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# VOLUME - IA TECHNICAL CONDITIONS OF CONTRACT (TCC)

BHARAT HEAVY ELECTRICALS LIMITED



# TECHNICAL CONDITIONS OF CONTRACT (TCC)

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## Chapter - I: Project Information

<b><u>Project Information</u></b>			
NTPC LTD. is establishing a 250 MW Grid connected Solar PV Plant on EPC basis at Near Runija village in Mandsaur District in Madhya Pradesh.. The Plant is divided into 5 blocks, each of 50 MW. BHEL has awarded 1 block of 50 MW.			
1	Customer	:	NTPC LTD.
2	Project Information	:	5x50 MW Solar PV Plant of NTPC at Mandsaur District in Madhya Pradesh.
3	Location	:	Near Runija (V), Madsaur District in Madhya Pradesh
4	Address Detail	:	Near Runija Village, Mandsaur District in Madhya Pradesh
5	Nearest Railway Station	:	Suwasra, Madya Pradesh. Which is about 11km from Runija village
6	Road Approach	:	The project site is located at a distance of 9 km from the Runija Village. Road is available up to 7 km and after that project site is approachable through cart track (2 km).
7	Nearest Air Port	:	Udaipur
11	Ambient Air Temperature (Average)	:	a) Maximum : 42 <sup>o</sup> C b) Minimum : 16 <sup>o</sup> C
12	Average Relative Humidity	:	17-78 %
13	Climatic Condition	:	Tropical Climate

**Bidder is advised to visit the project site and appraise himself about the local conditions and infrastructure available in the area for fulfilling their commitments under the contract. BHEL will not admit any claims whatsoever on account of Contractor's non-familiarization of local conditions.**

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## Chapter – II: Scope & Facilities in the scope of Contractor/BHEL

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### 2.0 SCOPE OF WORK

The scope of work in general are receipt of project material, unloading, storing, preservation, issuing of material with proper documentation and providing & maintaining the site office set up materials as per Annexure-1B for office establishment at project site 1x50 MW Solar Power Project, NTPC, Mandsaur, M.P on as and when required basis for the period of Twelve months- 12 (10 Months for E&C/Material handling activities & 2 months have been considered for unforeseen delay & site closure activities).

Identification of equipment at storage yard, technical assistance for checking and making the shortage/damage reports, taking delivery at storage yard and direct unloading at execution/Assembly site of work under the scope of this tender specification along with the supply of all consumables (slippers, wooden planks, supports, Tarpaulins) tools & tackles (Hydra/Crane, Slings etc.) and all type of manpower (Hydra operator, supervisor, Store keeper, Rigger, helper etc) required for Material handling.

- a. It is not the intent to specify herein all details of material. Any item related to this work not covered, but necessary to complete the system will be deemed to have been included in the scope of the work. (Refer Cl. I)
- b. Site testing wherever required shall be carried out for all standard T& P's
- c. The contractor shall take full responsibility for satisfactory handling of Material & reconciliation under overall guidance of BHEL and shall locate any cause of malfunction and rectify the same for proper operation.
- d. The work shall be executed under the usual conditions without affecting plant construction and in conjunction with other operations and contracting agencies at site. The contractor and his personnel shall cooperate with the personnel of other agencies, co-ordinate his work with others and proceed in a manner that shall not delay or hinder the progress of work as a whole.
- e. All the work shall be carried out as per instructions of BHEL engineer. BHEL engineer's decision regarding the correctness of the work and method of working shall be final and binding on the contractor.
- f. All necessary certificates and licenses required to carry out this work are to be arranged by the contractor expeditiously at his cost.
- g. The contractor shall note that whenever required items/materials shall be unloaded at erection site / assembly yard by the prescribed route without disturbing and causing damage to other

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works in the most professional manner. All items, Hardware, etc., shall be stored in appropriate manner as per instructions of BHEL engineer.

