The tool shall be tested each day before loading to see that the safety devices are in proper working condition. The method of testing shall be accordance with the manufacturer's recommended procedure;
- j) Any tool found not in proper working order, or that which develops a defect during use, shall be immediately removed from service and not used until properly repaired;
- k) Tools shall not be loaded until just prior to the intended firing time. Neither loaded nor empty tools are to be pointed at any other person. Hands shall be kept clear of the open barrel end;
- l) Loaded tools shall not be left unattended;
- m) Fasteners shall not be driven into very hard or brittle materials including, but not limited to, cast iron, glazed tiles, surface hardened steel, glass block, live rock, face brick or hollow tiles;
- n) Driving into materials that can be easily penetrated shall be avoided unless backed by a substance that will prevent the pin or fastener from passing completely through and creating a flying missile hazard on the other side;

- o) No fastener shall be driven into a palled area caused by an unsatisfactory fastening;
- p) Only non-sparking tools shall be used in an explosive or flammable atmosphere;
- q) All tools shall be used with the correct shield, guard or attachment as recommended by thee manufacturer.

5.4 **ABRASIVE WHEELS AND TOOLS**

- a) All grinding machines shall be supplied with sufficient power to maintain the spindle speed at safe levels under all conditions of normal operation;
- b) Grinding machines shall be equipped with suitable safety guards;
- c) The maximum angular exposure of the grinding wheel periphery and sides shall not be more than 900, except that when the work requires contact with the wheel below the horizontal plane of the spindle, the angular exposure shall not exceed 1200. In either case, the exposure shall begin not more than 650 above the horizontal plane of the spindle. Safety guards shall be strong enough to withstand the bursting of the wheel;
- d) Floor and bench-mounted grinders shall be work-rests, which shall be rigidly supported and readily adjustable. Such work-rests shall be kept at a distance not to exceed 5 mm from the surface of the wheel;
- e) Cup type wheels used for external grinding shall be protected by either revolving cup guard or a band type guard;
- f) When safety guards are required, they shall be mounted as to maintain proper alignment with the wheel and the guard and the guard and its

fastening shall be adequate strength to retain the fragments of the wheel in case of accidental breakage. The maximum angular exposure of the grinding wheel periphery and sides shall not exceed 1800;

- g) Portable abrasive wheel used for internal grinding shall be provided with suitable safety flanges;
- h) When safety flanges are required, they shall be used only with wheels designed to fit the flanges. Only safety flanges, of a type and design and properly assembled so as to ensure that the pieces of the wheel will be retained in case of accidental breakage, shall be used;
- i) All abrasive wheels shall be closely inspected and ring tested before mounting to ensure that they are free from cracks or defects;
- j) Grinding wheels shall fit freely on the spindle and shall not be forced on. The spindle nut shall be tightened only enough to hold the wheel in place;
- k) All employees using abrasive wheels shall be protected by suitable eye protection equipment.

5.5 WOODWORKING TOOLS

- a) All fixed power driven woodworking tools shall be provided with a disconnect switch that can either be locked or tagged in the off-position;
- b) The operating speed shall be attached or otherwise permanently marked on all circular saws over 0.5 m in diameter or operating at over 3000 peripheral rpm. Any saw so marked shall not be operated at a speed other than that marked on the blade. When a marked saw is

retensioned for a different speed, the marking shall be corrected to show the new speed;

- c) Automatic feeding devices shall be installed on machines wherever the nature of the work will permit. Feeder attachments shall have the feed rolls or other moving parts covered or guarded so as to protect the operator from hazardous points;
- d) All portable power driven circular saws shall be equipped with guards above and below the base plate or shoe. The upper guard shall cover the saw to the depth of the teeth, except for the minimum arc required to permit the base to be tilted for bevel cuts. The lower guard shall cover the saw to the depth of the teeth, except for the minimum arc required to allow proper retraction and contact with the work. When the tool is withdrawn from the work, the lower guard shall automatically and instantly return to the covering position.

6.0 SAFETY IN THE USE OF LADDERS AND STAIRS

6.1 GENERAL ASPECTS OF SAFETY RELATED TO USE OF LADDERS

- a) Every ladder or step-ladder used in building or other construction work shall be of good construction, made of sound material and of adequate strength for the purpose for which such ladder or step-ladder is used;
- b) When a ladder is used as a means of communication, such ladder shall be lashed to a fixed structure so that while working on such ladder it does not slip;
- c) A ladder or step ladder shall not stand on loose bricks or other loose packing and have a level and firm footing;
- d) No ladder shall be used which has a missing or defective rungs or rungs, which depend for support solely on nails, spikes or other similar fixing.

6.2 MATERIALS FOR LADDERS

- a) Shall be constructed with upright of adequate strength and are made of straight-grained wood, free from defects and having the grain of such wood running length wise;
- b) Shall have rungs made of straight-grained wood free for defects and mortised or securely notched into the upright, reinforcing metal ties, if wedges shall not secure the tenors of such ladders;
- c) Where it is required, in case of use of fixed ladders, sufficient foot-hold and hand-hold shall be provided for use by the building worker;

- d) Every ladder shall be -
- Secured so as to prevent undue swaying;
 - Equally and properly supported on each of its upright;
 - So used as not to cause undue sagging; and
 - Placed as nearly as possible at an inclination of four in one;
- e) The use of all ladders and stepladders shall conform to the approved standards;
- f) Wooden ladders shall be constructed with uprights of adequate strength as well as rungs made of wood free from visible defects and having the grains of the wood in the ladders running lengthwise and rungs mortised or rebuted into the uprights;
- g) Uprights and rungs of metal ladders shall have a cross-section adequate to prevent dangerous deflection, shall be equal and not less than 25 cm or more than 35 cm;
- h) Rungs of metal ladders shall be kept clean so as to prevent them from becoming slippery;
- i) Portable ladders shall not exceed 9 m in length;
- j) Every ladder or run of ladders rising to a height exceeding 9 m shall be provided with an intermediate landing, providing further that the intervals between landings shall not exceed 9 m. The landings shall be of suitable size and protected by railings;
- k) Defective ladders that cannot be satisfactorily repaired shall be tagged Not Fit For Use and destroyed;

- l) Wooden ladders shall not be painted, but oiled or covered with clean varnish or other transparent preservatives;
- m) Metal ladders shall be protected against corrosion by being coated with rust-proof paint or by other means unless they are made of non-corrosive metals;
- n) Every ladder shall rise at least 1 m above the highest point to be reached and have one of the uprights continued to that height to serve as a hand-rail at the top;
- o) Ladders shall not stand on loose bricks or other loose packing but have a level and firm footing so that they are equally supported on each upright;
- p) Every ladder shall be securely fixed so that it cannot move from its top and bottom points of rest and if it cannot be secured at the top, it shall be securely fastened at the base and if fastening at the top is also impracticable, it shall have a man stationed at the foot holding the end to prevent it from slipping;
- q) Where a run of two or more ladders connects different floors, the ladders shall be staggered and a protective landing with the smallest practicable opening shall be provided at each floor;
- r) A ladder having only one upright or a missing or dangerously defective rung shall not be used;
- s) When a ladder is placed in position, the distance between the foot of a ladder and the base of the structure against which it rests shall be about one-quarter of its length;

- t) Workers using ladders shall leave at least one hand free for climbing up and down, face the ladder, avoid wearing slippery footwear and avoid carrying heavy or bulky loads;
- u) A ladder shall not be placed in front of a door that opens towards it unless the door is fastened or locked or guarded;
- v) A ladder shall not be placed against a window frame unless the ladder is fitted with a board at the top so that the applied load is safely distributed over the frame;
- w) Metal ladders shall not be used in the vicinity of live electrical equipment;
- x) Adequate means shall be provided to prevent displacement of the ladder set up in public thoroughfare or where persons, vehicles etc. may accidentally collide with it.

6.3 PORTABLE STEPLADDERS

- a) The length of portable stepladders shall not exceed 6 m and their back legs shall be adequately braced;
- b) Stepladders exceeding 1.5 m in length shall have two or more cross-ties;
- c) The spread between the front and back legs shall be restricted by means of hinged metal flat bars or high-grade fibre or other effective means;
- d) When in the open position, treads of stepladders shall be horizontal.

6.4 PORTABLE TRESTLE LADDERS

- a) The height of the trestle ladders shall not exceed 5.5 m;

- b) The spread between the front and back legs shall be restricted by means of hinged metal flat bars or high-grade fibre or other effective means;
- c) The front and back legs shall be joined at the top by bolted steel hinges of adequate dimensions or other effective means;
- d) Both legs of trestle ladders shall be equipped with sufficient number of steel crossties.

6.5 EXTENSION LADDERS

- a) The length of extension ladders shall not exceed 15 m;
- b) Extension ladders shall be equipped with an effective lock and guide brackets by which the ladder can be extended, retracted or locked in any position;
- c) The rungs of overlapping sections shall coincide so as to form double treads and shall be equipped with one or more extension ropes;
- d) Extension ropes shall be securely anchored and run over suitable pulleys.

6.6 MECHANICAL LADDERS

- a) Mechanical ladder is that ladder, which is a mechanically extendable ladder, mounted on a wheeled frame;
- b) Mechanical ladder shall be equipped with guard-rails and toe-boards and a cage of heavy-gauge steel mesh;
- c) If mechanical ladder has no railed platform or cage, workers using it shall be secured by suitable safety belt;

- d) Mechanical ladders shall not be moved, while a person is on them, unless they have specially designed to ensure that perfect stability is maintained during movement.

6.7 **FIXED LADDERS**

- a) Uprights of fixed ladders shall be at least 40 cm and shall be set an angle of 150 to the vertical;
- b) Clearance at the back of the rungs shall be at least 15 cm and no obstruction within 75 cm of the face of the ladder;
- c) There shall be at least 7.5 cm clearance between the ladder and the nearest fixed object;
- d) When it is necessary for a ladder to pass closely through a hole in a platform or a floor, the edges of the hole shall be padded so as to prevent injury to the users;
- e) The length of the runs of fixed ladder shall not exceed 9 m;
- f) Landing platform shall be provided for each 9 m or fraction thereof;
- g) As far as practicable, runs shall be staggered;
- h) Runs from which a person could fall from more than 6 m shall be enclosed in a cage of heavy-gauge mesh or hoops;
- i) Fixed ladders shall be firmly bolted or welded in position.

6.8 **STAIRS**

- a) Stairs shall be of adequate strength to withstand safely the loads that they will have to carry;

- b) Stairs used for the purpose of construction work shall have a clear width of at least 60 cm;
- c) Stairs made of perforated material shall not have openings exceeding 1.2 cm in width;
- d) No step of a stairway shall depend for its support solely on nails, spikes, screws or other similar fixing;
- e) No stairway with missing or dangerously defective steps shall be used;
- f) Every stairway that is at an angle of less than 30° from the vertical shall be provided with a secure handhold at the top landing place, either by extending one upright for at least 1 m or by other effective means;
- g) Movable and removable stairs shall be adequately secured in the position of use;
- h) In all building structures permanent stairs shall be constructed as soon as practicable;
- i) When work on a building has progressed to a height of more than 18 m above the ground and it has not been practical to construct the permanent stairs, sufficient number of stairs shall be provided to ensure safe access to the working levels.

7.0 SAFETY IN THE USE OF LIFTING APPLIANCES & GEARS

7.1 **CONSTRUCTION AND MAINTENANCE OF LIFTING APPLIANCES:**

- a) All lifting appliances, including their parts and working gear, whether fixed or movable, and any plant or gear used in anchoring or fixing of such appliances -
- b) Shall be of sound construction, sound material, and of adequate strength to serve the purpose for which these are to be used and all such appliances shall be free from patent defects, and
- c) Maintained in good repair and working condition;
- d) Every drum or pulley around which the rope of any lifting appliance is carried, shall be of adequate diameter and sound construction in relation to such rope;
- e) Any rope that terminates at the winding drum of lifting appliance shall be securely attached to such drum and at least three dead turns of such rope remain on such drum in every operating position of such lifting appliance;
- f) The flange of a drum projects twice the rope diameter beyond the last layer of such rope and if such rope and if such projection is not available, other measures like anti-slackness guards shall be provided to prevent such rope from coming off such drum;
- g) Every lifting appliance shall be provided with adequate and efficient brakes which shall be:
- h) Capable of preventing fall of suspended load (including any test load),

- i) Effectively controlling such load while it is being lowered, acting without shock and shall be attached with shoes that can be easily removed for running and which shall be simple and have easily accessible means of adjustment;
- j) Provided that nothing contained above shall apply to steam-winch that can be operated as safely as with brakes.

7.2 CONTROLS OF EVERY LIFTING APPLIANCE SHALL BE SO;

- a) Situated that the driver of such appliance at his stand or seat has ample room for operating and has an unrestricted view of building or other construction work, as far as practicable, and that he remains clear of the load and the ropes, and that no load passes over him;
- b) Positioned with due regard to ergonomic considerations for proper operation of such appliance;
- c) Located that the driver of such appliance remains above the appliance and shall have upon them or adjacent to them clear markings to indicate their purpose and mode of operations;
- d) Provided, where necessary, with a suitable locking device to prevent accidental movement or displacement and shall move, as far as practicable, in the direction of the resultant load movement;
- e) Wherever automatic brakes are provided, they shall automatically come to the neutral position in case of power failure.

7.3 TEST AND PERIODICAL EXAMINATION

- a) Test: all lifting appliances including all parts and gears thereof, whether fixed or movable, shall be tested and examined by a competent person before being taken into use for the first time or after it has undergone any alteration or repairs liable to affect its strength or stability or after erection on a site and also once at least in every five years, in the manner as specified;
- b) Examination: all lifting appliances shall be thoroughly examined by a competent person at least in every twelve months and where the competent person making such examination forms the opinion that the lifting appliance cannot continue to function safely, he shall forthwith give notice in writing of his opinion to the contractor.

7.4 **AUTOMATIC LOAD INDICATOR**

- a) Cut-out shall be provided which automatically arrests the movement of the lifting parts of every crane if the load exceeds the safe working load, wherever possible;
- b) Wherever the above provisions cannot be applied and if it is not possible to install an automatic safe load indicator, in that case, provision of a table showing the safe working loads at the corresponding inclinations or radii of the jib on the crane shall be considered sufficient.

7.5 **INSTALLATION:**

- a) Fixed lifting appliances shall be installed by a competent person in a manner that
- b) Such appliances cannot be displaced by the load, vibration or other influences;

- c) The operator of such appliance is not exposed to danger from loads, ropes or drums;
- d) The operator can either see over the zone of operation or communicate with all loading and unloading points by signal, or other communication system;
- e) Adequate clearance is provided between parts or loads of lifting appliances and between the fixed objects such as walls and posts, or electrical conductors;
- f) The lifting appliances; when exposed to wind loading, are given sufficient additional strength, stability and rigidity to withstand such loading safely;
- g) No structural alterations or repairs are made on any part of the lifting appliances that affect the safety of such appliances without obtaining the opinion of the competent person to this effect.

7.6 **WINCHES**

- a) Winches shall not be used if their control levers operate with excessive friction or play;
- b) Double gear winches shall not be used unless a positive means of locking the gearshift is provided;
- c) There shall be no load other than the fall and the hook assembly on the winch while changing gears on a two-gear winch;
- d) Adequate protection shall be provided to the winch operator against abnormal weather;

- e) Temporary seats or shelters for winch operators that may pose hazard to the winch operator or any other building workers shall not be allowed to be used;
- f) Control levers shall be secured in the neutral position and, whenever possible, the power shall shut off if the winch is left unattended.

7.7 IN USE OF EVERY STEAM-WINCH

- a) Measures shall be taken to prevent escaping steam from obscuring any part of the construction site or other workplace or from otherwise hindering or injuring any building worker;
- b) Extension control levers which tend to fall off their own weight shall be counter-balanced;
- c) Winch operators shall not be permitted to use the which control extension levers except for short handles on wheel type controls and that such levers shall be of adequate strength, secure and fastened with metal connections at the fulcrum and at the permanent control lever;
- d) In use of every electric winch, no building worker shall be permitted to transfer, alter or adjust electric control circuits in case of any defect in such winch;

7.8 ELECTRIC WINCHES SHALL NOT BE USED FOR BUILDING WORK WHERE

- a) The electromagnetic brake is unable to hold the load; or
- b) One or more control points either hoisting or lowering are not operating properly.

7.9 BUCKETS:

- a) It shall be ensured that tip-up buckets are equipped with a device that effectively prevents accidental tipping.

7.10 IDENTIFICATION AND MARKING OF SAFE WORKING LOAD:

- a) Every lifting appliance and loose gear shall be clearly marked for its safe working load and identification by stamping or other suitable means;
- b) Every derrick (other than derrick crane) shall be clearly marked for its safe working load when such derrick is used either in single purchase with lower block or in union purchases in all possible block positions;
- c) The lowest angle to the horizontal, to which the derrick may be used, shall be legibly marked;
- d) Every lifting appliance having more than one working load shall be fitted with effective means to enable the operator to determine safe working load at each point under all conditions of use;
- e) Means to ascertain the safe working load for lifting gears under such conditions in which such gears may be used shall be provided to enable a worker using such gears and such means safely, which shall comprise:
 - f) Marking of the safe working load in plain figures or letters upon the sling or upon a tablet or ring of durable material attached securely thereto in case of chain slings; and
 - g) The means specified or notices so exhibited as can be easily read by any concerned building worker stating the safe working load for the various sizes of the wire rope slings used.

7.11 LOADING OF LIFTING APPLIANCES AND LIFTING GEARS

- a) No lifting appliance, lifting gear or wire rope shall be used in an unsafe way and in such a manner as to involve risk to life of building workers and they are not loaded beyond their safe working load except for testing purposes under the direction of a competent person in the manner as specified in schedule;
- b) No lifting appliance and lifting gear, or any other material-handling appliance shall be used if the Inspector having jurisdiction under the Building and Other construction (regulation of employment and conditions of service) Act/Rules is not satisfied with reference to a certificate of test or examination or to an authenticated record maintained as provided under the Rules or if in his view the lifting appliance, lifting gear or any other material handling appliance is not safe for use in building or other construction work;
- c) No pulley block shall be used unless the safe working load and its identification are clearly marked on such block.

7.12 OPERATOR'S CAB OR CABIN SHALL

- a) Be made of fire resistant material;
- b) Have a suitable seat, a foot rest and protection from vibration;
- c) Afford the operator an adequate view of the area of operation;
- d) Afford the necessary access to working parts in the cab;
- e) Afford the operator adequate protection against the weather;
- f) Be adequately ventilated; and
- g) Be provided with a suitable fire extinguisher.

7.13 OPERATION OF LIFTING APPLIANCES:

- a) Operator of every crane or lifting appliance shall possess adequate skill and training in the operation of the particular lifting appliances, provided further that
- b) No person under eighteen years of age shall be in control of any lifting machine, scaffold winch, or give signals to the operator;
- c) Precaution shall be taken by the trained operator to prevent lifting appliance from being set in motion inadvertently;
- d) The operation of lifting appliances shall be governed by signals in conformity with the approved standards;
- e) The operator's attention shall not be distracted while he is working;
- f) No crane, hoist, winch or other lifting appliance or any part of such crane, hoist, winch or other lifting appliance shall, except for testing purposes, be loaded beyond the safe working load;
- g) During the hoisting operation, effective precaution shall be taken to prevent any person from standing or passing under the load in such operation;
- h) Operator shall not leave lifting appliance unattended while power is on or the load is suspended to such appliance;
- i) No person shall ride on a suspended load of any lifting appliance;
- j) Every part of a load in course of being hoisted or lowered shall be adequately suspended and supported to prevent danger;
- k) Every receptacle used for hoisting bricks, tiles, slates or other material shall be suitably enclosed as to prevent the fall of any such material;

- l) The hoisting platform shall be enclosed when loose material or loaded wheel barrows are placed directly on such platform or lowering such materials or wheel barrows;
- m) No material shall be raised, lowered or slewed with any lifting appliance in such a way as to cause sudden jerks to such appliance;
- n) In hoisting a barrow, any wheel of such barrow shall not be used as a means of support unless adequate steps have been taken to prevent the axle of such wheel from slipping out of its bearing;
- o) Long objects like planks or girders shall be provided with tag line to prevent any possibility of danger while raising or lowering such objects;
- p) During the process of landing or material, a building worker shall not be permitted to lean out into empty space for finding out the loading and unloading of such material;
- q) When hoisting of load is done in an enclosed space, neither the lifting material nor the boom shall project outside the enclosed space;
- r) Adequate steps shall be taken to prevent a load, in the course of being hoisted or lowered from coming into contact with any object to avoid any displacement of such load and appropriate appliances provided and used for guiding heavy loads when raising or lowering heavy loads to avoid crushing of hands of building workers during such raising or lowering of loads.

7.14 **HOISTS**

- a) Hoist towers shall be designed according to the relevant national standards;

- b) Hoist shafts shall be provided with rigid panels or other adequate fencing at the ground level on all sides of such shafts and at all other levels on all sides of the access to such shafts while the walls of hoist shafts, except at approaches, extend at least two meters above the floor or platform of access to such shafts;
- c) Approaches to hoist shall be adequately lit and provided with gates that shall be guarded to maintain visibility at least of two meters height; and equipped with a device, which requires such gate to be closed before the platform of such hoist can leave the landing, and prevents the gate from being opened unless such platform is at the landing;
- d) The guides of hoist platforms shall offer sufficient resistance to bending and to bucking in the case of jamming, by providing a safety catch;
- e) Overhead beams and their supports are capable of holding the total maximum live and dead loads that such beams and supports will be required to carry, with a safety factor of at least five;
- f) A clear space shall be provided –
 - Above the highest stopping place of a cage or platform to allow sufficient unobstructed travel of such cage or platform in case of over-winding and
 - Below the lowest stopping place of such cage or platform;
- g) Adequate covering shall be provided above the top of hoist shafts to prevent materials from falling into such shafts;
- h) Outdoor hoist towers shall be erected on adequately firm foundations and securely braced, guyed and anchored;

- i) A ladder way shall extend from the bottom to the top of every outdoor hoist tower in case no other ladder way exists within easy reach and such ladder way shall comply with the relevant national standards;
- j) The rated capacity of a hoisting engine shall at least be one and a half times the maximum load that such engine will be required to move;
- k) All gearing on a hoisting engine shall be securely enclosed;
- l) Steam piping of hoisting engine shall be adequately protected against accidental contact of such piping with a building worker;
- m) Electrical equipment of a hoisting engine shall be effectively earthed;
- n) A hoist shall be provided with suitable devices to stop a hoisting engine as soon as the platform of such hoist reaches its highest stopping place;
- o) A hoisting engine shall be protected by suitable cover against weather and falling objects;
- p) A hoisting engine set up in a public thoroughfare shall be completely enclosed;
- q) All exhaust steam pipes shall discharge steam in such a manner that the steam so discharged does not scald any person or obstruct the operator's view;
- r) The motion of a hoist shall not be reversed without first bringing it to rest to avoid any harm from such reverse motion;
- s) A hoist not designed for the conveyance of persons shall not be set in motion from the platform of such hoist;

- t) Pawls and ratchet wheels of a hoist, requiring disengagement of such pawls from such ratchet wheels, before the platform of such hoist is lowered, shall not be used;
- u) A platform of a hoist shall be capable of supporting such maximum load that such platform may carry with a safety factor of at least three;
- v) A platform of a hoist shall be equipped with suitable safety gear which can hold such platform with its maximum load in case its hoisting rope breaks;
- w) On platform of a hoist, the wheel barrows or truck shall be efficiently blocked in safe positions;
- x) A cage of a hoist or platform where the building workers are required to enter into such cage or to go on such platform at landing levels, shall be provided with a locking arrangement to prevent such cage or platform from moving during the time a worker enters or leaves such cage or platform;
- y) The sides of platform of a hoist which are not used for loading or unloading, shall be provided with toe-board and enclosures of a wire mesh or any other suitable means to prevent the fall of any part of a load from such platform, further provided that
 - The platform of a hoist, which has any probability of falling of any part of a load from it, shall be provided with an adequate covering to prevent such fall;
 - The counter weights of a hoist consisting of an assemblage of several parts shall be so constructed that such parts shall be rigidly connected together;

- The counter weights of a hoist shall run between guides;
- z) At every level of work the building workers shall be provided with adequate platforms for performing such work;
- aa) A legible notice in Hindi as well as in a local language shall be displayed in a conspicuous place of the platform of a hoist and that such notice shall state the maximum carrying capacity of such hoist in kilograms on the hoisting engine;
- bb) On a hoist authorized and certified for the conveyance of the persons on the platform or in the cage and such notice shall state the maximum number of persons to be carried on such hoist at one time;
- cc) On a hoist carrying goods and other materials such notice shall state that such hoist is not meant for carriage of persons.