- h. Contractor shall remove all scrap materials periodically generated from his working area in and collect the same at one place earmarked for the same. Load of scraps is to be shifted to a place earmarked by BHEL. Failure to collect the scrap is likely to lead to accidents and as such BHEL reserves the right to collect and remove the scrap at contractor's risk and cost if there is any failure on the part of contractor in this respect.
- i. The contractor shall ensure that his premises are always kept clean and tidy to the extent possible. Any untidiness noted on the part of the contractor shall be brought to the attention of the contractor's site representative who shall take immediate action to clean the surroundings to the satisfaction of the Engineer-in-Charge
- j. The Contractor may have to execute work in such a place and condition where other agencies also will be under such circumstances.
- k. If any item or equipment not covered but requires to be unloaded, same shall be carried out by the contractor. Unit rate shall be considered for payment purpose. The unit rates quoted by the contractor shall be uniform for all the items.
- l. Scope of work covered under this specification requires quality workmanship & Material Management. The contractor shall ensure timely completion of work. The contractor shall have adequate tools, Consumables & etc in his possession. He shall also have adequate trained, qualified and experienced engineers, supervisory staff and skilled personnel.
- m. The manpower deployed by contractor shall match with above scope of works
- n. Contractor shall deploy adequate Manpower for Material Management to meet scope of works and Minimum manpower & T&P's shall be available at site on continuous basis to meet the daily site requirements.
- o. The scope of various material to be handled, indicated in the Chapter-VI of Part-1 CL .7 is indicative only. Bidder shall unload all the material pertaining to 1X50MW SPV Project and site establishment materials as specified in Annex-1B.

### NOTE:

- 1) **Rates are to be filled only in the Rate Schedule.**
- 2) **Chapter-II & III of Part-II contains general guidelines for Material Management.**

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## Chapter – II: Scope & Facilities in the scope of Contractor/BHEL

- 3) The qty indicated in the rate schedule for site establishment is indicative only and is liable for Variation. Payment will be as per actual qty as certified by the BHEL Engineer at site.

S. No.	Description <b>PART I</b>	Scope / to be taken care by		Remarks
		BHEL	Bidder	
<b>3.1</b>	<b>ESTABLISHMENT</b>			
<b>3.1.1</b>	<b>FOR CONSTRUCTION PURPOSE:</b>			
a	Open space for office (as per availability)	Yes		Location will be finalized after joint survey with owner
b	Open space for storage (as per availability)	Yes		Location will be finalized after joint survey with owner
c	Construction of bidder's office, canteen and storage building including supply of materials and other services		Yes	
d	Bidder's all office equipments, office / store / canteen consumables		Yes	
e	Canteen facilities for the bidder's staff, supervisors and engineers etc		Yes	
f	Fire fighting equipments like buckets, extinguishers etc		Yes	
g	Fencing of storage area, office, canteen etc of the bidder		Yes	
<b>3.1.2</b>	<b>FOR LIVING PURPOSES OF THE BIDDER</b>			
a	Open space for labour colony (as per availability)		Yes	Bidder has to take care.
b	Labour Colony with internal roads, sanitation, complying with statutory requirements.		Yes	
<b>3.2.0</b>	<b>ELECTRICITY</b>			
<b>3.2.1</b>	<b>Electricity For construction purposes of Voltage 415/440 V</b>			
a	Single point source		Yes	Bidder has to take care.
b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Duties and deposits including statutory clearances if applicable		Yes	
<b>3.2.2</b>	<b>Electricity for the office, stores, canteen etc of the bidder</b>			Bidder has to take care

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## Chapter – II: Scope & Facilities in the scope of Contractor/BHEL

S. No.	Description	Scope / to be taken care by		Remarks
		BHEL	Bidder	
	<b>PART I</b>			
a	Single point source		Yes	
b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Duties and deposits including statutory clearances if applicable		Yes	
<b>3.2.3</b>	<b>Electricity for living accommodation of the bidder's staff, engineers, supervisors etc</b>		Yes	
a	Single point source		Yes	
b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Duties and deposits including statutory clearances if applicable		Yes	
<b>3.3.0</b>	<b>WATER SUPPLY</b>			
<b>3.3.1</b>	<b>For construction purposes</b>			Bidder has to take care
a	Making the water available at single point		Yes	
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	
<b>3.3.2</b>	<b><u>Water supply for bidder's office, stores, canteen etc</u></b>			
a	Making the water available at single point		Yes	
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	
<b>3.3.3</b>	<b><u>Water supply for Living Purpose</u></b>			Bidder has to take care.
a	Making the water available at single point		Yes	
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	
<b>3.4.0</b>	<b>LIGHTING</b>			

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## Chapter – II: Scope & Facilities in the scope of Contractor/BHEL