7.15 FENCING AND MEANS OF ACCESS TO LIFTING APPLIANCES

- a) Safe means of access shall be provided to every part of lifting appliances;
- b) The operator's platform on every crane or tip driven by mechanical power shall be securely fenced and provided with safe means of access and where access to such platform is by a ladder, the sides of such ladder shall extend to a height reasonable beyond such platform or some other suitable handhold shall be provided in the platform;
- c) The handling place on such platform shall be maintained free from obstruction and slipping; and
- d) In case the height of such ladder exceeds six meters, the resting platforms shall be provided on such ladder at every six meters of its

height and where the distance between last platform so provided and the top end of such ladder is more than two meters then on such top end.

7.16 RIGGING OF DERRICKS:

- a) Every derrick shall have current and relevant rigging plans and any other information necessary for the safe rigging of such derrick and its gear.

7.17 SECURING OF DERRICK FOOT:

- a) Appropriate measures shall be taken to prevent the foot of a derrick from being lifted out of its socket or supports.

7.18 CONSTRUCTION AND MAINTENANCE OF LIFTING GEAR

- a) Every lifting gear shall be –
 - of good design and construction, sound material and adequate strength to perform the work for which it is used;
 - free from patent defects; and
 - properly maintained in good repair and working order;
- b) Components of the loose gear, at the time of its use, shall be renewed if one of its dimensions at any point has decreased by ten per cent or more;
- c) A chain shall be withdrawn from use when it is stretched and increased in length which exceeds five per cent of its length or when a link of such chain is deformed or is otherwise damaged or defects in the welds have appeared on it;

- d) Rings, hooks, swivels and end links attached to a chain shall be of the same materials as that of such chain;
- e) The voltage of electric supply to any magnetic lifting device shall not fluctuate by more than plus or minus 10%.

7.19 TEST AND PERIODICAL EXAMINATION OF LIFTING GEARS

- a) A lifting gear shall be initially tested for the manufacturer by a competent person in a manner specified as per schedule annexed before taking into use or after undergoing any substantive alterations which renders its any part liable to affect its safety and such gear after such test shall subsequently be retested for the use of its owner at least once in every five years;
- b) A lifting gear in use shall thoroughly examined once at least in every twelve months by a competent person;
- c) A chain in use shall be thoroughly examined at least once every month by a responsible person for its use;
- d) Certificates of initial and periodical test and examinations of loose gears shall be obtained in the form annexed.

7.20 ROPES

- a) No rope shall be used for building or other construction work unless –
 - It is of good quality and free from patent defects; and
 - In the case of wire rope, it shall be tested and examined by a competent person in the manner annexed;

- b) Every wire rope of lifting appliance or lifting gear used for building or other construction work shall be inspected by a responsible person for such use, once at least in every three months;
- c) Provided that after if any such wire is broken in such rope, the responsible person shall thereafter inspect it once at least in every month and ensure that;
- d) No wire rope shall be used for building or other constructing work if in any length of eight diameters of such wires, the total number of visible broken wires exceed ten per cent of the total number of wires in such rope, or such rope shows signs of excessive wear, corrosion or other defects which in the opinion of the person who inspects it, is unfit for use;
- e) Eye splices and loops of ropes for the attachment of hooks, rings and other such parts to wire rope shall be made with suitable thimble;
- f) A thimble or loop splice made in any wire rope sling shall conform to the following standards, namely:
 - Wire rope sling shall have at least three tucks with full strand of rope and two tucks with one-half of the wires cut out of each of such strand in all cases, such strands shall be tucked against the lay of the rope;
 - Protruding ends of such strands in any splice of wire rope slings shall be covered or treated so as to leave no sharp points;
 - A fiber rope or a rope sling shall have at least four tucks, tail of such tuck being whipped in a suitable manner; and

- A synthetic fiber rope or rope sling shall have at least four tucks with full strands followed by further tuck with one-half filaments cut out of each of such strand and final tuck with one-half of the remaining filaments cut out from such strands. Any portion of the splices containing such tucks, with reduced number of filaments, shall be securely covered with suitable tape or other materials;
- g) Provided further that nothing contained above shall apply where any other form of splice, which may be shown to be as efficient as the splice with above standards, shall be used.

7.21 HEAT TREATMENT OF LIFTING GEARS

- a) All chains other than bridle chains attached to derricks and all rings, hooks, shackles and swivels used in hoisting or lowering of such derricks shall be effectively annealed under supervision of a competent person and at the following intervals, namely:
- Such chains, rings, hoods, shackles and swivels which are not more than twelve and a half millimeter of length annealed at least once in every six months; and
 - All other such chains rings hooks shackles and swivels shall be so annealed at least once in every twelve months;
- b) Provided that the clause (a) above shall not apply to -
- c) Pitched chins, working on sprocket or sprocket wheels;
- d) Rings, hooks and swivels permanently attached to pitched chains, pulley blocks or weighing machines, and
- e) Hooks and swivels having ball bearings or other case hardened parts;

- f) A chain or a loose gear made of high tensile steel or alloy steel shall be plainly marked with a mark indicating that it is so made;
- g) No chain or loose gear made of high tensile steel or alloy steel shall be subjected to any form of heat treatment except where such treatment is necessary for the purpose of repair of such chain or loose gear and that such repair shall be made under the direction of the competent person;
- h) That the wrought iron gear, the past history of which is not traceable, shall be suspected of being heat treated at incorrect temperature shall be normalized before using it on any building or other construction work.

7.22 CERTIFICATE TO BE ISSUED AFTER ACTUAL TESTING AND EXAMINATION ETC:

- a) A competent person shall issue a certificate after actual testing or examination of the apparatus specified and record of such test or examination shall be maintained for inspection.

7.23 REGISTER OF PERIODICAL TEST, EXAMINATION AND CERTIFICATION THEREOF

- a) A register in the form annexed shall be maintained and particulars of such test and examination of lifting appliances, lifting gears and heat treatment as required shall be entered in such register;
- b) Certificate in respect of each of the following shall be obtained from a competent person:
 - c) i) In cases of initial and periodical test and examination of the lifting appliances such as Winches, Derricks and their accessory gears, Cranes or Hoists and their accessory gears;

- d) In case of test, examination and re-examination of loose gears;
- e) In case of test and examination of wire ropes;
- f) In case of heat treatment and examination of loose gears;
- g) In case of annual thorough examination of the loose gears, except where required particulars of such exemption have been enclosed in the register referred to in Form annexed and such certificates are attached to the register referred to as above and certificates kept at such construction site in case such register and certificate relate to lifting appliances, loose gear and wire ropes and
- h) Produced on demand and retained for at least five years after the date of the last entry made in such register;
- i) No lifting appliance or lifting gear in respect of which an entry is required to be made in register referred to above and certificate of test and examination are required to be attached in such register in the manner as specified, shall be used for building or other construction work unless the required entries have been made in such register and certificates.

7.24 **VACUUM AND MAGNETIC LIFTING GEAR**

- a) No vacuum lifting gear, magnetic lifting gear or any other lifting gear where the load on it is held by adhesive power, shall be used while workers are performing operations beneath such gear;
- b) A magnetic lifting gear used in connection with building or other construction work shall be provided with an alternative supply of power, such as batteries, which may come into operation immediately in the event of failure of the main power supply;

- c) No building worker shall work within the swinging zone of the lifting gear or load or building or other construction material suspended to such lifting gear.

7.25 KNOTTING OF CHAINS AND WIRE ROPES:

No chain or wire rope with a knot in it shall be used in building or other construction work.

7.26 CARRYING OF PERSONS BY MEANS OF LIFTING APPLIANCES ETC.

- a) No building worker shall be raised, lowered or carried by a power driven lifting appliance, except
- On the drive's platform in the cage of a crane; or
 - On a hoist; or
 - On an approved suspended scaffold;
- b) Provided that a building worker may be raised, lowered or carried by a power driven lifting appliance:
- c) In circumstances where the use of a hoist or of a suspended scaffold shall not reasonably be practicable, or
- d) On an aerial cableway or aerial ropeway, provided further that the following requirements are met:
- e) That the appliance referred to above can be operated from one position only and that
- f) Any winch used in connection with the appliance shall also comply with the requirements as laid down above.
- g) The appliance referred to above shall not carry any person except:

- h) In a chair or cage,
- i) In a skip or other receptacle at least three feet deep which shall be suitable for safe carriage of a person and any such chair, cage, skip or other receptacle shall be made of good construction, sound material, and adequate strength and properly maintained with suitable means to prevent any occupant therein from falling out of it and shall be free from any material or tools which may interfere with the handhold or foothold of such occupant or otherwise endanger him; and
- j) Those suitable measures shall be taken to prevent the chair, cage skip or other receptacle from spinning or tipping in a manner dangerous to any occupant therein.

7.27 HOISTS CARRYING PERSONS

- a) No building worker shall be carried with the help of a hoist unless it is provided with a cage which:
 - Is so constructed as to prevent, when its gates are shut, any building worker carried by such hoist from falling out of it or from being trapped between any part of such cage and any fixed structure or other moving part of such hoist or from being struck by articles or materials falling down the hoist way on which such hoist is moving; and
 - Is fitted on each of its side from which access is provided to a landing place with a gate which has efficient interlocking or other devices to secure so that such gate cannot be opened except when such cage is at a landing place and that such cage cannot be moved away from any such place until such gate is closed;

- b) Every gate in the hoist way enclosure of such hoist used for carrying persons shall be fitted with efficient interlocking or other devices to secure so that such gate cannot be opened except when the cage of such gate is at the landing place and that such cage cannot be moved away from the landing place until such gate is closed;
- c) In every hoist used for carrying building workers there are provided with suitable and efficient automatic devices to ensure that the cage of such hoist comes to rest at a point above the lowest point to which such cage may travel.

7.28 **ATTACHMENT OF LOADS**

- a) When a sling is used to hoist long materials, a lifting beam shall be used to space the sling legs for proper balance and when a load is suspended at two or more points with slings, the eyes of the lifting legs of such slings shall be shackled together and such shackled or eyes of the shackled slings shall be placed on the hook or the eyes of such lifting legs shall be shackled directly to the hoisting block, ball or balance beam, as the case may be;
- b) Every container or receptacle used for raising or lowering stone, bricks tiles, slates or other similar objects shall be so enclosed with the hoist as to prevent the fall of such objects;
- c) A loaded wheel barrows placed directly on a platform of a hoist for raising or lowering of such wheel barrows shall be so secured that such wheel barrows cannot move and such platform shall be enclosed to prevent the fall of the contents kept in such wheel barrows;

- d) Landings of hoists shall be so designed and arranged that building workers on such hoist be not required to lean out into empty space for loading and unloading on any material from such hoist.

7.29 **TOWER CRANES**

- a) No person other than the operator trained and capable to work at heights shall be employed to operate tower cranes;
- b) The ground on which a tower crane stands shall have adequate bearing capacity;
- c) Bases for tower cranes and trucks for rail mounted tower cranes shall be firm and leveled and such cranes erected at a reasonably safe distance from excavations and operated within gradient limits as specified by the manufacturer of such cranes;
- d) Tower cranes shall be sited where there is a clear space available for erection, operation and dismantling of such cranes;
- e) Tower cranes shall be sited in such a way that the loads on such cranes shall not be handled over any occupied premises, public thoroughfares, railways or near power cables, other than construction works for which such cranes are used;
- f) Where two or more tower cranes are sited and operated, every care shall be taken to ensure positive and proper communication between operators of such cranes to avoid any dagger or dangerous occurrences;
- g) Tower cranes shall not be used for loading magnet, or demolition ball service, piling operation or other similar operations which could impose excessive load stresses on the crane structure of such cranes;

- h) The instruction of the manufacturer of a tower crane and standard safe practices regarding such cranes shall be followed while operating or using such cranes.

7.30 QUALIFICATION OF OPERATOR OF LIFTING WINCHES AND OF SIGNALER ETC.

- a) No person shall be employed to drive or operate a lifting appliance whether driven by mechanical power or otherwise or to give signals to driver of operator of such lifting appliance or to work as an operator of a rigger or derricks unless he is
- Sufficiently competent and reliable;
 - Possesses the knowledge of the inherent risks involved in the operation of lifting appliance;
 - Medically examined periodically as specified and
 - Is above eighteen years of age.

8.0 SAFETY IN THE USE OF TRANSPORT, EARTHMOVING EQUIPMENT &
OTHER CONSTRUCTION MACHINERY

8.1 **EARTHMOVING EQUIPMENT AND VEHICLES**

- a) All vehicles and earthmoving equipment shall be made of good material, proper design and sound construction and be sufficiently strong for the purpose for which such equipment are properly used in accordance with standard safe operating practices;
- b) Provided that the truck or trailer employed for transporting freight containers shall be of the size sufficient to carry the containers, without over hanging and provided with twist locks conforming to approved standards, at all the four corners of each of such use by an authority under the relevant law for the time being in force and is inspected by a responsible person, at least once in a month and record of such inspection shall be maintained:
- c) All transport or earth moving equipment and vehicles shall be inspected at least once a week by a responsible person and in case any defect is noticed in such equipment or vehicle it shall be immediately taken out of use;
- d) Power trucks and tractors shall be equipped with effective brakes, headlights and tail lamps and maintained in good repair and working order;
- e) Side stanchions on power trucks and trailers for carrying heavy and long objects shall be
 - Of sound construction and free from defects;

- Provided with tie chains attached to the top across the loads for preventing such stanchions from spreading out; and
 - Kept in position while loading and unloading;
- f) Safe gangways provided for to and fro movement of building workers engaged in loading and unloading of lorries, trucks, trailers and wagons;
 - g) Trucks and other equipment shall not be loaded beyond their safe capacity and carry workers engaged in loading and unloading of lorries, trucks trailers and wagons in an unsafe condition;
 - h) Handles of trucks shall be so designed as to protect the hands of the building workers working on such trucks, or such handles provided with knuckle guards;
 - i) No unauthorized person shall ride the transport equipment employed in such work;
 - j) A driver of a transport equipment shall maneuver such equipment under the direction of a signaler;
 - k) Adequate precaution such as isolating the electric supply or erecting overhead barriers of a safe height shall be taken when earth moving equipment or vehicles are required to operate in dangerous proximity to any live electric conductor;
 - l) Vehicles and earth moving equipment shall not be left on a slope with the engine of such vehicles or equipment running;
 - m) All earth moving equipment, vehicles or other transport equipment shall be operated only by such person who are adequately trained and

possess such skills as required for safe operation of such equipment, vehicle or other transport equipment.

8.2 **POWER SHOVELS AND EXCAVATOR**

- a) A shovel or an excavator whether operated by steam or electric or by internal combustion, shall be constructed, installed, operated, tested and examined as per approved standards;
- b) Excavator equipped for use as a mobile crane shall be examined and tested in accordance with the requirements for such mobile cranes as laid down by the manufacturer; and
- c) Fitted with an automatic safe working load indicator;
- d) Buckets or grabs of power shovels shall be propped to restrict the movement of such buckets or grabs while being repaired or while the teeth of such buckets or grabs are being changed.

8.3 **BULLDOZER**

- e) Operator of every such bulldozer before leaving the dozer shall take the following steps:
 - f) Apply the brakes;
 - g) Lower the blade and sipper and
 - h) Put the shift lever into neutral;
 - i) Dozer left on level ground at the close of the work for which such bulldozer is used;
 - j) The blade of a bulldozer kept low when such bulldozer is moving uphill;

k) The bulldozer blades not used as brakes except in an emergency.

8.4 **SCRAPERS**

- a) A tractor and scraper shall be joined by safety line at the time of its operation;
- b) The scraper bowls shall be propped while blades of such scraper are being replaced;
- c) A scraper moving downhill shall not be left in gear.

8.5 **MOBILE ASPHALT LAYERS & FINISHERS**

- a) A mixture elevator shall be located within a wooden or sheet metal enclosure with a window for observation, lubrication and maintenance;
- b) Bitumen scoops shall have adequate covers;
- c) When asphalt plants are working on public road, adequate traffic control shall be established on such road and the building workers working with such plant provided with reflective jackets;
- d) A sufficient number of fire extinguishers shall be kept in readiness at such workplace where fire hazards may exist;
- e) The materials shall be loaded on the elevator after the drying drum has warmed up of such elevator;
- f) No open light shall be used for ascertaining the level of asphalt;
- g) Inspection opening shall not be opened till there is a pressure in the boiler, which may cause injury to building workers.

8.6 **PAVERS:**

Pavers shall be equipped with guards suitable to prevent building workers from walking under the skip of such pavers.

8.7 **Road rollers:**

Before a road roller is used on the ground, such ground shall be examined for its bearing capacity and general safety, especially at the edges of slopes such as embankment on such grounds and shall not be moved downhill with the engine out of gear.

8.8 **GENERAL SAFETY IN RESPECT OF POWERED CONSTRUCTION MACHINERY**

- a) Every vehicle or earthmoving equipment shall be equipped with -
 - Silencers;
 - Tail lights
 - Power and hand brakes;
 - Reversing alarm; and
 - Search light for forward and backward movement, which are required for safe operation of such vehicle or earthmoving equipment;
- b) The cab of vehicle or earthmoving equipment shall be kept at least one meter from the adjacent face of a ground being excavated;
- c) When cranes or shovel are traveling, the boom of such crane or shovel shall be in the direction of such travel and the bucket or scoop attached to such crane or shovel raised and without load except when such traveling is downhill.

9.0 9.0 SAFETY IN THE PROVISION OF RUNWAYS AND RAMP

9.1 USE OF RUNWAYS AND RAMPS:

- a) Runway or ramps shall not be less than 430 mm in width and constructed of not less than 25 mm thick planking or any other material of adequate strength to withstand the required load, supported substantially in relation to the span and braced with such runway or ramp, and design and construction of such runway or ramp shall be in accordance with the approved standards;
- b) Every runway or ramp located more than 3 m above the floor or ground shall be on open sides and provided with a guardrail of adequate strength and height of not less than 1 m.
- c) Use of runways and ramps by vehicles:
 - All runways and ramps shall be of sound construction, strength and securely braced and supported;
 - Every runway or ramp for the use of transport equipment like trailers, trucks or heavier vehicles shall have a width of not less than 3.7 m and provide with timber curbs or any other material of adequate strength with not less than 200 mm by 200 mm in width placed parallel to, and secured to, the sided of such runway or ramp and such runways or ramps or ramps shall be designed in accordance with the approved standards.

9.2 SLOPE OF RAMPS:

Every ramp shall have a slope not exceeding one in four and the total rise of a continuous ramp used by building workers carrying material or using wheelbarrows shall not exceed 3.7 m, unless broken by horizontal landing of at least 1.2 m in length.

9.3 USE OF RUNWAYS OR RAMPS BY WHEELBARROWS, ETC.

Every runway or ramp used for wheelbarrows and carts or hand trucks shall not be less than 1 m width and constructed of not less than 50 mm thick planking, and supported and braced suitably for such use;

Every runway or ramp located more than 3 m above the floor or ground shall be provided on the open sides with suitable guardrails of adequate strength.

10.0 SAFETY IN HANDLING AND USE OF EXPLOSIVES

10.1 GENERAL PROVISIONS:

- a) The use of explosives shall be carried out in a safe manner to avoid injury to any person and under the direct supervision of a responsible person;
- b) No person other than authorized and competent one shall be allowed to handle and use explosives;
- c) Before using any explosive, necessary warning and danger signals shall be erected, at conspicuous places of such use to warn the building workers and the general public of the danger involved in such use.
- d) No person other than authorized and competent one shall be allowed to handle and use explosives.
- e) Smoke, open lamps, other type of hot or heat producing items and sparks shall be prohibited in or near explosives magazines or while explosives are being handled, transported or used.
- f) No person shall be allowed to handle or use explosives while under the influence of intoxicating liquors or dangerous drugs.
- g) The explosives shall be accounted for at all times. No explosives or blasting agents shall be abandoned.
- h) No fire shall be fought where the fire is in the imminent danger of contact with explosives. All employees shall be removed to a safe area and the fire area shall be guarded against intruders.
- i) Employees authorized to prepare explosive charges or conduct blasting operations shall use every reasonable precaution including but not limited to

visual and audible warning signals, flags, or barricades to ensure employee safety.

- j) Due precautions shall be taken to prevent accidental discharge of electric blasting caps from current induced by induced voltage, lightning, adjacent power lines, dust storms, or other sources of extraneous electricity or otherwise. These precautions shall include:
- Short-circuiting of detonators in holes, which have been primed and shunted until wired into the blasting circuit.
 - The suspension of all blasting operations and removal of persons from the blasting area during the approach and progress of an electric storm.
- k) The prominent display of adequate signs, warning against the use of radio transmitters, on all roads within 1000 ft of blasting operations. Whenever adherence to the 1000 ft distance would create an operational handicap, a competent and expert person shall be consulted to evaluate the particular situation, and an alternative provided, which are adequately designed to prevent any premature firing of electric blasting of caps. A description of any such blasting shall be reduced to writing and shall be certified as meeting the purposes of this subdivision by the competent person consulted. The description shall be maintained at the construction site during the duration of the work, and shall be available for inspection.
- l) Empty boxes and paper and fiber packing materials, which have previously contained high explosives, shall not be used again for any purpose, but shall be destroyed by burning at an approved location.
- m) Explosives, blasting agents and blasting supplies that are obviously deteriorated or damaged shall not be used.

- n) Delivery and issue of explosives shall only be made authorized persons into authorized magazines or approved temporary storage or handling areas.
- o) Blasting operations in the proximity of overhead power lines, communication lines, utility services, or other services and structures shall not be carried on until the operators and/or owners have been notified and measures for safe control have been taken. In such situations controlled blasting shall be restored to.
- p) All loading and firing shall be directed and supervised by competent persons thoroughly experienced in this field.
- q) Loaded boreholes shall not be left unattended after the end of the shift.
- r) Suitable and sufficient means of egress to ground level shall be provided in all cases of excavations, trenches, all other places where explosives are handled above or below ground level.
- s) At an appropriate time before the final blasting warnings, workers in the area shall be removed to a designated safe place.
- t) An unmistakable, audible, final warning shall be sounded one minute prior to the detonation of explosives; after completion, when the person in charge has established that safe conditions prevail, an “all clear” shall be sounded.
- u) To prevent persons entering any danger zone during blasting operations notices shall be given to all concerned.
- v) Notices referred above shall indicate:
- w) that explosives are in use;
- x) the audible warning sound and the “all clear” and state when they will be sounded; and

- y) the warning flags in use, including an “all clear” flag.
- z) Precautions against lightning shall be provided in accordance with the Indian Electricity Act and Indian Explosives Act and Rules and regulations framed there under.
- aa) Package containing explosives shall not be dragged, dropped or handled roughly.
- bb) Non-sparking tools shall be used to open keys.
- cc) The explosives shall not be carried in the box or otherwise on any individual.
- dd) Nothing shall be inserted in the open end of the blasting cap except fuses.

- ee) Deteriorated or damaged explosives shall not be used but shall be disposed or destroyed strictly in accordance with the approved methods and in the doing so the manufacturers or the appropriate authority's instructions shall be followed.
- ff) lightning shall be in accordance with Indian Electricity Act/Rules

10.2 TRANSPORTATION OF EXPLOSIVES

- a) Keep safe distance and to use non-sparking tools while opening packages containing explosives;
- b) Stop the use of explosives and handling thereof while the weather conditions are not suitable for such use or handling;
- c) Due precautions shall be taken to prevent accidental discharge of electric blasting caps from current induced by induced voltage, lightning, adjacent power-lines, dust storms or other sources of extraneous electricity or otherwise. These precautions shall include –
- d) Suspension of all blasting operations and evacuation of persons;
- e) All warning signs shall be displayed within 200 m of blasting operations and in case putting up a sign at 200 m is impractical, the contractor shall consult the Engineer-in-charge for alternatives;
- f) All loading and firing shall be directed and supervised by competent persons thoroughly experienced in the field;
- g) To prevent persons entering any danger zone during blasting operations, notices shall be given to all concerned;
- h) In addition to these provisions, all measures and precautions that are required to be observed for use, handling, storing or transportation of explosives

under the Rules framed under the Explosives Act, 1884 (4 of 1884) shall be observed;

- i) All the relevant statutory provisions, local laws and rules and regulations shall be complied with.
- j) Where the magazine is located near the construction site and blasting operation continues daily, actual requirement of explosives shall be drawn from the magazine and transported to the site. Any leftovers shall be returned to the magazine each time after the blast. In case of work at scattered places and for a small duration, portable magazines shall be used and kept within a fence in safe place and properly guarded.
- k) For carrying higher quantity (more than 5 kg of explosives) specially designed insulated containers shall be used. These containers shall be constructed of finished wood not less than 5cm thick or plastic not less than 6mm thick or pressed fibre not less than 10mm thick. There shall be no metal parts (not even nails, bolts, screws etc.) and the containers shall be provided with suitable non-conductive carrying device, such as rubber, leather or canvas handle or strap.
- l) Vehicles to be used for transportation explosives shall be in good working condition and shall have a tight wooded or non-sparking metal (copper, brass and the like) floor with sides and ends high enough to prevent the explosives from falling off the vehicle. In open bodied vehicles, the explosives shall be covered with a waterproof and fibre tarpaulin.
- m) Electrical wiring in vehicle shall be fully insulated so as to prevent the danger of short- circuiting and at least two fire extinguishers of carbon dioxide type shall be carried. The vehicle shall be properly marked indicating adequate warning to the public in regard to the nature of cargo.

- n) No metals except approved metal truck shall be allowed to come in contact with cases of explosives, metal, flammable, or corrosive substance shall not be transported with explosives. As far as possible, transportation of any material along with explosives shall be prohibited.
- o) Smoking shall be prohibited in the vehicle carrying explosives.
- p) No unauthorized person shall be allowed in the vehicle, carrying explosives.
- q) Loading and unloading of explosives shall be done carefully.
- r) Explosives and detonators or blasting caps shall not be permitted to be transported in the same vehicle.
- s) Detonators and other explosives for blasting shall be transported to the site of work in the original containers or in securely locked separate non-metallic containers and shall not be carried loose or mixed with other materials.

10.3 STORAGE OF EXPLOSIVES AND BLASTING AGENTS

- a) Explosives and related materials shall be stored in approved facilities.
- b) Blasting caps, electric blasting caps, detonating primers, and primed cartridges shall not be stored in the same magazine with other explosives or blasting agents.
- c) Smoking and open flames shall not be permitted within 50 feet of explosives and detonators storage magazine.
- d) No Explosives or blasting agents shall be permanently stored in any underground area until the area has been developed to the point where at least two modes of exit have been provided.
- e) Permanent underground storage magazine shall be at least 300 feet from any shaft or other active under ground working area.

- f) Permanent underground magazines containing detonators shall not be located closer than 50 feet to any magazine containing other explosives or blasting agents.

10.4 **DRILLING AND LOADING**

- a) Before planning out the drilling operations for blasting purposes, nature of stratum and the over burden shall necessarily be examined to avoid possibilities of landslides after blasting.
- b) The face or rock shall be carefully examined before drilling to determine the presence of unfired explosives. No attempt shall be made to drill at a site if un-detonated explosives are suspected. In such case the boreholes shall be thoroughly cleaned before a cartridge is

- c) inserted. Wooden tamping rods (not pointed, but cylindrical throughout) shall be used in the charging the holes. The cartridge will be on the top.
- d) The borehole shall be carefully checked for length, presence of water dust, etc. with a wooden temping pole or a measuring tape before loading.
- e) Surplus explosives shall not be stacked near working areas during loading/unloading.
- f) The line of detonating fuse extending into a borehole shall be cut from the spool before loading the remainder of the charge.
- g) A bore shall not be loaded with explosives after springing (enlarging the hole with explosives) or upon completion of drilling without making sure it is cool and it does not contain any hot smoldering material. Temperatures in excess of 65o C are dangerous.
- h) A bore near another hole loaded with explosives shall not be sprung.
- i) No force shall be used for inserting cartridges or any explosives into a bore hold or pass any obstruction in a borehole.
- j) No force shall be used for inserting a blasting cap or an electric blasting cap into explosive. The cap shall be inserted into a hole made with a pickers designed for the purpose. A hitch of the electric blasting cap leading wire shall be made on the primer cartridge so as to prevent pulling out the electric blasting cap from the explosive charge. In case of fuse, the fuse shall be tied to the explosive cartridge so that the blasting cap is not pulled out. Care shall be taken so that the blasting cap is not pulled out. Care shall be taken so that the electric blasting cap, leading wire or the length of the fuse does not get damaged during loading of the charge.
- k) No attempt shall be made to slit, drop, deform or abuse the primer.

- l) Blasting caps or electric blasting caps shall not be connected to detonating fuse except by methods recommended by the manufacturers of caps.
- m) Explosive cartridge shall not be cut, nor explosive removed from the cartridge for use.
- n) Metallic devices of any kind shall not be used in tamping. Wooden tamping tools with not exposed metal parts except non-sparking metal connectors for jointed poled shall be used. Violent tamping shall be avoided. Primer shall not be tamped.
- o) Care shall be taken to confine the explosives in the bore hold with sand, earth clay or other suitable combustible stemming material.
- p) Kinking or injuring of fuse or electric blasting cap wires shall be avoided when tamping.

10.5 ELECTRICAL SHOT-FIRING CIRCUIT

- a) In deciding the sizes of wires, fuses, circuits, blasting switches, etc., instructions issued by the manufacturers of these articles shall be followed, if they do not contradict with Indian Explosives Act or framed under it.
- b) No person shall attempt to uncoil the wires and open out the short-circuited bare leading wires of the electric blasting cap during approach of dust storm or near any source of large charge of static electricity or near a radio transmitter. The manufacturer of the cap or the Inspectorate of Explosives shall be consulted regarding the distance from the transmitter beyond which electric short firing shall be conducted.
- c) Firing circuit shall be kept completely insulated from the ground of the other conductors, such as wires, rails, pipes or other paths or stray current.

- d) There shall not be any electric live wires or cables of any kind near electric blasting caps or other explosives except at the time and for the purpose of firing the blast.
- e) All electric blasting caps shall be tested singly and also when connected in a circuit in series using only an approved type of circuit continuity tester or ohmmeter.
- f) No attempt shall be made to use in the same circuit either electrical blasting caps made by more than one manufacturer or electric blasting caps of different design or function even if made by the same manufacturers unless such use is approved by the manufacturers.
- g) No attempt shall be made to fire a circuit of electric blasting caps with less than the minimum current specified by the manufacturer of that electric blasting cap.
- h) Care shall be taken to ensure that all wire ends to be connected are bright and clean.
- i) The electric cap wires or leading wires shall be kept short circuited until ready to fire.
- j) When energy for blasting is taken from power circuits the voltage shall not exceed 220v. The wiring controlling arrangements shall conform to the following:
- k) The blasting switch shall be strictly according to the specifications, externally operated double-throw switch, which when locked in the open position will short circuit and ground the leading wires. The switch shall be installed at the location where the firing is to be controlled.

- l) A 'safety' switch of the same type as the blasting switch shall be installed between the blasting switch and the firing circuit and lead lines, at a distance not to exceed 180cm from the blasting switch.
- m) Both the safety switch and the blasting switch shall be locked in the open position immediately after the shot and before any person is permitted to return to the blasting area. Key to the switches shall remain in the possession of the blaster at all times.
- n) Rubber covered or other adequately insulated copper wires in good condition shall be used for firing lines and shall have solid cores of appropriate gauge. Sufficient firing line shall be provided to permit the blaster to be located at a safe distance from the blast. Single conductor lead lines shall be used.
- o) Blasting operations in the proximity of overhead power lines, communication lines, utility lines, or other structures shall not be carried on until the operator or the owner, or both of such lines as been notified and precautionary measures deemed necessary, have been taken.
- p) All holes loaded on a shift shall be fired on the same shift.
- q) As far as possible, blasting shall be carried out using suitable exploder with 25 per cent excess capacity. Electric power from the mains shall be used only when it is absolutely necessary.

10.6 SHOT-FIRING WITH SAFETY FUSE

- a) The fuse shall be carefully handled to avoid damaging the covering. In very cold weather the fuse shall be slightly warmed before using so as to avoid cracking the waterproofing.
- b) Short fuse shall not be used. The length of a fuse shall not be less than 120cm. The rate of burning of the fuse shall be known and it would be necessary to make sure that it will take sufficient time in burning so as to enable all persons to reach a place of safety. The burning rate of the fuse shall not be more than 60 cm/min.
- c) The fuse shall not be cut until the operation to insert the fuse into a blasting cap is ready. The fuse shall be cut off about 2.5 to 5 cm to ensure a dry end. It shall be cut squarely across with a clean and sharp blade. The fuse shall be seated lightly against the cap charge and care shall be taken to avoid twisting after it has been placed in position.
- d) Blasting caps shall not be crimped by any means except by a cap crimper designed for the purpose. It shall be necessary to make sure that the cap is squarely crimped to the face.
- e) The fuse shall be lighted with a fuse lighter designed for the purpose. If a match is used, the fuse shall be slit at the end and the match head held in then slit against the power core and then the match head rubbed against an abrasive surface to light the fuse.
- f) The fuse shall not be lighted until sufficient stemming has been placed over the explosives to prevent sparks of live match heads from coming into contact with the explosives.
- g) The explosives shall not be held in hands when lighting the fuse.

10.7 UNDERGROUND WORK

- a) Only permissible explosives and in the manner as specified by the appropriate authority shall be used.
- b) Excessive quantities of explosives shall not be taken underground at any time. Black blasting powder or pellet powder shall not be used with any other explosive in the same borehole.

10.8 BEFORE AND AFTER FIRING

- a) Before firing, sufficient warning shall be given to enable the people working in the area to get off the danger zone. The danger zone shall be suitable cordoned off and flag men posted at important points.
- b) No loose materials, such as tools, drilling implements etc. Shall be left on the rock surfaces to be blasted.
- c) Blasting in the open shall be carried out during the fixed hours every day or on fixed days in the week. This information shall be amply publicized and the following precautions observed:
 - On the project sites, where blasting operations are carried out, daily blasting hours shall be clearly printed on the sign-boards on all the roads approaching that area.
 - Road closing barriers should be provided to close the traffic on these roads, at least 400 meters away when the firing is to take place.
- d) The beginning of the firing shall follow loud sirens and similarly loud sirens shall succeed the completion of the firing.

- e) The shot-firer shall not be allowed to return to the blasting site after firing, until at least 5 min have elapsed. In case of electric shot firing, the shot holes shall be examined after firing and in case of misfire no person shall be allowed to approach the blasting site for at least 5 min. In case of shot firing with safety fuse, utmost care shall be taken to count the number to ensure that all the shots have fired and in the event of misfire, no person shall be allowed to approach the blasting site for at least 30 min. In any case, a careful inspection for the remaining un-detonated explosive shall be made after firing the shots. All misfired shot holes shall be cross-marked. No other person than those duly authorized shall approach the holes until one of the following operations has been performed in respect of each of the misfired holes:
- f) If the misfire is due to a faulty cable or faulty electrical connection the defect shall be remedied and the shot fired.
- g) The stemming shall be floated out by use of water or air jet from hose until the hole has been opened to within 60 cm of the charge, whereupon water will be siphoned or pumped out, then a fresh new charge placed and duly detonated. Or
- h) A careful search shall be made of unexploded material in the debris of the charge.
- i) If a shift charge is unavoidable, the person in-charge of one shift before leaving the work shall inform the person relieving him for the next shift of any cases misfired and shall point out their position duly cross marked and also state clearly what action has to be taken in the matter.

Note: The rules are made considering statutory provisions and other National/International standards. However, if any statutory provision overruling these laws is made, the statutory provisions shall overrule the CIL Rules.

11.0 SAFETY IN EXCAVATION & TUNNELING WORK

A. SAFETY IN EXCAVATION

11.1 GENERAL PROVISIONS

- j) Before undertaking any activity, the soil shall be tested and in case of availability of any explosive gas, necessary arrangements must be made to remove/dilute such gases and in case they are found to be toxic or poisonous, the workplace must be purged and continuous ventilation maintaining the contamination below the permissible level ensured;
- k) The position of underground installations such as sewers, water pipes and electrical cables shall be verified and in case of their existence, they must be isolated;
- l) If they cannot be isolated or removed or shutdown, they shall be fenced, hung up or otherwise protected. On every part likely to be visited by persons or where transport vehicles ply, the area shall be suitably fenced, guarded or barricaded to prevent fall of persons, vehicles or livestock into the excavated area;
- m) Warning signs shall be erected and the in the night hours the area shall be illuminated to warn pedestrians and vehicular traffic;
- n) Arrangements shall be made to prevent external vibrations due to rail/road traffic;
- o) Blasting shall be carried out in accordance with the norms applicable in this regard. Special care shall be taken to control the impact of vibrations/tremor caused by blasting to protect excavations from cave-ins;
- p) Arrangements shall be made to save other buildings/structures in the affected zone or in the vicinity of the area of excavation, from collapse;

11.2 SHORING AND TIMBERING

- a) Site of excavations, where workers are exposed to danger from moving ground, shall be made safe by maintaining due slope not exceeding the angle of repose of different types of soil or otherwise by shoring, portable shields or other effective means;
- b) All trenches in the soil, other than rock or hard compact soil more than 1.5 m deep into which men enter, shall be securely shored and timbered under the supervision of a competent person and only the trained workers shall be allowed to substantially alter or dismantle the shoring or timbering;
- c) All struts, braces and walls in excavation shall be adequately secured so as to prevent their accidental displacement;
- d) In all excavations in soft or fissured rock or hard soil exceeding 2 m in depth, except those which are sloped to within 1.5 m of the bottom into which men enter, shall be securely shored and timbered;
- e) Where the sides of the excavations are sloped as outlined above, but not within the 1.5 m of the bottom, vertical sides shall be shored and the shoring shall extend at least 30 cm above the vertical sides. When open spaced sheathing is used, a toe-board shall be provided to prevent material rolling down the slope and falling into the excavated.

11.3 SHEATHING

- a) The sheathing should be placed against the side of the trench so that length of each piece of sheathing is vertical. It should be held securely in place against the wales by ensuring that sheathing is kept firmly pressed against the wall of the trench. Where the trench excavated is loose, sandy or soft soil or soil which has been previously excavated or soil which is under hydrostatic pressure, each piece of sheathing shall be driven into the bottom of the trench so as to firmly hold it in place;
- b) Where two or more pieces of sheathing are used one above another, the sheathing shall be so arranged that the lower pieces of sheathing shall overlap the lowest wales supporting the piece of sheathing next above it. These pieces of sheathing shall be firmly driven into the soil and securely supported by wales and struts, as the trench is made deeper.

11.4 WALES

The wales shall be parallel to the bottom or the proposed bottom of the trench. Each wale shall be supported on cleats spiked to the sheathing or by posts set on the wales next below it and in the case of the lowest wale on the bottom of the trench itself. Where necessary, wedges may be provided between a wale and the sheathing it supports so that roughly uniformity is given to all individual pieces of sheathing.

11.5 STRUTS

- a) Struts shall be horizontal and at right angles to the wales or sheathing supported thereby. Struts shall be cut to the proper length required to fit in tightly between the wales. Where necessary, the struts shall be held securely in place by wedges, driven between the struts and the wales;

- b) Struts shall be placed on cleats spiked or bolted to the posts supporting the Wales.

11.6 LOOSE SITE MATERIALS:

- a) No loose material shall be kept very close to the excavation creating possibility of its fall into the excavated area. A safe distance of at least 1 m shall be maintained.

11.7 PLANT & MACHINERY:

Movement of vehicles and heavy equipment shall be kept at a distance least equal to the depth of the excavation or at least 6 m for excavation deeper than 6 m and the workers shall be provided with proper tools.

11.8 MEANS OF ACCESS

- a) For trenches deeper than 1.5 m, safe means of access and egress shall be provided at intervals of every 15 m. Where it is not possible to provide safe means of access and egress as above, ladders shall extend from the bottom of the trench to at least 90 cm above the ground;
- b) Walkways, runways and sidewalks shall be kept clear of excavated materials or other obstructions and no side walls shall be undermined-undercut unless it is capable of carrying a minimum live load of 125 lbs per square feet;
- c) If planks are used for raising walkways, runways or sidewalks, they should be parallel to the length of the walk and fastened together against displacement;
- d) Lone worker shall not be allowed to work in the excavated area.

11.9 INSPECTIONS:

A competent person shall make inspections every day and necessary measures shall be taken to safeguard against possible cave-ins or slide or collapse of the excavations.

11.10 NOTIFICATION OF INTENTION TO CARRY OUT EXCAVATION AND TUNNELING WORK

- a) Within thirty days, prior to the commencement of such excavation or tunneling work, the contractor shall inform in writing the detailed layout plans, method of construction and schedule of such excavation or tunneling work to the Engineer in-charge of SECL;
- b) In case compressed air is used in such excavation or tunneling work or any work incidental to or required for such excavation or tunneling work, the technical details and drawings of all man-locks and medical-locks together with names and addresses of all construction medical officers duly qualified and so appointed by such contractor for the purpose of such excavation or tunneling work shall be sent to the Engineer in-charge.

11.11 PROJECT ENGINEER

- a) The contractor undertaking any excavation or tunneling work shall appoint a Project Engineer for safe operation of such projects;
- b) Such Project Engineer shall exercise overall control of the operations and the activities at such project and be responsible for carrying out the activities safely.

11.12 RESPONSIBLE PERSON

- a) The contractor undertaking excavation or tunneling work at construction site of a building or other construction work shall appoint a responsible person for safe operation of such excavation or tunneling work;

- b) The name and addresses of such responsible persons shall be forwarded to the Engineer in- charge;
- c) Duties and responsibilities of the responsible person referred to above person shall include
- d) To carry out smoothly such excavation or tunneling work;
- e) To inspect and rectify any hazardous situation relating to such excavation or tunneling work;
- f) To take remedial measures to avoid any unsafe practice or conditions relating to such excavation or tunneling work.

11.13 WARNING SIGNS AND NOTICES

- a) Suitable warning signs or notices, required for the safety of building workers carrying out the work of an excavation or tunneling, shall be displayed or erected at conspicuous places in Hindi and in language understood by the majority of such building workers at such excavation or tunneling work;
- b) Such warning signs and notices with regard to compressed air working shall include:
- c) The danger involved in such compressed air work;
- d) Fire and explosion hazards;
- e) The emergency procedures for rescue from such danger or hazards.

11.14 REGISTER OF EMPLOYMENT

- a) The contractor shall ensure that at a construction site of a building or other construction work where an excavation or tunneling work is being carried

on, a register of employment of building workers carrying out such excavation or tunneling work is maintained and produced on demand;

- b) Periods of work of such excavation or tunneling work shall be maintained in a register on day- to-day basis and such register shall be produced on demand.

11.15 ILLUMINATION

- a) All contractors carrying out excavation or tunneling work at a construction site of a building or other construction work shall provide for emergency generators on such construction site to ensure adequate illumination at all work places where such excavation or tunneling work is being carried out;
- b) In case of power failure, all workplaces where excavation or tunneling works are carried out shall be adequately illuminated

11.16 PNEUMATIC TOOLS:

Supply lines to pneumatic tools used within a tunnel are fitted with water trap or safety chain or safety wire, as the case may be.

11.17 STABILITY OF STRUCTURE DURING GENERAL EXCAVATION & TUNNELING:

- a) The contractor shall ensure that where there is any doubt as to the stability of any structure adjoining the workplace or other areas to be excavated or where tunneling work is to be carried out –
 - The Project Engineer shall arrange for measures like underpinning, sheet piling, shoring, bracing or other similar means to support such structure and to prevent injury to any building worker working adjacent to such structure or damage to property or equipment adjacent to such structure;

- Where any building worker engaged in excavation is exposed to hazard of falling or sliding material or article from any bank or side of such excavation which is more than 1.5 m above his footing, such worker shall be protected by adequate piling and bracing against such bank or side;
- b) The excavation and its vicinity shall be checked by a responsible person after every rain, storm or other occurrences carrying hazards and in case a hazard is noticed at such checking, adequate protection against slides and cave-in to prevent such hazard shall be provided;
- c) Temporary sheet piling installed for the construction of a retaining wall after excavation shall not be removed, except on the advice of the responsible person after an inspection carried out by such responsible person;
- d) Where banks of an excavation are undercut, adequate shoring shall be provided to support the material or article overhanging such bank;
- e) Excavated material shall not be stored at least 0.5 m from the edge of an open excavation or trench and the banks of such excavation or trench shall be stripped of loose rocks and other materials which may slide, roll or fall upon a building worker working below such bank;
- f) Adequate and suitable warning signs shall be put-up at conspicuous places at the excavation work to avoid any person falling into the excavations or trenches;
- g) The responsible person shall ensure at the excavation that no building worker is permitted to work where such building worker may be struck or endangered by the excavation machinery or material or article used in such excavation.

11.18 SAFE ACCESS AND EGRESS:

Ladders, staircases or ramps are provided, as the case may be, for safe access to and egress from excavation where the depth of such excavation exceeds one point 1.5 m and such ladders, staircases or ramps comply with the relevant national standards.

11.19 TRENCHES

- a) A trench or excavation shall be protected against falling of a person by suitable measures if the depth of such trench or excavation exceeds 1.5 m and such protection shall be an improved protection in accordance with the design and drawing of a Professional Engineer, where such depth exceeds 4 m;
- b) Where the depth of a trench requires two lengths of sheet piling, one above the other, the lower piling shall be set inside the bottom strings or wales of the upper piling and such sheet piling shall be driven down and braced as the excavation continues;
- c) All metal sheet piles used in excavation or a trench shall be welded end-to-end and secured by other similar means.

11.20 POSITIONING AND USE OF MACHINERY:

- a) Any machinery used in excavation and tunneling work shall be positioned and operated in such a way that such machinery will not endanger the operator of such machinery or any other person in the vicinity.

11.21 BREATHING APPARATUS:

- a) Suitable breathing apparatus shall be provided to a building worker while working in compressed air environment for his use at excavation or tunneling work and such breathing apparatus shall be maintained in good working condition at all times.