S. No.	Description <b>PART I</b>	Scope / to be taken care by		Remarks
		BHEL	Bidder	
a	For construction work (supply of all the necessary materials) 1. At bidder's office/ area		Yes	
b	For construction work (execution of the lighting work/ arrangements) 1. At bidders office/area		Yes	
c	Providing the necessary consumables like bulbs, switches, etc during the course of project work		Yes	
d	Lighting for the living purposes of the bidder at the colony / quarters		Yes	
<b>3.5.0</b>	<b>COMMUNICATION FACILITIES FOR SITE OPERATIONS OF THE BIDDER</b>			Bidder has to take care
a	Téléphone, fax, internet, e-mail etc.		Yes	
<b>3.6.0</b>	<b>COMPRESSED AIR wherever required for the work</b>		Yes	Bidder has to take care
<b>3.7.0</b>	<b>Demobilization of all the above facilities</b>		Yes	Bidder has to take care
<b>3.8.0</b>	<b>TRANSPORTATION</b>			Bidder has to take care
a	For site personnel of the bidder		Yes	
b	For bidder's equipments and consumables (T&P, Consumables etc)		Yes	

### 3.9 Open Space:

Open space for building of temporary office shed, contractor's stores shed(s) will be provided free of hire charges. Contractor has to make his own arrangement for establishing labour colony.

### 3.10 Electricity:

3.10.1 Electricity will be arranged by the contractor.



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## Chapter – II: Scope & Facilities in the scope of Contractor/BHEL

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- 3.10.2 Any duty, deposit while arranging temporary power shall be borne by bidder.
- 3.10.3 Provision of distribution of electrical with proper distribution boards, approved cables and cable laying including supply of all materials like cables, switch boards, pipes etc., observing the safety rules laid down by electrical authority of the state/BHEL/their customer with appropriate statutory requirements shall be the responsibility of the bidder.
- 3.10.4 BHEL is not responsible for any loss or damage to the contractor's equipment as a result of variations in voltage/frequency or interruption in power supply.

### **3.11 Water:**

Water will be arranged by the contractor.

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**Chapter – III: T&Ps and Consumables to be deployed by**  
**contractor**

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**4. List of minimum major Tools & Plants to be deployed by the contractor:**

- a) All T&Ps & Consumables are to be arranged by the contractor at his cost.

<b>T&amp;P and Consumables</b>			
<b>Sl No</b>	<b>Description</b>	<b>Qty</b>	<b>Capacity</b>
01	Hydra with Operator	1 no per block	14MT
02	Diesel	As required	As required
03	Wire rope slings	4 sets per block	2- 25MT Verities
04	Webbing Slings	4 Sets per block	2-15MT Verities
05	Chain block pulley	2 sets per block	Capacity - 3T
06	D-Shackles	4 sets per block	3-5MT Verities
07	Wooden slipper/planks	100 per block	Standard sizes
08	Tarpaulins fire proof	10 nos per block	20'x30'

**4.1 Other Requirements of Contractor's Instruments & T&P**

- a) All the distribution boards, connecting cables, hoses etc., and temporary connection work including electrical connections shall have to be arranged by the contractor at his cost.
- b) The contractor at his cost shall arrange all T&P like cranes, truck/tractor, and trailers required for material handling purpose.
- c) Equipment, vehicles, tools and plants and materials brought to site by the contractor from his resources shall have distinctive identification marks and the description and quantity shall be intimated to BHEL in writing by the contractor.
- d) All construction materials brought by the contractor shall have prior approval regarding quality and quantity by BHEL. The contractor shall also provide without extra cost necessary enclosures containers and protective materials for proper storage of materials inside, whenever so instructed by the purchaser without any extra cost.
- e) No material or equipment or tools etc. shall be taken out of the worksite without the written consent of BHEL.
- f) BHEL shall not be responsible for the safety and protection of the materials of the contractor and the contractor shall make his own arrangements for proper watch and ward for his materials.

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

### Chapter – III: T&Ps and Consumables to be deployed by contractor

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- g) Until such time the work is taken over by BHEL/Execution Agencies, the contractor shall be responsible for proper protection of material. The contractor shall during the progress of work properly cover up and protect any part of the work liable to damage by exposure to the weather and shall take every reasonable precaution against accident or damage to the work from any cause.