11.22 SAFETY MEASURES FOR TUNNELING OPERATIONS

- a) Where there is a danger of falling or sliding of material from the roof face or wall of a tunnel, adequate measures such as shoring, supporting by means of rock bolts, segments or steel sets shall be taken for the safety of building workers;
- b) The excavated areas shall be made safe by use of suitably designed and installed steel sets, rock bolts or similar other safe means;
- c) The responsible person shall examine and inspect the workplaces in a tunnel before the commencement of work in such tunnel and at regular intervals thereafter to ensure safety of the building workers in such tunnel;
- d) The portal areas of a tunnel with loose soil or rock, likely to cause injury to a person shall be adequately protected with supports.

11.23 SURROUNDINGS OF A SHAFT

- a) Surroundings of a shaft used in excavation or tunnel work shall be protected from being washed away by construction of sufficient height;
- b) Where a building worker is required to enter a shaft at an excavation or tunneling work, safe means of access shall be provided for such entry;
- c) Every shaft at excavation or tunneling work shall be provided with a steel casing, concrete piping, timber shoring or other materials of adequate strength for the safety of building workers working in such shaft;
- d) Such casing and bracing shall be provided to shafts at an excavation or tunneling work according to the appropriate design for such casing and bracing;

- e) A reinforced concrete raft and beam shall be provided around the opening of a shaft at an excavation or tunneling work if the ground surrounding such opening is unstable or unsafe.

11.24 **LIFT FOR SHAFT:**

Lift shall be provided for transport of building workers and materials or articles at an excavation or tunneling work required to descend more than 50 m in a shaft.

11.25 **MEANS OF COMMUNICATION**

- a) Reliable and effective means of communication such as telephone or walkie-talkie shall be provided and maintained in working order for arranging better and effective communication at an excavation or tunneling work at the following locations, namely:

- Working chamber of an excavation;
- Intervals of hundred meters along the tunnel;
- Working chamber side of a man lock near the door of such man lock;
- Interior or each chamber of a man lock;
- Location conspicuous lock attendant's situation;
- A compressor plant;
- A first-aid station, and
- Outside the portal or the top of a shaft;

Such number of bells and whistles shall be made available at all times at the locations as are necessary for the safety of persons at such locations.

11.26 SIGNALS:

- a) The standard audio or video signals shall be used in excavation or tunneling work and conspicuously located or displayed near entrance to the workplace and in such other locations as may be necessary to bring such signals to notice of all building workers employed in such excavation or tunneling work.

11.27 CLEARANCES

The minimum lateral clearances of 0.5 m shall be maintained between any part of a vehicle and any fixture or any equipment used in an excavation or tunneling work after allowing the throw or swing of such fixture or equipment;

The overhead clearance for a locomotive drive at excavation or tunneling work shall not be less than 1.20 m above the seat of such driver and not less than 2 m above the platform where such driver stands or of any other dimension in accordance with the approved standard.

11.28 SHELTERS:

The adequate number of shelters for the safeguard of the building workers are provided where, in the course of working, they are liable to be struck by a moving vehicle or other material handling equipment in a tunnel.

11.29 USE OF INTERNAL COMBUSTION ENGINE:

No internal combustion engine shall be used underground in excavation or tunneling work unless such engine is so constructed that the air entering the engine gets cleared before entry and the engine emits no fumes or sparks.

11.30 INFLAMMABLE OILS:

Inflammable oils with the flash point below the working temperature that is likely to be encountered in a tunnel shall not be used in excavation or tunneling work.

11.31 COUPLING AND HOSES:

All high-pressure hydraulic hoses and couplings shall be adequately protected against any possible damage in excavation or tunneling work.

11.32 HOSE INSTALLATION:

All hydraulic lines and plants working at a temperature exceeding 750 c shall be protected by adequate insulation or otherwise against accidental human contact in excavation or tunneling work.

11.33 FIRE RESISTANT HOSES:

No fire hydraulic hoses other than fire resistant hydraulic hoses are used when hydraulically activated machinery and equipment are employed in tunnels.

11.34 FLAMEPROOF EQUIPMENT:

Only flameproof equipment of appropriate type as per approved standards shall be used where there is a danger of flammable or explosive atmosphere being prevalent inside the tunnel.

11.35 STORING OF OIL AND FUEL UNDERGROUND:

All oils, greases or fuels stored underground in excavation or tunneling work shall be kept in tightly sealed containers and in fire resistant areas at safe distances away from explosive and other flammable chemical and appropriate flameproof installation shall be used in such storage areas.

11.36 USE OF GASES UNDERGROUND

- a) Petrol or liquefied petroleum gas or any other flammable substances shall not be used or stored inside the tunnel except with the prior approval of the Project Engineer;
- b) After the use of the petroleum or liquefied petroleum gas, or highly inflammable substances, all remaining petroleum or liquefied petroleum gas or highly inflammable substances shall be removed immediately from such tunnel;
- c) No oxy-acetylene gas shall be used in a compressed air environment in excavation or tunneling work.

11.37 WATER FOR FIRE FIGHTING

- a) Adequate number of water outlets shall be provided on excavation or tunneling work and readily made accessible throughout the tunnel for fire fighting purposes and such water outlets shall be maintained for effective fire lighting;
- b) All air locks shall be equipped with fire fighting facilities at excavation or tunneling work;
- c) An audible fire alarm shall be provided to warn the building workers whenever a fire breaks out on an excavation or tunneling work;
- d) Adequate number and types of fire extinguishers, in accordance with relevant national standards, shall be provided and made readily available to fight any outbreak of fire at an excavation or tunneling work;
- e) Fire extinguishers with vaporizing liquids and high pressure carbon dioxide shall not be used in tunnels or other confined spaces;
- f) The instructions regarding steps to be followed to fight outbreak of fire, at an excavation or tunneling work, written in Hindi or local language

understood by the majority of the building workers employed on such excavation or tunneling work, shall be displayed at conspicuous and vulnerable places of such excavation or tunneling work.

11.38 **FLOODING**

- a) Water tight bulkhead doors shall be installed at the entrance of a tunnel to prevent flooding during a tunneling work where more than one tunnel is driven from a shaft;
- b) All necessary measures shall be taken to ensure that no building worker is trapped in any isolated section of a tunnel when any bulkhead door of such tunnel is closed;
- c) Where there is likelihood of flooding or water rushing into a tunnel during a tunneling work, arrangements shall be made for immediate starting of water pumps to take out water of such flooding or water rushing and for giving alert signals to the building workers and other persons to keep them away from danger.
- d) Airtight steel curtains shall be provided in areas liable to flooding at tunneling work and in case of descending tunnels, such curtains shall be provided in the top half of such tunnels to ensure the retention of pockets of air for rescue purpose.

11.39 **REST SHELTERS**

- a) Where building workers employed in a compressed air environment in a tunneling work are required to remain at the work site for one hour or more after de-compression from pressure exceeding one bar, adequate and suitable facilities shall be provided for such building workers to rest;

- b) Every man-lock, medical-lock and any other facility inside these locks in a tunneling work shall be maintained in a clean state and in good repairs;
- c) A first-aid room shall be provided and readily available at a construction site of a tunneling work;
- d) Each man-lock attendant at the station shall be provided with a first-aid box.

11.40 PERMISSIBLE LIMIT OF EXPOSURE OF CHEMICALS

- a) The working environment in a tunnel or a shaft in which building workers are employed shall not contain any of the hazardous substances in concentrations beyond the permissible limits;
- b) The responsible person referred to shall conduct necessary test before the commencement of a tunneling work for the day and at suitable intervals as fixed by the Engineer in-charge, to ensure that the permissible limits of exposure are not exceeded and a record of such test shall be maintained and made available for inspection.

11.41 VENTILATION:

All working areas in a free air tunnel shall be provided with the approved ventilation system and the fresh air supplied in such tunnel shall not be less than 6 m^3 per minute for each building worker employed underground in such tunnel and the free air-flow movement inside such tunnel not less than 9 m^3 per minute.

11.42 AIR SUPPLY INTAKE POINT:

The air intake points for all air compression shall be located at places where such intake air does not get contaminated with dust, fumes, vapor and exhaust gases or other contaminants.

11.43 EMERGENCY GENERATORS

Every compressed air system in a tunnel shall be provided with emergency power supply system for maintaining continued supply of compressed air in such compressed air system, which shall be capable of operating air compressor and ancillary systems of such compressed air system;

The emergency power supply system shall be maintained and made readily available at all times.

11.44 AIR MAINS:

Every air-main supplying air to the working chamber, man-lock or medical-lock used at an excavation or tunneling work shall be protected against accidental damage and where it is not practicable to provide such protection, a stand-by air-main shall be provided.

11.45 BULKHEAD AND AIR LOCKS

- a) A bulk head or air tight diaphragms retaining compressed air, when used within a tunnel or a shaft, shall be constructed to withstand the maximum pressure at 1.25 the maximum working pressure of such bulk head or diaphragm and such bulk head or diaphragm shall be tested before its each use by a responsible person to ensure that such bulk head or diaphragm is in proper working order;
- b) Such responsible person shall keep the record of each test and such record shall be produced for inspection.
- c) The bulk head or diaphragm shall be made of sound material of adequate strength, which shall be able to withstand the maximum pressure on which they are subjected to at any time of their use;
- d) A bulkhead anchorage and air lock shall be tested at its work place at an excavation or tunneling work immediately after their installation at such place.

11.46 DIAPHRAGM:

All diaphragms, which are in the form of horizontal decks across a shaft used at excavation or tunneling work, shall be securely anchored.

11.47 PORTABLE ELECTRICAL HAND TOOLS:

All portable electrical hand tools and inspection lamps used underground or in a confined space shall be operated at a voltage not exceeding 24 V.

11.48 CIRCUIT BREAKER

Adequate numbers of differential ground fault circuit breakers shall be installed for every electrical distribution system and its sub-systems used at an excavation or tunneling;

Work and the sensitivity of each of circuit breaker shall be adjusted in accordance with the requirement set out in accordance with the approved standards;

No semi-enclosed fuse unit shall be used in underground place.

11.49 TRANSFORMER:

The contractor shall ensure no transformer is used in any section of a tunnel under compressed air unless such transformer is of the dry type and conforms to the approved standards.

11.50 LIVE WIRES:

There shall be no exposed live wire in working areas at an excavation or tunneling work which are accessible to building workers other than those authorized to work on such live lines.

11.51 WELDING SETS:

All welding sets used in a tunnel shall be of adequate capacity and of suitable type, duly approved.

11.52 QUALITY AND QUANTITY

Every working chamber at an excavation or tunneling work where compressed air is used, the supply of such air shall be maintained at not less than 0.3 m³ per minute per person working therein;

A reserve supply of compressed air shall be made available at all times for man-locks and medical locks used at a tunneling work;

The air supplied in a compressed air environment at a tunneling work shall be, as far as practicable, free from contaminants, namely, dust, fumes and other toxic substances.

11.53 WORKING TEMPERATURE:

The temperature in any working chamber at an excavation or tunneling work where building workers are employed shall not exceed 29⁰ c and the arrangement shall be maintained for kipping records in which the temperatures measured by dry bulb and wet bulb inside such working chamber once in every hour and for producing such records for inspection on demand.

11.54 MAN-LOCKS AND WORKING IN COMPRESSED AIR ENVIRONMENT

- a) Man-locks used at a tunneling work shall be of adequate strength, made of sound material and designed to withstand any pressure, internal or external, to which it may be subjected in the normal use or in an emergency;
- b) Doors of man-locks at an excavation or tunneling work shall be made of steel and used at a tunneling work for keeping the work airtight and devices shall be provided for sealing the doors when such locks are under pressure. The anchorage of a man-lock used at tunneling work shall have adequate strength to withstand the pressure exerted by air on the man-lock. There shall be adequate room available for the workers for working in the man-locks;

- c) Where work is carried out in any compressed air tunnel, a Man-lock in accordance with the approved standards shall be used;
- d) Where a man-lock is used, safety Instructions in Hindi and in local language understood by majority of building workers employed there, shall be displayed at conspicuous places;
- e) Except in an emergency, compression and de-compression operations shall be carried out in a man-lock and in an emergency any material-lock may be used;
- f) A record of compression and de-compression shall be kept in writing and produced for inspection on demand;
- g) Material lock shall be used with the permission of the Engineer in-charge where it is impracticable to install both the man-lock and the material-lock at;
- h) The man-lock at tunneling work shall not be used for any purpose other than compression or de-compression of building workers;
- i) No de-canting of building workers at tunneling work shall be carried
- j) out without prior approval of the Engineer in-charge except in an emergency;
- k) In case a building worker collapses or is taken ill during his de-compression in a man-lock, the lock attendant of such man-lock shall raise the pressure to a level equal to the maximum pressure which that building worker was exposed to in the working chamber prior to such de-compression and such lock attendant shall immediately report the matter relating to such collapse to the medical lock attendant and medical officer on duty;
- l) A building worker who had previously received training with a trained building worker to work in a compressed air environment at tunneling work

- shall be employed to work independently in such a compressed air environment;
- m) A building worker who had undergone three de-compressions from a pressure exceeding one bar in a period of eight hours at tunneling work shall not be allowed to enter a compressed air environment except for the purpose of carrying out rescue work;
 - n) A building worker employed in a compressed air environment for a period of eight hours in a day at tunneling work shall not be employed again in such environment unless he has spent not less than twelve consecutive hours of rest at atmospheric pressure;
 - o) No building worker shall be engaged in a compressed air environment at a pressure, which exceeds three bars at a tunneling work unless prior permission, in writing, has been obtained from the Engineer in-charge;
 - p) No building worker shall be employed in a compressed air environment for more than fourteen consecutive days in a month;
 - q) A register of employment of all building workers in compressed air environment shall be maintained;
 - r) An identification badge shall be supplied to a building worker employed in compressed air environment;
 - s) The badge of a building worker shall contain particulars of his name, location of the medical-lock allotted to him for work, the telephone number of the Construction Medical Officer concerned for his treatment and the instructions in case of his illness of unknown and doubtful causes;
 - t) Record of all identification badges supplied to building shall be kept in a register;

- u) Every building worker whose name appears in the register shall wear the badge supplied to him at all times during his duty hours;
- v) Suitable warning signs shall be displayed in the compressed air for the prohibition of the following, namely:
 - w) Use of alcoholic drinks;
 - x) Use and carrying of lighters, matches or other sources of ignition;
 - y) Smoking; and
 - z) No entry to person who has consumed alcoholic drink

11.55 SAFETY INSTRUCTION:

All building workers employed in compressed air environment at tunneling work shall follow the instructions issued for their safety in the course of such employment.

11.56 MEDICAL-LOCK

- a) A suitably constructed medical lock shall be maintained at tunneling work where building workers are employed in a working chamber at a pressure exceeding one bar;
- b) Where more than one hundred building workers are employed in a compressed air working environment exceeding one bar at tunneling work, one medical-lock is provided for every one hundred building workers or part thereof and such medical lock shall be situated as near as possible to the main-lock used at such tunneling work.

12.0 SAFETY IN PILING WORK

12.1 GENERAL PROVISION

- a) All pile driving equipment shall be of good design and sound construction, taking into account the ergonomic principles and properly maintained;
- b) A pile driver shall be firmly supported on a heavy timber sill, concrete bed or other secured foundation;
- c) In case a pile driver is required to be erected in dangerous proximity to an electrical conductor, all necessary precautions shall be taken to ensure safety;
- d) The hoses of steam and air hammer shall be securely lashed to such hammer so as to prevent them from whipping in case of connection or break;
- e) Adequate precaution shall be taken to prevent the pile driver from over turning and hammer from missing the pile;
- f) A responsible person for inspecting pile-driving equipment shall inspect such equipment before taking it into use and takes all appropriate measures as required for the safety of building workers before commencing piling work by such equipment;
- g) Where there is any question of stability of a structure for its adjoining areas to be piled, such structure shall be supported, where necessary, by underpinning, sheet piling, shoring, and bracing or by other means to ensure safety and stability of such structure and to prevent injury to any person.

12.2 PROTECTION OF OPERATOR:

The operator of every pile driving equipment shall be protected from falling objects, steam, cinders or water by substantially covering or otherwise or by other means.

12.3 INSTRUCTION TO AND SUPERVISION OF BUILDING WORKERS WORKING ON PILE-DRIVING EQUIPMENT:

Every building worker working on a pile driving equipment shall be given instructions regarding safe work procedure to be followed in piling operation and shall be supervised by a responsible person throughout such work.

12.4 ENTRY OF UNAUTHORIZED PERSON:

The contractor shall ensure at a construction site of a buildings or other construction work that all piling areas where pile-driving equipment is in use are effectively cordoned off to prevent entry of unauthorized persons.

12.5 INSPECTION AND MAINTENANCE OF PILE DRIVING EQUIPMENT

- a) Pile-driving equipment shall not be taken into use until it has been inspected by a responsible person and found to be safe for such use;
- b) A responsible person for such inspection at suitable intervals to ensure safety to the building worker working on such equipment shall inspect pile driving equipment in use;
- c) All pile lines and pulley blocks shall be inspected by a responsible person before the beginning of each shift of piling operations.

12.6 OPERATION OF PILE-DRIVING EQUIPMENT

- a) Only experienced and trained building worker shall operate pile driving so as to avoid any probable danger from such operation;
- b) Pile-driving operations shall be governed generally prevalent and accepted signals so as to prevent any probable danger from such operations;

- c) Every building worker employed in pile driving operation or in the vicinity of such pile driving operation shall wear ear protection and safety helmet or hardhat and safety shoes;
- d) Piles shall be prepared at a distance, at least equal to twice the length of the longest pile, from the place of pile-driving operations;
- e) When a pile driver is not in use, the hammer of such pile driver shall be blocked at the bottom of the heads of such pile driver.

12.7 WORKING PLATFORM ON PILING FRAMES:

Where a structural tower supports the lead of a pile driver, leads at which it is necessary for the building workers to work and such platforms except on the hammer of such pile driver or lead sides of such platform and where such platforms cannot be provided with such railing and toe boards, a safety belt shall be provided to each such building worker.

12.8 PILE TESTING

- a) The testing of pile shall be conducted under the supervision of a responsible person for such testing;
- b) All practicable measures like displaying of warning notices, barricading the area and other similar measures shall be taken to protect the area where the pile testing is carried out;
- c) Entry to a pile testing area shall be prohibited to general public to ensure safety.

12.9 PILING, SHORING AND BRACING

- a) Planks used for sheet piling in excavation or tunneling work shall be of sound material with adequate strength;
- b) Shores and braces used in excavation or tunneling work shall be of adequate dimensions and so placed as to be effective for their intended purposes;
- c) Earth supported shores or braces used in excavation or tunneling work shall bear against a footing of sufficient area and stability to prevent the shifting of such shores or braces.

13.0 SAFETY IN THE ERECTION, USE AND DISMANTLING OF SCAFFOLDS

13.1 SCAFFOLD CONSTRUCTION

- a) Every scaffold and every component thereof shall be of adequate construction, made of sound material and free from defects and safe for the purposes for which it is intended for use;
- b) In case bamboo is used for scaffolding, such bamboo shall be of suitable quality, good condition, free from protruding knots and stripped off to avoid any injury to building workers during handling such bamboo;
- c) All metal scaffolds used in building or other construction work shall conform to the approved standards;

13.2 SUPERVISION BY A RESPONSIBLE PERSON:

No scaffold shall be erected, added, altered or dismantled except under the supervision of a responsible person.

13.3 Maintenance

- a) The scaffold used in building or other construction work shall be maintained in good repairs and the measures taken against its accidental displacement or any other hazard;
- b) No scaffold or part thereof shall be partly dismantled and allowed to remain in such a condition unless –
- c) The stability or safety of the remaining portion of such scaffold has been ensured by a responsible person for the safety of such scaffolds;
- d) In case the remaining part of such scaffold cannot be used by the building workers, necessary warning notice written in Hindi and in a language

understood by the majority of the building workers that such scaffold is unfit for use, shall be displayed at the place where such scaffold is erected.

13.4 STANDARDS, LEDGERS, PUTLOGS

- a) Standards of a scaffold shall be plumb, where practicable, fixed sufficiently close together to secure the stability of such scaffold having regard to all the possible working situations and conditions for the intended use of such scaffold, spaced, as close as practicable, to ensure safety and stability of such scaffold;
- b) Adequate measures are taken to, prevent displacement of a standard of a scaffold either by providing sole plate or a base plate, as necessary;
- c) Ledgers of metal scaffold are placed at vertical intervals with due regard to safety and stability of such scaffold;
- d) Bamboo ledgers are kept as nearly as possible and are placed and fastened to the standards of a scaffold with due regard to the stability of such scaffold.

13.5 WORKING PLATFORM

- a) Working platform shall be provided around the face or edge of a building adjoining at every upper most permanent floor of such building under construction and at any level where construction work of such building is carried out;
- b) A platform shall be designed to suit the number of building workers to be employed on each bay of a scaffold work on such platform and the materials or articles and tools to be carried with them in such bay;
- c) The safe working load and the number of building workers to be employed in each bay of a scaffold shall be displayed for the information of all the building workers employed at such construction site.

13.6 BOARD, PLANK AND DECKING

- a) Board, plank and decking used in the construction of a working platform shall be of uniform size and strength and shall be capable of supporting the load and number of building workers keeping in view the safety of such building workers;
- b) Metal decking, which forms part of a working platform, shall be provided with non-skid surface;
- c) No board or plank which forms the working platform shall be projected beyond its end support unless it is effectively prevented from tripping or lifting and board, plank or decking shall be fastened and secured;
- d) At any one time, not more than two working platforms per bay, shall be used to support building workers or materials or articles at such bay;
- e) Adequate measures shall be taken to prevent injury which may be caused by falling material and objects by using safety nets or other suitable means;
- f) Concrete, other debris or materials shall not be allowed to accumulate at any platform on a scaffold;
- g) Where a work is to be done at the end of a wall, working platform at such workplace shall be faced or, wherever practicable, at least 0.6 m beyond the end of such wall.

13.7 REPAIR OF DAMAGED SCAFFOLD

- a) No building worker shall be permitted to work on a scaffold that has been damaged or weakened unless adequate safety measures have been taken to ensure the safety of such building worker;

- b) Necessary warning signs shall be displayed at such places where repairs of scaffold are undertaken.

13.8 OPENING

- a) There shall be no opening in any working platform except for allowing access to such working platform;
- b) Wherever opening on a platform is unavoidable, necessary measures for protection against falling of objects or building workers from such platform shall be taken by providing suitable safety nets, belts or any other similar means;
- c) Access from one working platform to another platform on a scaffold, if required, shall be provided with suitable and safe ladder for the use of building workers working on such platforms;
- d) Every opening or shaft in the floor shall be provided with suitable means to protect the fall of a person or material by providing suitable fencing or railing of height not less than 900 mm.

13.9 GUARDRAILS:

Every side of a working platform from which a person is liable to fall shall be provided with suitable and safe guardrails and toe board of adequate strength to prevent fall of any building worker, material or tools from such platform.

13.10 SCAFFOLD USED BY BUILDING WORKERS OF DIFFERENT EMPLOYERS

- a) Where a scaffold or a part of a scaffold is used, which has previously been used by another employer for his building workers, such scaffold or part thereof shall be used only after its inspection and examination by a

responsible person for ensuring that such scaffold or part thereof is safe and fit for such use;

- b) If any rectification, alteration or modification in a scaffold or part thereof, needed to suit its use, shall be made in consultation with the responsible person.

13.11 PROTECTION AGAINST ELECTRIC POWER LINE:

The contractor shall ensure that all necessary and practical measures for protection are taken to prevent any building worker, working on a scaffold, from coming into contact with the electric wires or dangerous equipment.

13.12 SCREENING NET AND WIRE NETS:

Where a scaffold is erected in an area where the construction activities may pose hazards to pedestrians or vehicular traffic nearby from the falling of objects, wire nets or screening nets shall be used to envelope such scaffold.

13.13 TOWER SCAFFOLD

- a) The height of every tower scaffold used in building or other construction work shall not be more than eight times the lesser to the base dimension of such scaffold;
- b) A tower scaffold shall be lashed to a building or a fixed structure before being used by the building workers;
- c) Any tower scaffold which can be moved or castered shall be –
- Constructed with due regard to the stability and, if necessary, adequately weighted at the base;
 - Used only on plain and even surface; and

- Has casters provided with positive locking devices to hold such scaffold in position;
- d) No building worker shall remain on board scaffold or leave behind tools and material when it is being shifted from one position to another position.

13.14 GEAR FOR SUSPENSION OF SCAFFOLD

- a) Chains, ropes or lifting gears used for suspension of a scaffold shall be of adequate strength, made of sound material and suitable for the purpose of their use and maintained in good repairs;
- b) Chains, wires, ropes or metal tubes used for the suspension of a scaffold shall be:
- Properly and securely fastened to every anchorage point and to the scaffold ledgers of other main supporting members used for the support of such scaffold; and
 - So positioned as to ensure stability of the scaffold.

13.15 TRESTLE SCAFFOLD AND CANTILEVER SCAFFOLD

- a) No trestle scaffold shall be constructed with more than three tiers or if its working platform is more than 4.5 m above the ground or floor or other surface upon which such scaffold is erected;
- b) Trestle scaffold shall be designed by professional engineer and shall have the approval of the Engineer in-charge before being taken into use.
- c) No trestle scaffold shall be erected on a suspended scaffold;

- d) No cantilever or jib scaffold shall be used unless it is adequately supported, fixed and anchored on opposite side of its support and have out triggers of adequate length and, where necessary sufficiently, supported and braced to ensure safety and stability of such scaffold;
- e) No working platform resting on bearers let into a wall at one end and without other support shall be used unless such bearers are of adequate strength, braced through the wall and securely fastened on the other side.

13.16 SCAFFOLD SUPPORTED BY BUILDING

- a) No part of a building shall be used as support or part of a scaffold unless such part of the building is made of sufficient strength and made of sound material to afford safe support;
- b) Overhanging eaves gutters shall not be used for supporting scaffold;
- c) Suspended scaffold shall be made of in accordance with the approved standards before being used by the building workers.

13.17 USE OF WINCHES AND CLIMBERS FOR SUSPENDED SCAFFOLD

- a) No scaffold shall be raised or lowered by winches or climbers unless such scaffold is made of sound material, adequate strength and has been tested and certified safe for use of winches or climber by a competent person before being taken into use;
- b) All suspended scaffolds counter-balanced by counter weights shall be of approved types before being taken into use for building or other construction work;
- c) The working platform of a suspended scaffold shall be securely fastened to the building or structure as to be safe and to prevent such platform from swing;

- d) The safe working load that a suspended scaffold can carry, shall be displayed where such scaffold is being used.

13.18 SAFETY DEVICES FOR SUSPENDED SCAFFOLD

- a) Every suspended scaffold, raised or lowered by the winches or climbers, shall be provided at each of its suspension point with a safety rope with automatic safety device mounted on each of such rope so that such safety rope with such automatic safety device support the platform of such scaffold in the event of failure of the primary suspension wire ropes, winches, climbers or any part of the mechanism used for raising or lowering such suspended scaffold;
- b) Provided that the clause (a) shall not apply -
- Where the platform of such scaffold is supported at two independent suspension wire rope at or near each end of such platform so that in the event of failure of one of such suspension wire rope, the other wire rope is capable of sustaining the weights of such platform and its load and prevent it from tilting; or
 - Where a system is incorporated which operates automatically to support the platform of such scaffold and its load in the event of failure of the primary suspension wire rope of such scaffold.

14.0 SAFETY IN THE ERECTION OF STRUCTURAL FRAME & FORMWORK

14.1 GENERAL PROVISION

- a) The trained building worker under the direct supervision of a person, responsible for structural frame and formwork, shall be employed for erection of such structural frame or formwork, dismantling of building and structure and performance of and engineering work formwork, false work and shoring work;
- b) Adequate measures shall be taken to guard against hazards arising from any temporary state of weakness or unsuitability of a structure.

14.2 FORMWORK, FALSE WORK AND SHORING

- a) Formwork and false work shall be so designed, constructed and maintained that such formwork and false work are able to support the load that may be imposed on them;
- b) Such formwork shall be so erected that working platform, means of access, bracings, means of handling and stabilizing could easily be fixed with such formwork.

14.3 ERECTION OR DISMANTLING OF STEEL AND PREFABRICATED

- a) Erection or dismantling of any pre-fabricated structure shall be made safe against danger by using appropriate means such as ladders, gangways or fixed platforms, buckets, boatswains chair or other appropriate means suspended from lifting appliances, safety harness, life lines, catch nets or catch platforms, power-operated mobile working platforms etc.;
- b) The work of erection or dismantling of buildings or structures or formwork or false work or shoring or any other civil engineering work shall be carried

- out by trained building workers under the supervision of a person responsible for such work;
- c) Steel or prefabricated structures shall be so designed and made that such structures can be safely transported or erected; and weight of each unit of such structures shall be clearly marked on such unit;
 - d) The design of each such part shall maintain stability of each part of the structures referred to in clauses above when erected, and to prevent danger, the design shall explicitly take into account –
 - e) The relevant conditions and methods of attachment in the operations of stripping, transport, storing and temporary support during erection of such parts;
 - f) Safeguards, such as provision of railings with working platforms, and for mounting such railings and platforms easily on the structural steel or prefabricated parts;
 - g) The hooks and softer devices built in or provided on the structural steel or prefabricate parts that are required for lifting and transporting such parts shall be so shaped, dimensioned and positioned to withstand the stresses to which such hooks or other devices are subjected;
 - h) Prefabricated parts made of concrete shall not stripped or erected before such concrete has set and hardened sufficiently to the extent provided for in the plans, and such parts are examined by the responsible person for any sign of damage before their use;
 - i) Store-places shall be so constructed that –
 - j) There shall be no risk of structural steel of prefabricated parts falling or overturning;

- k) Storage conditions shall generally ensure stability and avoid damage having regard to the method of storage and atmospheric conditions; and
- l) Racks shall be set on firm ground and designed so that units cannot move accidentally in such store-places;
- m) Structural steel or pre-fabricated parts shall not be subjected to stresses prejudicial to their stability while they are stored or transported or raised or set down;
- n) Tongs, clamps and other appliances for lifting structural steel and prefabricated part shall be:
 - o) In such shape and dimensions as to ensure a secure grip without damaging and marked with the maximum permissible load in the most unfavourable lifting conditions; and
- p) Structural steel or pre-fabricated parts shall be lifted by such methods and appliances that prevent them from spinning accidentally;
- q) Structural steel or pre-fabricated parts shall be provided with railings and working platforms before raising such parts to prevent any danger of falling of building workers, materials or articles at the time of any work with such parts;
- r) All reasonably practical measures shall be taken to avoid injury to building workers, building structure or equipment while structural steel or pre-fabricated parts are handled or stored or transported or raised or lowered;
- s) Structures shall not be worked on during violent storms or high winds or any other such hazardous situation;
- t) The risk of falling to which building workers, moving on high or sloping girders, may be exposed is limited by all means of adequate collective

- protection or by the use of a safety harness which shall be well secured to a sufficiently strong supports;
- u) Structural steel parts, which are to be erected at a great height, shall, as far as practicable, be assembled on the ground;
 - v) When structural steel or pre-fabricated parts are being erected, a sufficiently extended area underneath the workplace shall be barricaded or guarded;
 - w) Steel trusses, which are being erected, shall be adequately shored, braced or guyed until they are permanently secured in position;
 - x) Structural members shall not be forced into place by the hoisting machine while any building worker is in such a position that he is likely to be injured by such operation.

14.4 **FORMWORK**

- a) All formwork shall be properly designed keeping in view the safety of building workers, buildings or structures;
- b) A responsible person for structural frame and formwork shall –
- c) Inspect and examine the material, timber, structural steel and scaffolding for its strength and suitability before being taken into use;
- d) Lay-down procedures to cover all stages of such structural frame and formwork;
- e) Supervise such structural frame and formwork;
- f) Take all necessary steps or measure to correct any situation with a view to prevent accident or dangerous occurrence during performances of such structural frame and formwork.

14.5 **DE-SHORING**

- a) When shoring is removed, sufficient props shall be left in place of such shoring to prevent any possible hazard; and
- b) Deshoring shall be adequately braced and tied together with support to prevent any hazard.

15.0 SAFETY IN CONCRETE WORK

15.1 GENERAL PROVISIONS REGARDING USE OF CONCRETE

- a) All construction with the use of concrete or reinforced concrete shall be based on plans including specification of steel and concrete and other material to be used in such construction –
- Giving technical details regarding methods for safe placing and handling of such materials and indicating the type, quality and arrangement of each part of a structure of such construction; and
 - Explaining the sequence of steps to be taken for completion of such construction;
- b) Formwork and shores used for concrete work shall be structurally safe and properly braced or tied together so as to maintain position and shape of formwork or shores;
- c) Formwork structure used shall have sufficient catwalks and other secure access for inspection of such structure if such structure is in two or more tiers;
- d) No machinery or any object should fall below by using wire nets, screen nets etc.

15.2 PREPARATION AND POURING OF CONCRETE AND ERECTION OF CONCRETE STRUCTURE

- a) A building worker handling cement or concrete shall –
- Wear close-fitting clothing, gloves, helmet or hardhat, safety goggles, proper footwear and respirator or mask to protect himself from danger in such handling;

- Keep as much of his body covered as is required to protect himself from danger in such handling;
 - Take all necessary precautions to keep cement and concrete away from his skin in such handling;
- b) Lime pits shall be fenced or enclosed and filled and emptied by such devices, which do not require workers to go into the pit;
- c) Moving parts of the elevators, hoists screens bunkers, chutes, grouting equipment used for concrete work and of other equipment used for storing, transport and other handling ingredients of concrete shall be securely fenced to avoid contact of building workers with such moving parts;
- d) Screw conveyors used for cement, lime and other dusty materials shall be completely enclosed.

15.3 BUCKETS

- a) Concrete buckets used with cranes or aerial cableways shall be free from projections from which accumulations of concrete could fall;
- b) Movements of concrete buckets shall be governed by signals necessary to avoid any danger by such movements.

15.4 PIPES AND PUMPS

- a) A scaffolding carrying a pipe for pumped concrete shall be strong enough to support such pipe at a time when such pipe is filled with concrete or water or any other liquid and carry the combined load of the all the building workers who may be on such scaffold at such time, safely;
- b) Every pipe for carrying pumped concrete shall be –
 - Securely anchored at its end point and at each curve on it;
 - Provided near the top of such pipe with an air release valve;
 - Securely attached to a pump nozzle by a bolted collar or other adequate means;
- c) The operation of concrete pumps shall be governed by standard signals;
- d) Building workers employed around a concrete pump shall wear safety goggles;

15.5 MIXING AND POURING OF CONCRETE

- a) The concrete mixture shall not contain any material, which may unduly affect the setting of such concrete, weaken such concrete or corrode steel used with such concrete;
- b) When dry ingredients of concrete are being mixed in confined spaces such as silos –
 - The dust shall be exhausted at the time of such mixing and
 - In case the dust the dust cannot be exhausted, as specified, the workers shall wear respirators at the time of such mixing;

- c) When concrete is being tipped from buckets, building workers shall be kept out of the range of any kickbacks of such buckets;
- d) Loads shall not be dumped or placed on settling concrete.

15.6 CONCRETE PANELS AND SLABS

- a) All parts of a concrete panel or concrete slab shall be hoisted uniformly;
- b) Concrete panels shall be adequately braced in their final positions and such bracings shall remain in such positions until such panels are adequately supported by other parts of the construction for which such panels are used;
- c) Temporary bracings of concrete panels shall be securely fastened to prevent any part of such panels from falling when such panels are being moved.

15.7 STRESSED AND TENSIONED ELEMENTS

- a) Building workers shall not stand directly over jacking equipment while stressing of concrete girders and beams is being done;
- b) A pre – stressed concrete unit shall not be handled except at points on such unit and by the devices specified for such work by the manufacturer of such devices;
- c) During transport, pre-stressed concrete girders or concrete beams shall be kept upright by bracing or other effective means;
- d) Anchor fittings for pre-tensioned strands of pre-stressed concrete girders of concrete beams are kept in a safe condition in accordance with the instruction of manufacturer of such anchor fittings;
- e) Building workers shall not stand behind jacks or in line with tensioning elements and jacking equipment during tensioning operations of pre-stressed concrete girders or concrete beams;

- f) Building workers do not cut wires of pre – stressed concrete girders or concrete beams under tension before such concrete used of such girder or beams is sufficiently hardened.

15.8 VIBRATORS

- g) A building worker, who is in good physical condition, shall operate vibrators used in concreting work;
- h) All practical measures shall be taken to reduce the amount of vibration transmitted to the operators working in concreting work and
- i) When electric vibrators are used in concreting work
- j) Such vibrators shall be earthed;
- k) The leads of such vibrators shall be heavily insulated; and
- l) The current shall be switched off when such vibrators are not in use.

15.9 INSPECTION AND SUPERVISION

- a) A person responsible for a concreting work shall supervise the erection of the formwork, shores, braces and other supports used for such concreting work, make a through inspection of every formwork to ensure that such formwork is safe, regularly inspect the formwork, shores, braces, reshores and other supports during the placing of concrete, keep all records of inspections referred to above at the workplace relating to such inspection and produce them for inspection upon the demand.
- b) Any unsafe condition, which is discovered during the inspections, shall be remedied immediately.

15.10 BEAMS, FLOORS AND ROOFS

- a) Horizontal and diagonal bracings shall be provided in both longitudinal and transverse direction as may be necessary to provide structural stability to formwork used in concreting work and shores used in such concreting work shall be properly seated on top and bottom and secured in their places;
- b) Where shores used in concreting work rest upon the ground, base plates shall be provided for keeping such shores firm and in level;
- c) Where the floor to ceiling height of a concreting work exceeds 9 m or where the formwork deck used in such concreting work is supported by shores constructed in two or more tiers, or where the dead, live and impact loads on the formwork used in such concreting work exceed 700 kilogram per m², the structure of such formwork shall be designed by a professional engineer in the relevant field and the specifications and drawings of such formwork kept at such construction site and produced on demand.
- d) Where a professional engineer designs the structure of the formwork used in concreting work, such engineer shall be responsible for the supervision of construction and the stability of such structure.

15.11 STRIPPING

- a) Stripping of formwork used in concreting work shall not commence until the concrete on such formwork is fully set, examined and certified to this effect by the responsible person and record of such examination and certification is maintained;
- b) Stripped forms in concreting work shall be removed or stock piled promptly after stripping from all areas in which building workers are required to work or pass;

- c) Protruding nail, wire ties and other formwork accessories not required for subsequent concreting work shall be pulled, cut or otherwise made safe.

15.12 **RE-SHORING**

- a) Re-shoring used in concreting work shall be provided to a slab or beam for its safe support after its stripping or where such slab or beam is subjected to superimposed loads due to construction above such slab or beam;
- b) The provisions applicable to shoring in a concreting work shall also be applicable to reshoring in such work or pass.

16.0 SAFETY IN CONSTRUCTION, REPAIR & MAINTENANCE OF STEEP ROOFS

16.1 WORK ON STEEP ROOFS:

All practicable measures shall be provided to protect the building workers against sliding when carrying outwork on steep roofs.

16.2 CONSTRUCTION AND INSTALLATION OF ROOFING BRACKETS

- a) Roofing brackets shall be constructed to fit the pitch of steep roof and such brackets shall be used to provide level working platform;
- b) Roofing bracket shall be secured in its place by nailing pointed metal projections attached to the underside of such bracket and securely driven into a steep roof on which it is used or secured by a rope passed over the ridgepole and tie of such roof.

16.3 CRAWLING BOARDS

- a) All crawling boards used for work on steep roofs shall be of adequate strength, made of sound material and of the type approved for the purpose of their use;
- b) Crawling boards shall be kept in good repairs and inspected by a responsible person before being taken into use;
- c) Crawling boards shall be secured to a steep roof on which it is used by ridge hooks or other effective means;
- d) A firmly fastened lifeline of adequate strength shall be strung beside each crawling board throughout its length while using such crawling boards.

17.0 SAFETY IN CATCHES PLATFORMS, HOARDINGS & CHUTES

17.1 CATCH PLATFORM

- a) Catch platform shall not be used for storage of material or as a working platform;
- b) Catch platform shall at least be of 2 m wide and inclined so that the position of outer edge of such platform is 1500 mm higher than the inner edge;
- c) The open end of catch platform shall be properly fenced to the height not less than 1 m.

17.2 HOARDINGS:

Hoardings shall be constructed when the Registering Authority / Assistant Labour Commissioner considers it necessary for protection of building workers and directs such employer to construct such hoardings.

17.3 CHUTES, ITS CONSTRUCTION AND USE

- a) Wooden or metal chutes which are at an angle of more than 45° to the horizontal and used for the removal of materials shall be closed on all sides except at their openings used for receiving or discharging of materials or articles;
- b) All openings of chutes except their top openings shall be closed when not in use;
- c) Every chute –
- d) Shall be constructed of sound material, adequate strength and suitable for the purpose it is intended for use;

- e) Exceeding 12 m in height shall be constructed in accordance with the design and drawings of professional engineer for such;
- f) A suitable warning notice shall be displayed at conspicuous locations, written in Hindi and in a local language, at the discharge end of every chute;
- g) Shall be cleared when debris has accumulated to a height, which can pose danger to building worker, but such clearance shall be done in no case less frequently than once a day.

18.0 SAFETY IN WORK ON OR ADJACENT TO WATER

18.1 TRANSPORT OF WORKERS BY WATER

- a) When any building worker has to proceed to or from any workplace by water for purposes of carrying on a building or other construction work, proper measures shall be taken to provide for his safe transportation and vessels used for such purpose shall be in charge of a responsible person, properly equipped for safe navigation and maintained in good condition;
- b) Maximum number of persons which can be safely carried in a vessel shall be marked plainly and conspicuously on such vessel and such number shall not be exceeded during use of such vessel for carrying persons;
- c) Adequate protecting shall be provided to the building workers in such vessel from inclement weather;
- d) Such vessel shall be manned by adequate and experienced crew;
- e) In case the bulwarks of such vessel are lower than 60 cm from the level of the deck of such vessel, the open edge of such bulwarks shall be fitted with suitable fencing to a height of at least 1 m above such deck and the post and stanchions and similar parts used in such fencing shall not be spaced more than 2 m;
- f) The number of life buoys on deck of such vessel shall at least be equal to the number of crew members of such vessel and shall not be less than two;
- g) All life buoys on deck of such vessel shall be kept in good state of maintenance and so placed that if such vessel sinks then they will remain afloat and one of such buoys shall be within the immediate reach of the Steersman of such vessel and another is situated after part of such vessel;
and

- h) The position of the steersman of the vessel shall be such that he has a reasonably free view of all sides.

18.2 PREVENTION FROM DROWNING

- a) Where, on or adjacent to the workplace of any contraction site, there is water into which a building worker employed for work on such site, in the course of his employment, may fall and has the risk of drowning, suitable rescue equipment shall be provided and kept in an efficient state of ready use and measures shall be taken to arrange for the prompt rescue of such building worker from the danger of drowning and where there is a special risk of such fall from the edge of adjacent land or from a structure adjacent to or above the water, or from floating stage on such water, secure fencing shall be provided near the edge of such land, structure or floating stage, as the case may be, to prevent such fall, and such fencing may be removed or allowed to remain unerected for the time and to the extent necessary for the access of building workers to such work or the movement of material for such work;
- b) For handling rescue equipment, at least two persons knowing diving should be available at such sites.

19.0 SAFETY IN COFFERDAMS & CAISSONS

19.1 EVERY COFFERDAM AND CAISSON SHALL BE

- a) Of good construction, sound material and of adequate strength, provided with adequate means for workers to reach safely at the top of such cofferdam or caisson in the event of an in rush of water and safe means of access to every place where workers shall be employed;
- b) Work relating to construction, positioning, modification, dismantling of cofferdams or caissons shall be carried out under the supervision of a responsible person and inspected by the responsible person at the specified intervals;
- c) A worker shall be allowed to work in a cofferdam or caisson after such cofferdam or caisson has been inspected and found safe by responsible person within such preceding period as approved and a record of such inspection maintained.

19.2 WORK IN COMPRESSED AIR IN A COFFERDAM OR CAISSON SHALL BE

- a) Carried out in accordance with the procedure laid down;
- b) Carried out by such building workers who have completed eighteen years of age and are medically examined and found fit for the work;
- c) Carried out under the supervision of a responsible person;
- d) If the work in cofferdam or caisson is carried out in shifts, a record of the time spent by each worker in each such shift for carrying out the work shall

be maintained in a register with particulars or time taken for the compression of such building worker, if any;

- e) At every work site or project in a cofferdam or caisson, where workers are employed to work in compressed air environment, a construction medical officer assisted by a nurse or trained first-aid attendant, shall be available at all times and there shall be one standby reserve compressor to meet the emergency.

19.3 PRESSURE PLANT AND EQUIPMENT

- a) Pressure plant and equipment for which it is used shall be –
- Properly maintained in good repairs and working condition and fitted with a suitable safety valve or other effective device to provide maximum safe discharge pressure from being exceeded at any time; a suitable pressure gauge with a dial range not less than 1.5 time and not exceeding twice the maximum working pressure, easily visible and designed to show at all times, the internal pressure in kilogram per square centimeter and marked with the maximum safe working pressure, a suitable stop valve or valves by which the pressure plant or the system of the pressure plant may be isolated from the source supply of pressure or otherwise;
- b) Every pressure plant or equipment shall be thoroughly examined by the competent person, externally, once in every period of six months; internally, once in every period of twelve months; and by hydraulic test, once in a period of four years.

20.0 SAFETY IN DEMOLITION WORK

20.1 PREPARATION

- a) All glass or similar material or article in exterior openings shall be removed before commencing any demolition work and all water, steam, electric, gas and other similar supply lines put off and suitably capped and the concerned department of the appropriate authority informed and permission obtained wherever required before commencing;
- b) Wherever it is necessary to maintain water, gas or electric line or power during such demolition, such line shall be so located or protected with substantial coverings so as to protect it from damage and to afford safety to the building workers and the general public.

20.2 PROTECTION OF ADJACENT STRUCTURES

- a) Examination of walls etc. of adjacent structures –
- b) During demolition process, the contractor shall examine the walls of all structures adjacent to the structure to be demolished to determine the thickness, method of support to such adjacent structures and;
- c) In case, such employer has reason to believe that any of such adjacent structure is unsafe or may become unsafe during such demolition process, he shall not perform demolition activity unless stability to such unsafe adjacent structure from collapsing has been taken. All roads and open spaces adjacent to the site of demolition work shall be closed or suitably protected by bracketing.

20.3 DEMOLITION OF WALLS, PARTITIONS, ETC.

- a) Any demolition of walls or partitions shall be proceeded in a systematic manner as per the standard safe operating practices approved and all work

- above each tier of any floor beams shall be completed before the safety of the supports of such beam is impaired;
- b) Masonry shall be neither loosened nor permitted to fall in such masses or volume or weight as to endanger the structural stability of any floor or structural supports;
 - c) No wall chimney or other structure or part of a structure shall be left unguarded in such a condition that it may fall, collapse or weaken due to wind pressure or vibration;
 - d) In the case of demolition of exterior walls by hand, safe footing shall be provided for the workers employed in, such walls or partitions, which are to be demolished by hand shall be not left standing more than one storey high above the uppermost floor on which persons are working.