**NOTE:**

**THIS ABOVE LIST IS ONLY INDICATIVE AND NEITHER EXHAUSTIVE NOR LIMITING. CONTRACTOR SHALL DEPLOY ALL NECESSARY T&P AND CONSUMABLES TO MEET THE SCHEDULES & AS PRESCRIBED BY BHEL ENGINEER AND REQUIRED FOR COMPLETION OF WORK.**

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## Chapter-IV: Time Schedule

### 5.1 Time Schedule

#### 5.1.1

The entire work of material handling for 1x50MW, NTPC, Mandsaur project shall be completed within 12(Twelve) months from the date of commencement of site work.

#### 5.1.2

During the total period of contract, the contractor has to carry out the activities in a phased manner as required by BHEL and the program of NTPC milestone events.

#### 5.1.3

The Material Handling work shall be commenced as may be stipulated in the letter of intent and shall be deemed as completed in all respect only when the unit is in operation the decision of BHEL in this regard shall be final and binding of the contractor.

#### 5.1.4

Overall project schedule for 1x50MW SPV Power Project as mutually agreed between BHEL & NTPC

Sl. No	Description of mile stone	Duration in months from Notification of Award		Remarks
		Start	Finish	
1	Site mobilization and Preparatory Works	0	0.5	
2	Supply of Panel mounting Structures	2	8	
3	Supply of Solar Panels/PV Modules	3	9	
4	Supply of Inverters and other Electrical equipment's	4	9	
5	Soil investigations	0.5	1	
6	Detailed Engineering and approval	0	5	
7	Site leveling, Structural and civil works	1	6	
8	Erection of Panel mounting structures	2.5	9	
9	Erection of solar panels/PV modules	3.5	10	
10	Erection of Inverters & other electrical equipment's	4.5	10	
11	Commissioning	6	11	
12	Trial Run & Stabilization	10	11	
13	Completion of facilities and plant taking over by NTPC.	11	12	

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-IV: Time Schedule

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### 5.2 Commencement of Contract Period

The date of commencement of contract period shall be within one week of issue of LOI or from date of the mutually agreed date between the bidder and BHEL engineer to start the work. In case of discrepancy the decision of BHEL engineer will be final.

### 5.3 Mobilization for material Handling & Associate works.

#### 5.3.1

Vendor shall reach at site & deploy all the minimum T&P's, Consumable, and Manpower along with Bidder's site establishment as per directions of Construction Manager/ Project Manager of BHEL

#### 5.3.2

In order to meet above schedule in general, and any other intermediate targets set, to meet customer / project schedule requirements, contractor shall arrange & augment all necessary resources from time to time on the instructions of BHEL.

### 5.4 CONTRACT PERIOD

The contract period for completion of entire work under scope shall be **12(Twelve) months** from the —COMMENCEMENT OF CONTRACT PERIOD as specified earlier for completion of the entire work under this package.

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## Chapter-V: Term of Payment

### 6.0 Terms of Payment

Billing scheduled for Material handling and providing & maintaining site office establishment materials at project site 1x50 MW Solar Power Project, NTPC, Mandsaur, M.P

<b>A.Terms of Payment for Material handling is as given below</b>	
<b>A.1</b>	Ninety (95%) percent payment on prorata basis for the work completed as per billing schedule (detailed below) shall be released as progressive payment, on submission of necessary document signed by BHEL site official(s)/Owner. BHEL at their discretion may further break up the above percentage and effect monthly payment in consideration of site requirement, flow requirement etc. during site execution.
<b>A.1.1</b>	Out of the above stated R/A bill payment, 1.5% shall be released for payment against each RA bill in the following manner on certification by BHEL Engineer after compliance of following activity in each month. In case of non-fulfillment of respective activity by contractor in each month, no payment shall be made by BHEL against corresponding activity and no claim of bidder at a later date, whatsoever, in this regard shall be entertained by BHEL.
<b>A.1.1.1</b>	0.6% shall be paid on compliance of housekeeping of vendor's work area.
<b>A.1.1.2</b>	0.3% shall be paid on compliance of general illumination of vendor's working area and stores/offices.
<b>A.1.1.3</b>	0.3% shall be paid on compliance of Safety requirement as per BHEL and as specified in tender.
<b>A.1.1.4</b>	0.3% shall be paid on compliance of applicable OHSAS requirement as per guidelines of BHEL and as specified in the tender.
<b>A.2</b>	Balance five (5%) percentage of the total value shall be released, as per following break-up.
<b>A2.1</b>	Balance five (5%) percentage of the contract price shall be released on i) successful completion of System/package as applicable, i) submission of reconciliation reports ii) submission of BG of equivalent amount valid till completion of Guarantee/warranty period of the units. However, vendor shall comply with all formalities required for final billing/contract closing before drawing the last payment.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-VI: Major Equipments for Material Handling