20.4 METHOD OF OPERATION:

The contractor shall ensure that debris, bricks and other materials or articles are removed by means of chutes, buckets or hoists and through openings in the floors.

20.5 ACCESS TO FLOOR

- a) Safe access to and egress from every building shall be provided at all times in the course of demolition by means of entrances hallways, stairways or ladder runs which shall be so protected as to safeguard the workers using such means from falling material or articles;
- b) Demolition of structural steel etc. shall be demolished column by column and tier by tier and every structural member, which is being demolished, shall not be under any stress, and such structural member shall be suitably lashed to prevent it from any uncontrolled swinging, dropping or falling or falling;

- c) Large structural members shall not be thrown or dropped from the building, but carefully lowered by adopting suitable safe method;
- d) Where a lifting appliance like a derrick is used for demolition, the floor on which such lifting appliance rests shall be completely planked over or supported and such floor shall be of adequate strength to sustain bearing load for such lifting appliance and its operation.

20.6 STORAGE OF MATERIAL OR ARTICLE

- a) No materials or articles shall be not stored or kept on platform, floor or stairways of a building being demolished, provided that this clause shall not apply to the floor of a building when such floor is of such strength as to support safely the load to be superimposed by storing such material or articles;
- b) No access to any stairway or passageway shall be affected or blocked by storing any material or article;
- c) Suitable barricades shall be provided so as to prevent materials or articles from sliding or rebounding into any space used by the workers.

20.7 FLOOR OPENINGS:

Every opening used for the removal of debris from every floor which is not closed to access, except the top or working floor, shall be provided with an enclosure from such floor to its ceiling, or such opening is so barricaded that no building worker shall access to within a horizontal distance of 6.0 m from such opening through which debris is being dropped.

20.8 INSPECTION:

A person responsible for demolition work shall make continuous inspections during demolition process so as to detect any hazard resulting from weakened or deteriorated floors or walls or loosened materials or articles, and that no building worker shall be

permitted to work where such hazard exist unless remedial measured like shoring or bracing shall be taken to prevent such hazards.

20.9 WARNING SIGNS, BARRICADES, ETC.

- a) Barricades and warning sign shall be erected along every side throughout the length and breadth of a building or other construction work to be demolished to prevent unauthorized persons from entering into the during demolition operations;
- b) During the demolition of an exterior masonry wall or a roof from a point more than 12 m above the adjoining ground level of such wall or roof, if persons below such wall or roof are exposed to falling objects, suitable and safe catch platform shall be provided and maintained at a level not more than 6 m below the working level except where an exterior built-up scaffold is provided for safe and adequate protection of such persons;
- c) Suitable and standard warning signs shall be displayed or erected at conspicuous places or position at the workplace;

20.10 MECHANICAL METHOD OF DEMOLITION

- a) The following requirements shall be fulfilled in case the mechanical method of demolition like use of swinging weight, clamshell bucket, power shovel, bulldozer or other similar mechanical methods are used for the purpose of demolition namely –
- b) The building or structure or structure or remaining portion thereof shall be not more than 12 m in height;
- c) Where a swinging weight is used for demolition, a zone of such demolition having a radius of at least 1.5 times the height of the structure of portion

- thereof being demolished shall be maintained around the points of impact of such swinging weight;
- d) Where a clamshell bucket is being used for demolition, a zone of demolition shall be maintained within eight metres of the liner of travel of such bucket;
 - e) Where other mechanical methods are being used to affect total or partial collapse of a building or other construction work, there shall be maintained, in the area into which the affected portion of such building or other construction work may fall, a zone of demolition at least 1.5 times the height of such affected portion thereof; and
 - f) No person other than building workers or other persons essential to the operation of demolition work shall be permitted to enter a zone of demolition, which shall be provided with substantial barricades.

21.0 FIRE EXTINGUISHERS & OTHER APPLIANCES OF FIRE FIGHTING

21.1 FIRE EXTINGUISHERS & OTHER MEANS OF PREVENTION AND PROTECTION

a) Every contractor shall have a fire protection and prevention plan developed and implemented keeping in view the following:

- The specific work practices requiring fire control measures;
- Response measures to be taken in case of fire;
- Equipment required;
- Personnel requirements and responsibilities;
- Schedules of daily and weekly inspection;
- Open flames and fires are prohibited in all underground construction;
- Readily visible signs to be posted in the fire prone/inflammable/explosive areas prohibiting smoking use of open flames and other hot work.
- A system of Permit-to-Work.

b) For the protection of the workers from the outbreak of fire, the contractor shall Provide, maintain and regularly inspect the Fire extinguishing equipment, which shall be sufficiently provided to extinguish any probable fire;

Suitability of portable fire extinguishers			
Class of fire	Type of extinguisher		
	Water	DCP	CO2
A	Yes	Yes	Yes
B	No	Yes	Yes
C	No	Yes	Yes
D	No	Yes	Yes
Electrical	No	Yes	Yes

- c) Ensure availability of an adequate supply of water at ample pressure;
- d) Make available Adequate number of trained persons required to operate the fire extinguishing equipment;
- e) Properly maintain Fire extinguishing equipment and inspect them at regular intervals of not less than once in a year by the responsible person and a record of such inspections maintained;
- f) Portable fire extinguishers provided in the operator’s cabin of earthmoving machinery, material handling systems, construction equipment etc. shall be regularly inspected, maintained and replenished/refilled;
- g) The operators and the helpers of such equipment shall be trained in the methods operating the equipment and fighting the fire effectively;
- h) All combustion engine power equipment shall be so located that the exhausts are well away from combustible material;

- i) No smoking shall be allowed at or in the vicinity of operations, which constitute fire hazards and shall be conspicuously posted with No smoking or open flame signs;
- j) In the flammable environment as described in IS: 9570, the electrical fittings and equipment shall be of flame proof type conforming to IS: 2206 & IS: 2148;
- k) Arrangements shall be made to contain sparks generated during welding, cutting or other operations and spark shall not be allowed to fall down on combustible material kept below; All means of exit shall be kept free of obstruction at all times;
- l) Appropriate type of fire extinguishers according to IS: 5698 shall be kept in fully charged condition at the places which have potential risk of fire;
- m) The contractor shall educate his or his sub-contractors' men working in the vicinity of fire risk, on how to operate these equipment and know in particular circumstances which type of extinguishers is to be used;
- n) The contractor shall take full responsibility for the upkeep and replenishment/refilling of the fixed and portable fire extinguishers.

SECTION – V: FORMAT OF FORMS AND ANNEXURES

Annexure-I

FORMAT FOR LETTER OF BID

(To be uploaded by the Bidder on his Letter Head during submission of bid online)

To,
The Tender Committee
Coal India Limited

Sub: BID for the Work “Design, Engineering, Procurement & Supply, Construction & Erection, Testing, Commissioning, Associated Transmission System and Comprehensive O&M for 10 Years of 40MW (AC) Solar PV Power Plant at Johilla Area, Umaria, Madhya Pradesh, India”

Tender Id No:.....

Date

Dear Sir,

This has reference to above referred bid. I/we have read and examined the conditions of contract, Scope of Work, technical specifications, BOQ and other documents carefully.

I/We am/are pleased to submit our bid for the above work. I/We hereby unconditionally accept the bid conditions and bid documents in its entirety for the above work and agree to abide by and fulfil all terms and conditions and specifications as contained in the bid document.

I/we here by submit all the documents as required to meet the eligibility criteria as per provision of the bid notice/document.

I/We hereby confirm that this bid complies with the Bid validity, Bid security and other documents as required by the Bidding documents.

If any information furnished by me/us towards eligibility criteria of this bid is found to be incorrect at any time, penal action as deemed fit may be taken against me/us for which I/We shall have no claim against CIL.

Until a formal agreement is prepared and executed, this bid and your subsequent Letter of Award (LOA)/Work shall constitute a binding contract between us and SECL.

Should this bid be accepted, we agree to furnish Performance Security within stipulated date and commence the work within stipulated date. In case of our failure to abide by the said provision, SECL

shall, without prejudice to any other right or remedy, be at liberty to cancel the letter of award/ work order and to forfeit the Earnest Money and also debar us from participating in future tenders for a minimum period of 12(twelve) months.

Date :

Yours faithfully,

Signature of Bidder with Seal

Annexure-II

PROFORMA FOR UNDERTAKING

We solemnly declare that:

1. I/We am/are submitting Bid for the work “**Design, Engineering, Procurement & Supply, Construction & Erection, Testing, Commissioning, Associated Transmission System and Comprehensive O&M for 10 Years of 40MW (AC) Solar PV Power Plant at Johilla Area, Umaria, Madhya Pradesh, India**” against Tender id No.
Dated..... and I/we offer to execute the work in accordance with all the terms, conditions and provisions of the bid.
2. All information furnished by us in respect of fulfilment of eligibility criteria and qualification information (General Qualification criteria, Technical Qualification Criteria and Financial Qualification Criteria), General Terms and Conditions of the Contract, Additional Terms and Conditions of the Contract and Special Conditions of the Contract of this Bid is complete, correct and true.
3. The Company is not banned/debarred/blacklisted by other Central Public Sector Enterprises (CPSEs)/Government Entities as on the original scheduled date of tender opening.
4. Copy of documents, credentials and documents submitted along with this Bid are genuine, authentic, true and valid.
5. I/ We hereby authorize department to seek references / clarifications from our Bankers.
6. We hereby undertake that we shall register and obtain license from the competent authority under the contract labour (Regulation & Abolition Act) as relevant, if applicable.
7. I/We have not been debarred by any procuring entity for violation of Preference to Make in India (as applicable) vide Order No. P-45021/2/2017-PP (BE-II) dated 16.09.2020, issued by Govt. of India as amended from time to time
8. I/We do not have relationship with any other participating bidders, directly or through common third parties, that puts us in a position to have access to information about or influence on the bid of another Bidder.
9. I/We or any of my/our affiliate has/have not participated as consultant in the preparation of the design or technical specification of the contract that is the subject of the bid.
10. If any information and document submitted is found to be false/ incorrect at any time, department may cancel my/our Bid and action as deemed fit may be taken against me/us, including termination of the contract, forfeiture of all dues including Earnest Money and banning of our firm and all partners of the firm etc. as per Annexure-XVI – Guidelines on Debarment of Firms from Bidding.

Signature of Bidder with Seal

Annexure-III

MANDATE FORM FOR ELECTRONIC FUND TRANSFER / INTERNET BANKING PAYMENT.

1. Name of the Bidder :.....

2. Address of the Bidder :

City..... Pin Code.....

E-mail Id

Permanent Account Number

3. Particulars of Bank:

Bank Name		Branch Name	
Branch Place		Branch City	
Pin Code		Branch Code	
MICR No.			
(Digital Code number appearing on the MICR Band of the cheque supplied by the Bank. Please attach Xerox copy of a cheque of your Bank for ensuring accuracy of the Bank Name, Branch Name and Code Number.			
RTGS CODE			
Account Type	Savings	Current	Cash Credit
Account Number(as appearing in the Cheque Book.			

4. Date from which the mandate should be effective.

I hereby declare that the particulars given above are correct and complete. If any transaction is delayed or not effected for reasons of incomplete or incorrect information. I shall not hold Company responsible. I also undertake to advise any change in the particulars of my account to facilitate updation of records for purpose of credit of amount through SBI Net / RTGS transfer/NEFT. I agree to discharge responsibility expected of me as a participant under the scheme. Any bank charges levied by the bank for such e-transfer shall be borne by us.

Place :

Date :

Signature of the Party / Authorised Signatory

Certified that particulars furnished above are correct as per our records.

Banker's Stamp

Date :

(Signature of the Authorised official from the Bank)

Annexure- IV

PROFORMA FOR DECLARATION TOWARDS CODE OF INTEGRITY FOR PUBLIC
PROCUREMENT TO BE ACCEPTED UNCONDITIONALLY BY BIDDER/S

(To be signed on Plain Paper)

To Tender Inviting Authority,

.....

Sub: Declaration towards CIPP by

Bidder Ref:

NIT No.:

Tender Id No:

Dear Sir,

I, Sri,, proprietor, representative, partner ofI / We,
_____Proprietor/ Partner / Legal Attorney /Director/ Accredited Representative
of M/s Solemnly declare that:

1. I/we have read and examined the conditions of Code of Integrity for Public Procurement in respect to this contract as laid down in the General Terms and Conditions.
2. Without prejudice to and in addition to the rights of the Procuring Entity to other penal provisions as per the bid documents or contract, if the Tender Inviting Authority comes to a conclusion that a (prospective) bidder/contractor/ Supplier/ consultant/ service provider, directly or through an agent, has violated this code of integrity in competing for the contract or in executing a contract, actions deemed fit as per the punitive actions recommended in the tender document may be taken against me/us.
3. In-case the contract is awarded to me/us, I/we will submit a signed copy of Code of Integrity for Public Procurement, signed by All Partners/Authorized Signatory of the Bidder.

(For & On behalf of the Principal)
Seal)

(For & On behalf of Bidder/ Contractor) (Office
(Office Seal)

Place -----

Date -----

Witness 1:

(Name & Address)

Witness 2:

(Name & Address)

Code of Integrity for Public Procurement (CIPP)

1. Introduction

Public procurement is perceived to be prone to corruption and ethical risks. To mitigate this, the officials of Procuring Entities involved in procurement and the bidders/ contractors must abide by the following Code of Integrity for Public Procurement (CIPP). All Procuring officials may be asked to submit sign declarations to this effect while processing PR on ERP of Subsidiary Company. To implement it uniformly and mandatorily, this undertaking shall be in-built in the PR format in ERP of Subsidiary Company. The bidders/ contractors should be asked to sign a declaration about abiding by a Code of Integrity for Public Procurement (including sub-contractors engaged by them) during submission of bid, with a warning that, in case of any transgression of this code, it would be liable for punitive actions such as cancellation of contracts, banning and blacklisting or action in Competition Commission of India, and so on.

2. Code of Integrity for Public Procurement

Procuring authorities as well as bidders, contractors and consultants should observe the highest standard of ethics and should not indulge in the following prohibited practices, either directly or indirectly, at any stage during the procurement process or during execution of resultant contracts:

- i) “Corrupt practice”: making offers, solicitation or acceptance of bribe, rewards or gifts or any material benefit, in exchange for an unfair advantage in the procurement process or to otherwise influence the procurement process or contract execution;
- ii) “Fraudulent practice”: any omission or misrepresentation that may mislead or attempt to mislead so that financial or other benefits may be obtained or an obligation avoided. This includes making false declaration or providing false information for participation in a tender process or to secure a contract or in execution of the contract;
- iii) “Anti-competitive practice”: any collusion, bid rigging or anti-competitive arrangement, or any other practice coming under the purview of The Competition Act, 2002, between two or more bidders, with or without the knowledge of the procuring entity, that may impair the transparency, fairness and the progress of the procurement process or to establish bid prices at artificial, non-competitive levels;
- iv) “Coercive practice”: harming or threatening to harm, persons or their property to influence their participation in the procurement process or affect the execution of a contract; v) “Conflict of Interest”-A Bidder may be considered to have a Conflict of Interest with one or more parties in this bidding process, if:
 - a) they have controlling partner(s) in common; or
 - b) they receive or have received any direct or indirect subsidy/financial stake from any of them; or
 - c) they have the same legal representative/agent for purposes of this bid; or
 - d) they have business relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another Bidder; or

e) a Bidder or any of its affiliate participated as a consultant in the preparation of the design or technical specification of the contract that is the subject of the bid; or

f) in case of a holding Company having more than one Subsidiary/Sister Concern having common business ownership/management only one of them can bid. Bidders must proactively declare such sister/common business/management in same/similar line of Business;

all such Bidders having a Conflict of Interest, shall be disqualified.

The Bidders shall comply the above provision of “Conflict of Interest” and submit an undertaking with respect to Clause No. 27 in NIT.

Earnest Money deposited by such defaulting Bidders shall be forfeited and they shall be debarred from participating in future tenders in concerned Subsidiary/CIL HQ for a period of 12(twelve) months from the date of issue of such letter.

In case of JV/CONSORTIUM/Partnership firm, the debarment shall also be applicable to all individual partners of JV/CONSORTIUM/Partnership firm.

vi) “Obstructive practice”: materially impede the procuring entity’s investigation into allegations of one or more of the above mentioned prohibited practices either by deliberately destroying, falsifying, altering; or by concealing of evidence material to the investigation; or by making false statements to investigators and/ or by threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or by impeding the procuring entity’s rights of audit or access to information;

3. Obligations for Proactive Disclosures

i) Procuring authorities as well as bidders, contractors and consultants, are obliged under Code of Integrity for Public Procurement to suo-moto proactively declares any conflicts of interest (coming under the definition mentioned above – pre-existing or as and as soon as these arise at any stage) in any procurement process or execution of contract. Failure to do so would amount to violation of this code of integrity; and

ii) Any bidder must declare, whether asked or not in a bid document, any previous transgressions of such a code of integrity with any entity in any country during the last three years or of being debarred by any other procuring entity. Failure to do so would amount to violation of this code of integrity.

iii) To encourage voluntary disclosures, such declarations would not mean automatic disqualification for the bidder making such declarations. The declared conflict of interest may be evaluated and mitigation steps, if possible, may be taken by the procuring entity. Similarly voluntary reporting of previous transgressions of Code of Integrity elsewhere may be evaluated and barring cases of various grades of debarment, an alert watch may be kept on the bidder’s actions in the tender and subsequent contract.

4. Punitive Provisions

Without prejudice to and in addition to the rights of the procuring entity to other penal provisions as per the bid documents or contract, if the procuring entity comes to a conclusion

that a (prospective) bidder/ contractor directly or through an agent, has violated this code of integrity in competing for the contract or in executing a contract, the procuring entity may take appropriate measures including one or more of the following:

- i) If his bids are under consideration in any procurement
 - a) Forfeiture or encashment of bid security;
 - b) calling off of any pre-contract negotiations; and
 - c) rejection and exclusion of the bidder from the procurement process
- ii) If a contract has already been awarded
 - a) Cancellation of the relevant contract and recovery of compensation for loss incurred by the procuring entity;
 - b) Forfeiture or encashment of any other security or bond relating to the procurement;
 - c) Recovery of payments including advance payments, if any, made by the procuring entity along with interest thereon at the prevailing rate;
- iii) Provisions in addition to above:
 - a) / debarment of the bidder from participation in future procurements of the procuring entity for a period not less than one year;
 - b) In case of anti-competitive practices, information for further processing may be filed, with the Competition Commission of India;
 - c) Initiation of suitable disciplinary or criminal proceedings against any individual or staff found responsible.

Annexure- V

PROFORMA OF BANK GURANTEE FOR CONTRACT PERFORMANCE SECURITY

To
GM (E&M/Solar),
South Eastern Coalfields Limited,
Bilaspur, Chhattisgarh, 495006
Re: Bank Guarantee in respect of Contract
No.....,Dated..... Between (Name of the
company) and (Name of the Contractor)

WHEREAS

..... (Name and address of the Contractor) (herein after called “the Contractor”) has entered into a contract made as per letter of acceptance..... dated..... (herein after called the said contract) with (name of the Company) (hereinafter called “the Company”) to execute (name of the contract and brief description of work) on the terms and conditions contained in the said Contract.

It has been agreed that the Contractor shall furnish a Performance Security in the shape of Bank Guarantee from a Scheduled Bank for a sum of Rs..... as security for due compliance and performance of the terms and conditions of the said Contract.

We..... (name of the Bank) having its Branch/Office at..... have, at the request of the Contractor, agreed to furnish this Bank Guarantee by way of Performance Security.

NOW, THEREFORE, we the..... Bank (herein after called The Bank) hereby, unconditionally and irrevocably, guarantee and affirm as follows:

The Bank do hereby irrevocably guarantee and unconditionally agree with the Company that if the Contractor shall in any way fail to observe or perform the terms and conditions of the said Contract or shall commit any breach of its obligation thereunder, the Bank shall on its mere first written demand, and without any objection, demur and without any reference to the Contractor, pay to the Company the said sum of or such portion as shall then remain due with interest without requiring the Company to have recourse to any legal remedy that may be available to it to compel the Bank to pay the sum, or failing on the Company to compel such payment by the Contractor.

Any such demand shall be conclusive as regards the liability of the Contractor to the Company and as regards the amount payable by the Bank under this Guarantee. The Bank shall not be entitled to withhold payment on the ground that the Contractor has disputed its liability to pay or has disputed the quantum of the amount or that any arbitration proceeding or legal proceeding is pending between the Company and the Contractor regarding the claim.

The Bank further agree that the Guarantee shall come into force from the date hereof and shall remain in force and effect till the period that will be taken for the performance of the said Contract which is likely to be day of but if the period of Contract is extended either pursuant to the provisions in the said Contract or by mutual agreement between the Contractor and the Company, the Bank shall renew the period of the Bank Guarantee failing which it shall pay to

the Company the said sum of or such lesser amount of the said sum of as may be due to the Company and as the Company may demand.

This Guarantee shall remain in force until the dues of the Company in respect of the said sum ofand interest are fully satisfied and the Company certifies that the Contract has been fully carried out by the Contractor and discharged the guarantee.

The Bank further agrees with the Company that the Company shall have the fullest liberty without consent of the Bank and without affecting in any way the obligations hereunder to vary any of the terms and conditions of the said contract or to extend time for performance of the said contract from time to time or to postpone for any time or from time to time any of the powers exercisable by the Company against the Contractor and to forebear to enforce any of the terms and conditions relating to the said Contract and the Bank shall not be relieved from its liability by reason of such failure or extension being granted to the Contractor or to any forbearance, act or omissions on the part of the Company or any indulgence by the Company to the Contractor or any other matter or thing whatsoever which under the law relating to sureties would but for this provision have the effect or relieving or discharging the Guarantor.

The Bank further agrees that in case this Guarantee is required for a longer period and it is not extended by the Bank beyond the period specified above, the Bank shall pay to the Company the said sum of or such lesser sum as may then be deemed to the Company and as the Company may require.

This Bank Guarantee shall also be operative at our Branch located at(detailed address), from whom, confirmation regarding issue of this guarantee or extension/renewal thereof shall be made available on demand. Any notice by way of request, demand or otherwise hereunder may be sent by post/e-mail/Fax addressed to the bank branch / operative branch, which shall be deemed to be a sufficient demand notice. Bank shall effect payment thereof forthwith. The details of outstation Bank issuing the Bank Guarantee are as below.

- i) Complete Postal Address with PIN Code
- ii) Branch Code
- iii) IFSC Code –
- iv) SWIFT –
- v) Telephone No. –
- vi) Fax No. –
- vii) Email ID –

The details of Local Operating Branch of the Bank issued the Bank Guarantee are as below.

- i) Complete Postal Address with PIN Code
- ii) Branch Code
- iii) IFSC Code –
- iv) SWIFT –
- v) Telephone No. –

vi) Fax No. –

viii) Email ID –

Whenever there is change in postal address and/or other details of this branch issued the guarantee and/or the operative branch, we(the issuing bank) will ensure to intimate respective Area, being the beneficiary, of such changed address, telephone number, fax number and e-mail ID.

Notwithstanding anything contained herein the liability of the Bank under this Guarantee is restricted to Rs..... The guarantee shall remain in force till the day*..... of*..... and unless the guarantee is renewed or claim is preferred against the Bank on or before the said date all rights of the Company under this guarantee shall cease and the Bank shall be relieved and discharged from all liabilities hereunder except as provided in the preceding Clause.

* The date of guarantee shall cover a period of minimum one year or 90 days beyond the date of completion whichever is more.

This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor.

The Bank has under its constitution power to give this Guarantee and Sri..... who has signed it on behalf of the Bank has authority to do so.

Signed and sealed this..... day of.....at.....

SIGNED, SEALED AND DELIVERED

For and on behalf of the Bank by:

(Signature)

(Name)

(Designation)

(Code number)

(Address)

“The Bank Guarantee as referred above shall be operative at our branch at..... payable at.....(NIT shall specify town/city of the operative Branch. Bank Guarantee shall specify name of the branch with address of the specified town/city)

NOTE: - The department shall ensure extension of guarantee period in case of extension of time.

Annexure- VI

PROFORMA OF BANK GUARANTEE FOR MOBILISATION/ LUMP-SUM ADVANCE.

M/s. South Eastern Coalfields Limited
Bilaspur, Chattisgarh-495006

Dear Sir,

In consideration of South Eastern Coalfields Limited having its Registered Office at Seepat Road, Bilaspur, Chattisgarh-495006 (hereinafter called “the Company” which expression shall unless repugnant to the subject or context includes its successors and assigns) having agreed under the terms and conditions of the Contract No..... dated..... Entered into between Coal India Limited and M/s having its Registered Office at (hereinafter called “the Contractor” to make mobilisation advance/lump-sum advance to the tune of Rs..... subject to submission of the Bank Guarantee for equal amount from any Nationalised/ Schedule Bank , We Bank (hereinafter referred to as the said Bank) having its Registered Office at do hereby undertake and agree to pay the Company to the extent of Rs..... on demand stating that the amount claimed by the Company is due and payable by the contractor for the reasons of non-refund and or non-recovery of the amount with interest thereon and to unconditionally pay the amount claimed by the company on such demand without any demur to the extent aforesaid.

2. We, Bank agree that the Company shall be the sole judge as to whether the said Contractor has failed/neglected in refunding the amount advanced by the Company and/or extent of loss and damages caused to or suffered by the Company on account of the amount advanced not being recovered in full and non-utilisation of the said advanced amount or part thereof for the purpose of performance of the contract and interest payable thereon and the decision of the company in this behalf shall be final and binding on us.

3) We, the said Bank further agree that the Guarantee herein contained shall remain in full force and effect upto and any claim received after the said date shall in no case bind the Bank.

4) The Company shall have the fullest liberty without affecting in any way the liability of the Bank under this guarantee or indemnity from time to time vary any of the terms and conditions of the said contract or to extend the time of performance by the said contractor or to postpone any time and from time to time any of the powers exercisable by it against the said contractor and either to enforce or to forbear from enforcing any of the terms and conditions governing the said contract or securities available to the company and the said Bank shall not be released from its liability under these presents.

5. Notwithstanding anything contained herein the liability of the said Bank under this Guarantee is restricted to Rs..... (amounting to 110% of total advance amount) and this Guarantee shall come into force from the date hereof and shall remain in full force and effect till unless the written demand or claim under this Guarantee is made by the Company with us on or before all rights of the Company under this Guarantee shall cease to have any effect and we shall be relieved and discharged our liabilities hereunder.

6. We, the said Bank lastly undertake not to revoke this Guarantee during its currency except with the previous consent of the company in writing and agree that any change in the constitution of the said contractor or the said Bank shall not discharge our liability hereunder.

7. This guarantee issued by Sri..... who is authorized by the Bank.
Under jurisdiction of court only.

Annexure-VII

PROFORMA OF JOINT VENTURE/CONSORTIUM AGREEMENT

(On Non-Judicial Stamp paper of appropriate value as per provision of the Stamp Act applicable in the concerned state)

This Joint Venture (JV)/Consortium agreement is made on thisday of.....

AMONGST/BETWEEN

M/s....., having its registered Office at Represented by Shri..... (Name and Designation) of M/s....., who has power of Attorney to enter into JV/Consortium with.....and sign all documents/ agreements on behalf of M/s..... (hereinafter referred to as”.....”)

AND

M/s....., having its registered Office at Represented by Shri.....(Name and Designation) of M/s....., who has power of Attorney to enter into JV/Consortium with.....and sign all documents/agreements on behalf of M/s..... (hereinafter referred to as”.....”).

AND

M/s....., having its registered Office at Represented by Shri.....(Name and Designation) of M/s....., who has power of Attorney to enter into JV/Consortium with.....and sign all documents/agreements on behalf of M/s..... (hereinafter referred to as”.....”).

The expressions M/s and M/s.....and M/sshall, wherever the context admits, mean and include their respective legal representatives, successors-in-interest and assigns and shall collectively be referred to as “JV/Consortium /Parties” and individually as “JV/Consortium Partner/Party”.

WHEREAS M/s.....and M/s..... and M/sagreed to form a JV/Consortium in order to join their forces to obtain best results from the combinations of their individual resources of technical and management skill, finance and equipment for the benefit of the project and in order to submit the Bid for the work of “.....” (Hereinafter referred to as “Project”) under..... (Name of Company) (hereinafter referred to as “the Principal Employer”).

The Parties hereby enter into this JV/Consortium Agreement (hereinafter referred to as “JV/Consortium agreement”) to jointly prepare and submit the Bid for the Project and in the event of securing the Project from the Employer, to execute the Project in accordance with the Contract Terms and Conditions, to the satisfaction of the Principal Employer.

NOW THEREFORE, the parties, in consideration of the mutual premises contained herein, agree as follows:

1) FORMATION AND TERMINATION OF THE JV/CONSORTIUM.

The parties under this Agreement have decided to form a JV/Consortium to submit the Bid for the above Project and execute the Contract with the Principal Employer for the Project, if qualified and awarded.

a) The name and style of the JV/Consortium shall be “.....” (hereinafter called the “JV/Consortium”)

b) The Head Office of the JV/Consortium shall be located at..... and the site office will be located at the site of the Project.

All communication regarding the Project will be made to..... Telephone Nos.....

c) Neither of the parties of the JV/Consortium shall be allowed to assign, pledge, sell or otherwise dispose all or part of its respective interests in the JV/Consortium to any party including the existing partner of the JV/Consortium.

d) The terms of the JV/Consortium shall begin as on the date first set forth above and shall terminate on the earliest of the following dates.

i) The JV/Consortium fails to obtain qualification from the Employer.

ii) The Contract for the Project is not awarded to the JV/Consortium.

iii) The Employer cancels the Project.

iv) Either Party commits material breach of this Agreement and fails to cure such breach within the period designated by the non-defaulting Party.

v) Both parties agree to terminate this Agreement in writing.

vi) The Project is completed including defects liability period to the satisfaction of the Employer and all the parties complete any and all duties, liabilities and responsibilities under or in connection with the Contract and the JV/Consortium agreement.

2) LEAD PARTNER.

M/s..... shall be the Lead Partner of the JV/Consortium and is In-charge for performing the contract management. M/s..... shall be attorney of the parties duly authorized to incur liabilities and receive instructions for and on behalf of any and all partners in the JV/Consortium and also all the partners of the JV/Consortium shall be jointly and severally liable during the bidding process and for the execution of the contract as per contract terms with the employer in accordance with the power of attorney annexed. All JV/Consortium Partners M/s....., M/s..... M/s..... nominate and authorize Shri..... (name and designation) of M/s..... to sign all letters, correspondence, papers & certificates and to submit the Pre-qualification Application / Bid documents for and on behalf of the JV/Consortium.

3) REPRESENTATIVE OF THE PARTNERS OF THE JV/CONSORTIUM.

Each constituent party of the JV/Consortium appoints the following personnel as the representative of the relevant party with full power of attorney from the Board of Directors of the concerned Company, or from the partners of the entity, or from the proprietor.

JV/CONSORTIUM	Name	Position in the respective Company Partners
M/s.....
M/s.....
M/s

4) PARTICIPATION SHARE & WORK RESPONSIBILITIES.

4.1 The parties agree that their respective participation share (hereinafter called ‘Participation Share’) in the JV/Consortium shall be as follows:

M/s.....:%	(.....per cent)
M/s.....:%	(.....per cent) and
M/s.....:%	(.....per cent)

4.2 The Parties shall share the rights and obligations, risk, cost and expenses, working capitals, profits or losses or others arising out of or in relation to execution of the Project individually or collectively.

4.3 The parties shall jointly execute the works under the Project as an integrated entity and allocate responsibilities as regards division of work between themselves by organizing the adequate resources for successful completion of the Project. However, all parties shall remain jointly and severally responsible for the satisfactory execution of the Project in accordance with the Contract terms and conditions.

5) JOINT AND SEVERAL LIABILITIES.

All partner of JV/Consortium shall be liable jointly and severally during the Prequalification and Bidding process; and in the event the contract is awarded, during the execution of the Contract, in accordance with Contract terms.

6) WORKING CAPITAL

During the execution of work/service, the requirement of Working Capital shall be met individually or collectively by the JV/CONSORTIUM partners.

7) BID SECURITY:

Bid Security, Performance Security and other securities shall be paid by the JV/Consortium except as otherwise agreed.

8) PERSONNEL & EQUIPMENT

Team of Managers / Engineers of all the partners of the JV/Consortium will form part of the core management structure and assist in execution of the project. The list of personnel and equipment proposed to be engaged for the Project by each Party will be decided by the management committee.

9) NON-PERFORMANCE OF RESPONSIBILITY BY ANY PARTY OF JV/CONSORTIUM.

a) As between themselves, each Party shall be fully responsible for the fulfilment of all obligations arising out of its scope of the work for the Project to be clarified subject to the Agreement between the Parties and shall hold harmless and indemnified against any damage arising from its default or nonfulfillment of such obligations.

b) If any Party fails to perform its obligations described in this Agreement during the execution of the Project and to cure such breach within the period designated by the non-defaulting party, then the other party shall have the right to take up work, the interest and responsibilities of the defaulting party at the cost of the defaulting party.

c) Stepping into the shoes of the existing partner of JV/Consortium with all the liabilities of the existing partner from the beginning of the contract with the prior approval of Company.

d) Notwithstanding demarcation or allotment of work of between/amongst JV/Consortium partners, JV/Consortium shall be liable for non-performance of the whole contract irrespective of their demarcation or share of work.

e) In case bid being accepted by Company, the payments under the contract shall only be made to the JV/Consortium and not to the individual partners.

10) BANK A/C.

Separate Bank A/c. shall be opened in the name of the JV/Consortium in a scheduled or Nationalized Bank in India as per mutual Agreement and all payments due to the JV/Consortium shall be received only in that account, which shall be operated jointly by the representative of the Parties hereto. The financial obligations of the JV/Consortium shall be discharged through the said JV/Consortium Bank Account only and also all the payments received or paid by Company to the JV/Consortium shall be through that account alone.

11) LIMIT OF JV/CONSORTIUM ACTIVITIES.

The JV/Consortium activities are limited to the bidding and in case of award, to the performance of the Contract for the Project according to the conditions of the Contract with the Employer.

12) TAXES.

Each Party shall be responsible for its own taxes, duties and other levies to be imposed on each party in connection with the Project. The taxes, duties and other levies imposed on the JV/Consortium in connection with the Project shall be paid from the account of the JV/Consortium.

13) EXCLUSIVITY

The Parties hereto agree and undertake that they shall not directly or indirectly either individually or with other party or parties take part in the Bid for the said Project. Each party further guarantees to the other party hereto that this undertaking shall also apply to its subsidiaries and companies under its direct or indirect control.

14) MISCELLANEOUS:

a. Neither party of the JV/Consortium shall assign, pledge, sell or otherwise dispose all or part of its respective interests in the JV/Consortium to all third party without the Agreement of the other party in writing.

b. Subject to the above Clause, the terms and conditions of this agreement shall be binding upon the parties, the Directors, Officers, Employees, Successors, Assigns and Representatives.

15) APPLICABLE LAW

This agreement shall be interpreted under laws and regulations of India.

IN WITNESS Whereof the parties hereto have hereunder set their respective hands and seals the day, month, year first above written.

For

For.....

Signature _____

Signature _____

(Name & Address)
(Official Seal)

(Name & Address)
(Official Seal)

Place

Place.....

Date

Date

Witness

Witness

Signature
(Name & Address)

Signature
(Name & Address)

Annexure-VIII

PRE CONTRACT INTEGRITY PACT

(To be signed on plain paper)

General

This pre-bid pre-contract Agreement (hereinafter called the Integrity Pact) is made on.....day of the month of20..., between, on one hand, Coal India Limited/Subsidiary Cos. acting through Shri, Designation of the officer, (hereinafter called the “BUYER / Principal”, which expression shall mean and include, unless the context otherwise requires, his successors in office and assigns) of the First Part and M/s.represented by Shri....., Chief Executive Officer (hereinafter called the “BIDDER/Seller/Contractor” which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the Second Part.

WHEREAS the BUYER proposes to execute (Name of the work) and the BIDDER/Seller is willing to offer/has offered the Services and

WHEREAS the BIDDER is a private Company / public Company / Government undertaking/ partnership/ proprietorship/ JV/Consortium constituted in accordance with the relevant law in the matter and the BUYER is a Ministry/ Department of the Govt. of India/ PSU performing its functions on behalf of the President of India.

NOW, THEREFORE,

To avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to: -

Enabling the BUYER to complete the desired work at a competitive price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption on public procurement and Enabling BIDDERS to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the BUYER will commit to prevent corruption, in any form, by its officials by following transparent procedures.

The parties hereto hereby agree to enter into this Integrity Pact and agree as follows:

Section 1 – Commitments of the Principal

(1) The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles: - a. No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to. b. The Principal will, during the tender process treat all Bidder(s) with equity and

reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution. c. Principal will exclude from the process all known prejudiced persons. (2) If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the IPC/ PC Act, or if there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer and in addition can initiate disciplinary actions.

Section 2 - Commitments of the Bidder(s)/ Contractor(s)

(1) The Bidder(s) / Contractor(s) commit themselves to take all measures necessary to prevent corruption. The Bidder(s) / Contractor(s) commit themselves to observe the following principles during participation in the tender process and during the contract execution.

a. The Bidder(s) / Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person, any material or other benefit which he/ she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.

b. The Bidder(s) / Contractor(s) will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, Subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelisation in the bidding process.

c. The Bidder(s)/ Contractor(s) will not commit any offence under the relevant IPC/ PC Act; further the Bidder(s) / Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

d. The Bidder(s) / Contractor(s) of foreign origin shall disclose the name and address of the Agents/ representatives in India, if any. Similarly, the Bidder(s) /Contractor(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any. Further details as mentioned in the "Guidelines on Indian Agents of Foreign Suppliers" shall be disclosed by the Bidder(s) / Contractor(s). Further, as mentioned in the Guidelines all the payments made to the Indian agent/ representative have to be in Indian Rupees only. Copy of the "Guidelines on Indian Agents of Foreign Suppliers" shall be as per the provisions at Annexure-A.

e. The Bidder(s) / Contractor(s) will, when presenting their bid, disclose any and all payments made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.

f. Bidder(s) / Contractor(s) who have signed the Integrity Pact shall not approach the Courts while representing the matter to IEMs and shall wait for their decision in the matter.

(2) The Bidder(s) / Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

Section 3 - Disqualification from tender process and exclusion from future contracts

If the Bidder, before contract award, has committed a transgression through a violation of Section 2 or in any other form such as to put his reliability or credibility as Bidder into question, the Principal is entitled to disqualify the Bidder from the tender process or to terminate the contract, if already signed, for such reason.

(1) If the Bidder / Contractor / Supplier has committed a transgression through a violation of Section 2 such as to put his reliability or credibility into question, the Principal is also entitled to exclude the Bidder / Contractor / Supplier from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the circumstances of the case, in particular the number of transgressions, the position of the transgressors within the Company, hierarchy of the Bidder and the amount of the damage. The exclusion will be imposed for a minimum of 6 months and maximum of 3 years.

(2) A transgression is considered to have occurred if the Principal, after due consideration of available facts and evidences within his / her knowledge concludes that there is a reasonable ground to suspect violation of any commitment listed under Section 2 i.e “Commitments of Bidder(s) / Contractor(s)”.

(3) The Bidder accepts and undertakes to respect and uphold the Principal’s absolute right to resort to and impose such exclusion and further accepts and undertakes not to challenge or question such exclusion on any ground, including the lack of any hearing before the decision to resort to such exclusion is taken. This undertaking is given freely and after obtaining independent legal advice.

(4) If the Bidder / Contractor / Supplier can prove that he has restored / recouped the damage caused by him and has installed a suitable corruption prevention system, the Principal may revoke the exclusion prematurely.

Section 4 - Compensation for Damages

(1) If the Principal has disqualified the Bidder(s) from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent to Earnest Money Deposit/ Bid Security.

(2) If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to Section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages of the Contract value or the amount equivalent to Performance Bank Guarantee.

Section 5 - Previous transgression

(1) The Bidder declares that no previous transgressions occurred in the last three years with any other Company in any country conforming to the anticorruption approach or with any Public Sector Enterprise in India that could justify his exclusion from the tender process.

(2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or action can be taken as per the procedure mentioned in "Guidelines on Debarment of firms from Bidding".

Section 6 - Equal treatment of all Bidders / Contractors / Sub-Contractors

(1) In case of Sub-contracting, the Principal Contractor shall take the responsibility of the adoption of Integrity Pact by the Sub-Contractor.

(2) The Principal will enter into agreements with identical conditions as this one with all Bidders and Contractors.

(3) The Principal will disqualify from the tender process all bidders who do not sign this Pact or violate its provisions.

Section 7- Criminal charges against violating Bidder(s)/Contractor(s)/ Sub-Contractor(s)

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Sub-Contractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the same to the Chief Vigilance Officer.

Section 8 - Independent External Monitor

(1) The Principal appoints competent and credible Independent External Monitor for this Pact after approval by Central Vigilance Commission. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

(2) The Monitor is not subject to instructions by the representatives of the parties and performs his/ her functions neutrally and independently. The Monitor would have access to all Contract documents, whenever required. It will be obligatory for him / her to treat the information and documents of the Bidders/Contractors as confidential. He/ she reports to the Chairman, Coal India Limited / CMD, Subsidiary Companies

(3) The Bidder(s) / Contractor(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the Principal including that provided by the Contractor. The Contractor will also grant the Monitor, upon his/ her request and demonstration of a valid interest, unrestricted and unconditional access to their project documentation. The same is applicable to Sub-Contractors.

(4) The Monitor is under contractual obligation to treat the information and documents of the Bidder(s) / Contractor(s) / Sub-Contractor(s) with confidentiality. The Monitor has also signed declarations on 'NonDisclosure of Confidential Information ' and of 'Absence of Conflict of Interest'. In case of any conflict of interest arising at a later date, the IEM shall inform Chairman, Coal India Limited / CMD, Subsidiary Companies and recuse himself / herself from that case.

(5) The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.

(6) As soon as the Monitor notices, or believes to notice, a violation of this agreement, he/ she will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or to take other relevant action. The Monitor can in this regard submit non-

binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.

(7) The Monitor will submit a written report to the Chairman, Coal India Limited / CMD, Subsidiary Companies within 8 to 10 weeks from the date of reference or intimation to him by the Principal and, should the occasion arise, submit proposals for correcting problematic situations.

(8) If the Monitor has reported to the Chairman, Coal India Limited / CMD, Subsidiary Companies, a substantiated suspicion of an offence under relevant IPC/ PC Act, and the Chairman, Coal India Limited / CMD, Subsidiary Companies has not, within the reasonable time taken visible action to proceed against such offence or reported it to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Central Vigilance Commissioner.

(9) The word 'Monitor' would include both singular and plural. Section 9 - Pact Duration This Pact begins when both parties have legally signed it. It expires for the Contractor 12 months after the last payment under the contract, and for all other Bidders 6 months after the contract has been awarded. Any violation of the same would entail disqualification of the bidders and exclusion from future business dealings.

If any claim is made / lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged / determined by Chairman Coal India Limited / CMD, Subsidiary Companies.

Section 10 - Other provisions

(1) Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.

(2) If the Contractor is a partnership or Joint Venture (JV/CONSORTIUM), this agreement must be signed by all partners or JV/CONSORTIUM members.

(3) Should one or several provisions of this Agreement turn out to be invalid, the remainder of this Agreement remains valid. In this case, the parties will strive to come to an Agreement to their original intentions.

(4) Issues like Warranty / Guarantee etc. shall be outside the purview of IEMs.

(5) In the event of any contradiction between the Integrity Pact and its Annexure, the Clause in the Integrity Pact will prevail.

Section 11- Facilitation of Investigation

In case of any allegation of violation of any provisions of this Pact or payment of commission, the BUYER or its agencies shall be entitled to examine all the documents including the Books of Accounts of the BIDDER and the BIDDER shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

Section 12- Law and Place of Jurisdiction

This Pact is subject to Indian Law. The place of performance and jurisdiction is the seat of the BUYER.

Section 13- Other Legal Actions.

The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

(For & On behalf of the Principal) (For & On behalf of Bidder/ Contractor)

(Office Seal)

(Office Seal)

Place -----

Date -----

Witness 1:
(Name & Address)

Witness 2:
(Name & Address)

ANNEXURE- A

Guidelines for Indian Agents for Foreign supplier (Part of Integrity Pact)

5. Authorized Indian Agent of a foreign manufacturer or indigenous manufacturer is also eligible to quote on behalf of its principal against the tender, in case manufacturer as a matter of corporate policy does not quote directly. However, in such case, authorized Indian Agent shall have to upload scanned copy of tender specific Manufacturer's Authorization, signed and stamped by the manufacturer to quote against the CIL Tender, indicating the Tender Reference No. and date along with the offer. The authorized Indian Agent is to upload scanned copies of details in respect of its organization along with the copies of document like certificate of incorporation / registration etc. along with the offer. The firm (Indian Agent) should be in existence for 3 years on the date of tender opening, irrespective of date of appointment as Indian Agent.
In case an Indian Agent is participating in a tender on behalf of one manufacturer, it is not allowed to participate / quote on behalf of another manufacturer in this tender or in a parallel tender for the same item. Further, in a tender, either manufacturer can quote or its authorized Indian Agent can quote but both are not allowed to participate/ quote in the same tender. Also, one manufacturer can authorize only one agent to quote in the same tender. All the bids, not quoted as per the above guidelines, will be rejected.
6. The Foreign manufacturer must indicate the name & address of its agent in India. It should also indicate the commission payable to them and the specific services rendered by them. The Indian Agency commission will be payable only on FOB prices of goods and it should be quoted as a percentage of the FOB price. In case, the foreign manufacturer does not have any Indian Agent, it should be clearly mentioned in the bid. In terms of Integrity Pact, the Bidder has also to disclose all payments to agents, brokers or any other intermediaries. The amount of agency commission payable to Indian Agent should not exceed 5% or what is specified in agency agreement, whichever is lower.
7. In addition to above A certificate that no commission is payable by the principal supplier to any agent, broker or any other intermediary against this contract other than percentage as indicated in BOQ (not exciding 5% of FOB) of FOB value of the contract to Indian Agent. This certificate forms a part of letter of credit.
8. The payment of Indian Agency Commission, if any, involved, may be considered in case of necessity, subject to compliance of the Government of India guidelines issued from time to time. The name of the Indian Agent with their full address and the quantum of Agency commission if any, payable shall have to be mentioned in the offer by the foreign manufacturer. The following documents shall be submitted by the Bidder in case of contract with foreign principals involving Indian agents:
 - a. Foreign principal's pro-forma invoice or any other authentic document indicating the commission payable to the Indian agent, nature of after sales service to be rendered by the Indian Agent and the precise relationship between the Principal and the Agent and their mutual interest.

b. Copy of the agency agreement if any with the foreign principal stating the precise relationship between them and their mutual interest in the business. However, if all the details given in Para – (i) are complied with, the requirement of submission of document mentioned at Para – (ii) may be waived.

9. Agency commission, if any, shall be paid in equivalent Indian Rupees.

Annexure-IX

PROFORMA FOR EXECUTION OF AGREEMENT

STAMP PAPER

(of appropriate value as per Stamp Act)

This agreement is made on day of between (Name of Company) having its registered office at (hereinafter called the ‘COMPANY’ which expression shall, unless repugnant to the subject or context, include its successors and assignees) of the one part and (Name of the Contractor) carrying on business as a (partnership/ proprietorship/ Ltd. Co. etc.) firm under the name and style (hereinafter called the ‘said Contractor’ which expression shall, unless the context requires otherwise include them and their respective heirs, executors, administrators and legal representatives) of the other part.

Whereas the Company invited tenders for the work of “.....” and whereas the said Contractor/ Firm submitted tender for the said work and deposited a sum of Rs..... as Earnest Money and whereas the tender of the said contract has been accepted by the Company for execution of the said work.

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

- 1) In this agreement words and expressions shall have the same meaning as are respectively assigned to them in the tender papers hereinafter referred to.
- 2) The following documents which are annexed to this agreement should be deemed to form and be read and construed as part of this agreement viz.
 - i) Annexure-A Tender Notice (Page .. to ..)
 - ii) Schedule –A General Terms & Conditions, Special Conditions and General Technical Specification (Page to ...) and Safety Code.
 - iii) Schedule-B The probable Quantities and Amount (Page ... to ...)

Occupation :

Signed by Srion behalf of
(Name of Company) in presence of -

Signature

- a) Name :
- b) Address: .

Signature

Annexure-X

PROFORMA FOR UNDERTAKING

(To be uploaded by the Bidder on his Letter Head during submission of bid online)

I / We,, Proprietor/Partner/Legal Attorney/Director/ Accredited Representative of M/S., solemnly declare that:

1. Myself / Our Partners/ Directors don't has/have any relative as employee of Coal India Limited/ SECL/ other Subsidiaries.

OR

The details of relatives of Myself/Our Partners/Directors working as employee of Coal India Limited/ SECL/ other Subsidiaries is as follows:

- a) Name of the employee
- b) Place of posting
- c) Department
- d) Designation
- e) Type of relation - Wife/Husband/ Father/ Step-Father/Mother / Step-Mother/ Son/Step-son/ Son's wife / Daughter / Daughter's Husband / Brother/ Step-Brother/ Sister / Stet-Sister.

2. *I/We hereby confirm that we have registration with CMPF / EPF Authorities. We shall make necessary payments as required under law.

Or

*I/We hereby undertake that we shall take appropriate steps for registration as relevant under CMPF / EPF authorities, if applicable. We shall make necessary payments as required under law.

* Delete whichever is not applicable.

3. ** I/We have not been banned or delisted by any Govt., or Quasi Govt. Agencies or PSUs.

Or

**I/ Wehave been banned by the organization named “ _____ ” for a period of..... year/s, effective from to.....

** Delete whichever is not applicable.

4. We,.....
.....(Name of Partners of Partnership Firm/Joint Venture), partners of
.....(Name of Partnership Firm/Joint Venture) hereby consent to abide by the provisions of Clause 19 and 20 of General Terms and Conditions pertaining to arbitration.
(Applicable in case of Partnership firm/Joint Venture)

5. We certify that the works/services offered by us against the tender for the work “.....(Name of work)” against NIT No/Tender ID. Dated....., meet the minimum local content requirement and has local content:

* Equal to or more than 50% (Select this, in case of Class-I Local Suppliers) i.e.....% (indicating the percentage of local content)

* More than 20% but less than 50% (Select this, in case of Class-II Local Suppliers) i.e.....% (indicating the percentage of local content)

*Delete whichever is not applicable.

6. The NEEGG of the offer is 23.548% CUF (minimum 82.48 million units) at the Delivery Point for the first year. The degradation in NEEGG quoted for any year is not more than 0.5% of that quoted for the previous year.

Year	CUF (in percentage)	Net Electrical Energy Generation Guarantee (in kWh)
Year 1		
Year 2		
Year 3		
Year 4		
Year 5		
Year 6		
Year 7		
Year 8		
Year 9		
Year 10		

7. Certificate regarding compliance to order no.F.No.6/18/2019-PPD dt 23/7/2020 as amended from time to time of Ministry of Finance, Dept of Expenditure, Public Procurement Division with respect to restrictions on procurement of goods, services or works from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries - I/we have read the Clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries; I/we certify that I am/ we are not from such a country or, if from such a country, has/have been registered with the Competent Authority and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority. I hereby certify that I/we fulfil all requirements in this regard and I am/ we are eligible to be considered.

(Where applicable, evidence of Competent Authority shall be attached along with this undertaking.)

3. If any information and document submitted is found to be false/ incorrect at any time, department may cancel my/our Bid and action as deemed fit may be taken against me/us, including termination of the contract, forfeiture of all dues including Earnest Money and banning of our firm and all partners of the firm etc. as per Annexure-XVI – Guidelines on Debarment of Firms from Bidding.

Annexure-XI

ILLUSTRATIVE COMPUTATION OF EVALUATED BID VALUE (EBV)

The Evaluated Bid Value (EBV) shall be calculated using the following parameters: Parameters Quoted by the Bidder:

- i. Quoted Supply Price (in INR),
- ii. Quoted Works Price (in INR),
- iii. Quoted O&M Price for each year during the O&M period (of 10 years) (in INR),

Parameters assumed constant for evaluation of each Bidder:

The Evaluated Bid Value (EBV) shall be calculated using the abovementioned parameters as follows:

Step 1		Quoted total Supply Price (in INR)
Step 2		Quoted total Works Price (in INR)
Step 3		Total of 10 years of O&M Cost quoted by the Bidder (in INR)
Step 4	ADD	Summation of Supply Price, Works Price and Total of O&M Price for 10 years (in INR) (sum of Step 1 to 3)

The Evaluated Bid Value (EBV) shall be the Net Present Value (NPV) as calculated above.

Evaluated Bid Value (EBV) = [(Quoted Supply Price) + (Quoted Works Price) + (Total NPV of each year O&M Contract Price of 10 years)]

The Bidder with the lowest EBV in INR shall be the Successful Bidder.

FORMAT FOR SUBMISSION OF PRICE BID (For Illustration Purpose Only)

Supply Cost (INR)	Works Cost (INR)	Total O&M Cost for 10 yr (Minimum 9% of the Supply +Works)	EBV (INR)
(A)	(B)	(C)	$F=(A+B+C)$

EXAMPLE:

The following example will further clarify the methodology of comparison:

Figures Quoted by Bidder 1:

Supply Cost (INR)	Works Cost (INR)	Total O&M Cost for 10 yr (Minimum 9% of the Supply +Works)	EBV (INR)
(A)	(B)	(C)	$F=(A+B+C)$
150,00,00,000	50,00,00,000	18,00,00,000	218,00,00,000

EBV of Bidder 1 is INR. **218,00,00,000**

Figures Quoted by Bidder 2:

Supply Cost (INR)	Works Cost (INR)	Total O&M Cost for 10 yr (Minimum 9% of the Supply +Works)	EBV (INR)
(A)	(B)	(C)	$F=(A+B+C)$
160,00,00,000	60,00,00,000	19,80,00,000	239,80,00,000

EBV of Bidder 2 is INR **239,80,00,000**.

EBV of Bidder 1 is lower than Bidder 2.

Bidder with lower EBV in INR shall be L-1. Hence, in the above illustrative computation, Bidder 1 would be preferred as the Successful Bidder (L-1) compared to Bidder 2.

Annexure-XII

FORMAT FOR DETAILED PROJECT SCHEDULE

(to be furnished by the Bidder in the Bid in form of Gantt Chart or PERT Chart)

Sl. No.	Activity	Weeks							
		W1	W2	W3	Wn
1.									
2.									
3.									

Note: The Bidder shall ensure that the Project COD is achieved within 365 days (i.e. 12 months) from the date of commencement.

Annexure-XIII

NO CLAIM CERTIFICATE
(on company letterhead)

To,
(Contract Executing Officer)

Procuring Entity _____

NO CLAIM CERTIFICATE

Sub: Contract Agreement no. ----- dated -----for the supply of -----

We have received the sum of Rs. (Rupees _____only) in full and final settlement of all the payments due to us for the supply of under the above mentioned contract agreement, between us and..... We hereby unconditionally, and without any reservation whatsoever, certify that with this payment, we shall have no claim whatsoever, of any description, on any account, against Procuring Entity, against aforesaid contract agreement executed by us. We further declare unequivocally, that with this payment, we have received all the amounts payable to us, and have no dispute of any description whatsoever, regarding the amounts worked out as payable to us and received by us, and that we shall continue to be bound by the terms and conditions of the contract agreement, as regards performance of the contract.

Yours faithfully,

Signatures of contractor or Officer authorized to sign the contract documents on behalf of the contractor.
(Company stamp)

Date:

Place:

(This certificate shall be accompanied by the Power of attorney of the signatory)

Annexure-XIV

PROFORMA FOR BANK GUARANTEE AGAINST RELEASE OF RETENTION MONEY DEDUCTED FROM RUNNING ON ACCOUNT BILLS.

To

Re: Bank guarantee in respect of contract No.....
Dated..... between (Name of the) And
..... (Name of the Contractor)

WHEREAS

..... (Name and address of the Contractor) (herein after called “the Contractor”) has entered into a contract dated.....(herein after called the said contract) with (name of the Company) (hereinafter called “the Company”) to execute (name of the contract and brief description of work) on the terms and conditions contained in the said contract.

It has been agreed that the Contractor shall furnish a Bank Guarantee from a Scheduled Bank for a sum of Rs..... as security for release of equivalent amount of Retention Money/Bid Security as per Terms and Conditions of the said Contract.

We..... (name of the Bank) having its branch/Office at..... have, at the request of the Contractor, agreed to furnish this bank Guarantee by way of Bid Security.

NOW, THEREFORE, we the..... Bank (herein after called The Bank) hereby, unconditionally and irrevocably, guarantee and affirm as follows:

The Bank do hereby irrevocably guarantee and unconditionally agree with the Company that if the Contractor shall in any way fail to observe or perform the Terms and Conditions of the said Contract or shall commit any breach of its obligation thereunder, the Bank shall on its mere first written demand, and without any objection, demur and without any reference to the Contractor, pay to the Company the said sum of or such portion as shall then remain due with interest without requiring the Company to have recourse to any legal remedy that may be available to it to compel the Bank to pay the sum, or failing on the Company to compel such payment by the Contractor.

Any such demand shall be conclusive as regards the liability of the Contractor to the Company and as regards the amount payable by the Bank under this guarantee. The Bank shall not be entitled to withhold payment on the ground that the Contractor has disputed its liability to pay or has disputed the quantum of the amount or that any arbitration proceeding or legal proceeding is pending between the Company and the Contractor regarding the claim. The Bank further agree that the Guarantee shall come into force from the date hereof and shall remain in force and effect till the period that will be taken for the performance of the said Contract which is likely to be day of but if the period of Contract is extended either pursuant to the provisions in the said Contract or by mutual agreement between the Contractor and the Company, the Bank shall renew the period of the Bank Guarantee failing which it shall pay to the Company

the said sum of Rs..... or such lesser amount of the said sum of Rs..... as may be due to the Company and as the Company may demand.

This Guarantee shall remain in force until the dues of the Company in respect of the said sum of Rs..... and interest are fully satisfied and the Company certifies that the Contract has been fully carried out by the Contractor and he has discharged the guarantee.

The Bank further agrees with the Company that the Company shall have the fullest liberty without consent of the Bank and without affecting in any way the obligations hereunder to vary any of the Terms and Conditions of the said Contract or to extend time for performance of the said Contract from time to time or to postpone for any time or from time to time any of the powers exercisable by the Company against the Contractor and to forebear to enforce any of the terms & conditions relating to the said Contract and the Bank shall not be relieved from its liability by reason of such failure or extension being granted to the Contractor or to any forbearance, act or omissions on the part of the Company or any indulgence by the Company to the Contractor or any other matter or thing whatsoever which under the law relating to sureties would but for this provision have the effect of relieving or discharging the Guarantor.

The Bank further agrees that in case this Guarantee is required for a longer period and it is not extended by the Bank beyond the period specified above the Bank shall pay to the Company the said sum of Rs..... or such lesser sum as may then be deemed to the Company and as the Company may require.

This Bank Guarantee shall also be operative at our Branch located at(detailed address), from whom, confirmation regarding issue of this guarantee or extension/renewal thereof shall be made available on demand.

Any notice by way of request, demand or otherwise hereunder may be sent by post/e-mail/Fax addressed to the bank branch / operative branch, which shall be deemed to be a sufficient demand notice. Bank shall effect payment thereof forthwith.

The details of outstation Bank issuing the Bank Guarantee are as below.

- i) Complete Postal Address with PIN Code -
- ii) Branch Code -
- iii) IFSC Code –
- iv) SWIFT –
- v) Telephone No. –
- vi) Fax No. –
- vii) Email ID –

The details of Local Operating Branch of the Bank issued the Bank Guarantee are as below. i)

- i) Complete Postal Address with PIN Code -
- ii) Branch Code -
- iii) IFSC Code –
- iv) SWIFT –
- v) Telephone No. –
- vi) Fax No.

vii) Email ID –

Whenever there is change in postal address and/or other details of this branch issued the guarantee and/or the operative branch, we(the issuing bank) will ensure to intimate respective Area, being the beneficiary, of such changed address, telephone number, fax number and e-mail ID.

Notwithstanding anything contained herein the liability of the Bank under this Guarantee is restricted to Rs..... The Guarantee shall remain in force till the day*..... of*..... and unless the Guarantee is renewed or claim is preferred against the Bank on or before the said date all rights of the Company under this Guarantee shall cease and the Bank shall be relieved and discharged from all liabilities hereunder except as provided in the preceding Clause.

* The date of guarantee shall cover a period of minimum one year or 270 days beyond the date of completion whichever is more.

Any notice by way of request, demand or otherwise hereunder maybe sent by post/e-mail/Fax addressed to the bank branch/operative branch, which shall be deemed to be a sufficient demand notice. Bank shall effect payment thereof forthwith.

This Guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor.

The Bank has under it is constitution power to give this guarantee and Shri who has signed it on behalf of the Bank has authority to do so. Signed and sealed this.....day of.....at.....

SIGNED, SEALED AND DELIVERED

For and on behalf of the Bank by:

- (Signature)
- (Name)
- (Designation)
- (Code number)
- (Address)

“The Bank Guarantee as referred above shall be operative at our branch at..... payable at.....(NIT shall specify town/city of the operative Branch. Bank Guarantee shall specify name of the branch with address of the specified town/city)”

NOTE: - The department shall ensure extension of guarantee period in case of extension of time.

Instructions to Bidders for both the above BGs

NOTES TO BANK GUARANTEES

While issuing the Bank Guarantee, the issuing bank may please note the following.

- i) The bank guarantees issued by the issuing bank on behalf of Contractor, supplier, customer in favour of South Eastern Coalfields Limited shall be in paper form as well as Structured Financial Messaging System (SFMS).
- ii) South Eastern Coalfields Limited has chosen ICICI Bank and State Bank of India to act advising/beneficiary bank of South Eastern Coalfields Limited. The bank issuing the guarantee can choose either of these banks to send confirmation through SFMS.
- iii) The details of beneficiary for issue of bank guarantee in SFMS platform is as furnished as below.

A. ICICI Bank as advising Bank of SECL:

1.	Name of the Beneficiary and his details.	i	Name	SECL 14265
		ii	Area	SECL – HQ. Bilaspur
		iii	Name of Bank	ICICI Bank
		iv	Bank Account No.	028205003346
		v	Department	_____ (Name of concerned Department of the Area)
2.	Beneficiary Bank, Branch and address.	i	Name of Bank	ICICI Bank
		ii	Bank Branch name	Vyapar Vihar, Bilaspur, Chhattisgarh
		iii	Branch code	0282
		iv	Beneficiary Bank Branch IFSC	ICIC0000282
		v	Beneficiary Bank Address	ICICI Bank Ltd., Surya Chambers, Plot No. A/09, Vyapar Vihar, Bilaspur, Chhattisgarh, PIN- 495001

B. State Bank of India as advising Bank of SECL:

1.	Name of the Beneficiary and his details.	i	Name	South Eastern Coalfields Limited (SECL)
		ii	Area	SECL - HQ. Bilaspur
		iii	Name of Bank	State Bank of India
		iv	Bank Account No.	30285470636

		v	Department	(Name of concerned Department of the Area)
2.	Beneficiary Bank, Branch and address.	i	Name of Bank	State Bank of India
		ii	Bank Branch name	SME SBI Branch
		iii	Branch code	4177
		iv	Beneficiary Bank Branch IFSC	SBIN0004177
		v	Beneficiary Bank Address	SBI, Galaxy Height, Vyapar Vihar Bilaspur, PIN-495001, Chhattisgarh

- i) The Supplier / Contractor/ Customers are required to take note of it that above particulars are to be incorporated by the issuing bank properly while issuing the Bank Guarantee under SFMS mode to avoid any future problem in accepting the BGs.
- ii) The Guarantor (BG issuing bank) shall send information about issuance of this Guarantee through SFMS gateway to the **ICICI Bank** (IFSC- ICIC0000282) or **State Bank of India** (IFSC- SBIN0004177), as the case may be, to aid in the process of confirmation of Bank Guarantee.
- iii) The Guarantor (BG issuing bank) shall also send information about issuance of this Guarantee to its local operating branch at **Bilaspur** to aid in the process of confirmation as well as claim for encashment of Bank Guarantee.

The Original Bank Guarantee issued by the outstation bank shall be sent by the Issuing Bank to the Concerned Department of Head Quarters or Area of South Eastern Coalfields Limited at Bilaspur (as the case may be) by Speed Post /Registered Post (AD).

Annexure-XV

FORMAT FOR PRE-BID QUERIES

Sl. No.	Chapter No.	Clause No.	Page No.	Tender Term	Bidder's Query

Sign with seal

Annexure-XVI

GUIDELINES ON DEBARMENT OF FIRMS FROM BIDDING

CIL and its Subsidiary Companies shall follow the following guidelines for effecting 'Debarment of firms from Bidding' with a contracting entity in respect of Works and Services Contracts.

1. Observance of Principle of Natural Justice before banning the business dealings with any contracting entity.
2. The contracting entity bidder/contractor may be debarred in the following circumstances: -
 - i) If Bidder backs out after notification of opening of price bid and if that Bidder is found to be L-1.
 - ii) If L-1 Bidder fails to submit PSD, if any and/or fails to execute the contract within stipulated period.
 - iii) If L-1 Bidder fails to start the work on scheduled time.
 - iv) In case of failure to execute the work as per mutually agreed work schedule.
 - v) Continued and repeated failure to meet contractual Obligations:
 - a) In case of partial failure on performance, agency shall be debarred from future participation in tenders keeping his present contract alive.
 - b) On termination of contract.
 - vi) Willful suppression of facts or furnishing of wrong information or manipulated or forged documents by the Agency or using any other illegal/unfair means.
 - vii) Formation of price cartels with other contractors with a view to artificially hiking the price.
 - viii) The contractor fails to maintain/repair/redo the work up to the expiry of performance guarantee period, when it is specifically brought to his notice.

- ix) Contractor fails to use Mobilisation advance given to him for the purpose it was intended.
 - x) Contractor fails to renew the securities deposited to the department.
 - xi) The contractor fails to rectify any lapse(s) in quality of the work done within defect liability period.
 - xii) Transgression of any clause(s) relating to Contractor's obligation defined in the Integrity Pact wherever such Pact exists.
 - xiii) Any other breach of Contract or misdeed which may cause financial loss or commercial disadvantage to the Company.
3. Such 'Debarment of firms from Bidding, if and when effected, shall be with prospective effect only. The effect of 'Debarment of firms from Bidding' shall be for future tenders from the date of issue of such Order. However, if any contracting entity is debarred after online notification of opening of Price Bid, such a debarment will not be effective for that work.
 4. The debarment shall be for a minimum period of one year and shall be effective for the concerned Subsidiary for the tenders invited at Subsidiary level. However, if such 'Debarment of firms from Bidding' has to be made effective for entire CIL and its Subsidiaries then approval of Chairman, CIL shall be required.
 5. Once a contracting entity is debarred, it shall be extended to the constituents of that entity, all partners in case of JV/Consortium, all the partners in case of Partnership Firm, owner/proprietor in case of Proprietorship Firm and all the Directors in case of Limited Company. If such debarred owner/Proprietor/ Partner/Director make/form different Firms/entity and attempts to participate in tenders, the same will not be entertained during the currency of such debarment.
 6. The above 'Debarment of firms from Bidding' shall be in addition to other penal provisions of NIT/Contract document.
 7. Approving Authority: The 'Debarment of firms from Bidding' of a contracting entity shall be done with the approval of the Competent Authority as per the details below:

- a) In case the Accepting Authority of the work is Board or Empowered Committee or FDs or CMD of CIL/Subsidiary Company, then the Competent Authority for debarment shall be CMD of CIL/Subsidiary Company.
 - b) In case the Accepting Authority of the work is up to the level of Director of CIL/Subsidiary Company, then the Competent Authority for debarment shall be Director of CIL/Subsidiary Company.
8. Appellate Authority shall be one Rank higher than the Competent Authority meant for 'Debarment of firms from Bidding'. In case the debarment is done with the approval of CMD of the Subsidiary Company then Chairman, CIL shall be the Appellate authority.
 9. Any change on the above may be done with approval of FDs of CIL.
 10. All the orders of debarment or orders passed in appeal shall be marked to GM(CMC) / Civil / concerned HODs of CIL/Subsidiary Company. Further, all such orders will be uploaded in Coal India site as well website of the Subsidiary Company.
 11. Efforts shall be made by the concerned Department so that such order is linked to e-tender portal of Coal India Limited.

Annexure-XVII(a): Details of Applicant’s experience for Route-I

(On Applicant’s letterhead)

Details of the Solar Photo Voltaic-based grid connected power project(s) executed by the Applicant as EPC:

Sl. No.	Project name	Capacity (MW AC)	Location of installation	Client / Customer Name, Full Address, Tel No., Fax No., Client contact person (name, designation, mob no, email ID)	Date of award	Date of commissioning	Number of months of successful operation from the last date of bid submission	Current status of project (e.g. under construction, successful operation)	Applicant’s Scope of work in the project (e.g. EPC, O&M)	Whether documentary evidence have been furnished in this Application as per clause 8A of NIT (Yes / No)
1										
2										
3										
	Add rows for more no. of projects									
Total Capacity										

(Sign. & Seal of Authorized Signatory)

Place:

Date:

Note: The details provided here shall be used for assessing eligibility against criterion mentioned in clause **8A** of NIT provided copy of supporting documents are submitted as mentioned in the same.

Annexure-XVII(b): Details of Applicant’s experience for Route-II

(On Applicant’s letterhead)

Details of the Solar Photo Voltaic-based grid connected power project(s) executed by the Applicant as a Developer:

Sl. No.	Project name	Capacity (MW AC)	Location of installation	EPC/ Contractor Name, Full Address, Tel No., Fax No., EPC/ Contractor contact person (name, designation, mob no, email ID)	Date of award of LOA/ Work Order/ Contract Document by the Project Developer	Date of commissioning	Number of months of successful operation from the last date of bid submission	Current status of project (e.g. under construction, successful operation)	Applicant’s Scope of work in the project (e.g. Developer, EPC, O&M)	Whether documentary evidence have been furnished in this Application as per clause 8A of NIT (Yes / No)
1										
2										
3										
	Add rows for more no. of projects									
Total Capacity										

(Sign. & Seal of Authorized Signatory)

Place:

Date:

Note: The details provided here shall be used for assessing eligibility against criterion mentioned in clause **8A** in NIT provided copy of supporting documents are submitted as mentioned in the same.

Annexure-XVIII

PROJECT MASTER PLAN