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### **7.0 List of Major Equipment's for Material Handling for 1X50 MW SPV Project**

1. Solar PV Modules
2. Solar PV Modules Mounting Structures (MMS) along with foundation bolts.
3. DC Cables including MC4 connectors and DWC pipes
4. String Monitoring equipment
5. Power conditioning unit
6. LT/HT Switchgear Panels
7. Inverter Transformers & Auxiliary Transformers
8. LT/HT Cables
9. SCADA
10. Instrumentation & Communication cables
11. Earthing & Lightning Protection System
12. Plant illumination system
13. Auxiliary Power Supply System
14. Battery and Battery Charger
15. UPS
16. Time synchronization Equipment
17. Metering System
18. 33KV Switchyard Equipment's & structures
19. Weather Monitoring Equipment's
20. Fire Detection and protection system
21. DG Set
22. CCTV
23. Balance of Supply(BOS)
24. PEB-Pre Engineered Building materials
25. Module washing system

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-VI: Major Equipments for Material Handling

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**Maximum weight of a consignment/single packing shall be in the range of 7-8MT**

**No material shall be treated as excess material, Bidder shall unload & store all materials pertaining to 1 x50 MW SPV Project, M.P within his quoted rate.**

The contractor shall be responsible for the quality of workmanship and shall guarantee the work done, shall rectify/replace at no extra cost, all defects due to faulty/ Mishandling.

In the event of contractor failing to replace/repair the defective works within the time required BHEL may proceed to undertake the replacement/repairs of such defective supplies/works at the contractor's risk and cost without prejudice to any other points/right

### **Mode of Payment and measurement of work completed**

#### **Refer General Conditions of Contract**

**Note:**

1. Payments against the above Billing break up will be subject to the other statutory deductions, viz. retention amount, TDS towards income tax, security deposits, etc. as per the provisions contained in GCC, SCC, NIT & other contract documents.
2. Payment for the first running bill will be released only on production of the following:
  - i) PF reg No.
  - ii) Labour Licence No.
  - iii) Workmen Insurance Policy No.
  - iv) Unqualified Acceptance for Detailed LOI
  - v) 50% of Security Deposit should be deposited before start of the work & 50% may be recovered from the RA, As per Clause 1.10 of GCC.
  - vi) Signing of Contract Agreement



# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-VII: Taxes, Duties & Levies

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### 8.0 TAXES, DUTIES, LEVIES

#### 8.1. For All types of works

##### 8.1.1

The contractor shall pay all (save the specific exclusions as enumerated in this contract) taxes, fees, license charges, deposits, duties, tools, royalty, commissions or other charges which may be levied on the input goods & services consumed and output goods & services delivered in course of his operations in executing the contract. In case BHEL is forced to pay any of such taxes, BHEL shall have the right to recover the same from his bills or otherwise as deemed fit.

**However, provisions regarding Service Tax on output services and goods shall be as per following clauses.**

##### 8.1.2 Service Tax & Cess on Service Tax

Contractor's price/rates shall be exclusive of Service Tax and Cess on Services. In case, it becomes mandatory for the contractor under provisions of relevant act/law to collect the Service Tax & Cess from BHEL and pay the same to the concerned tax authorities, such applicable amount will be paid by BHEL at the prevailing Service Tax Rate (presently 14.5 %) on the admitted bill value.

Contractor shall submit to BHEL documentary evidence of Service Tax registration certificate specifying name of services covered under this contract. Contractor shall submit serially numbered Service Tax and Cess Invoice, signed by him or a person authorized by him in respect of taxable service provided, and shall contain the following, namely,

- 1. The name, address and the registration number of the contractor,**
- 2. The name and address of the party receiving taxable service,**
- 3. Description, classification and value of taxable service provided and,**
- 4. The service tax payable thereon.**

All the Four conditions shall be fulfilled in the invoice before release of service tax payment.

Wherever, more than one route/option are available for discharge of service tax liability under a particular service, (e.g. "works contract Service"), contractor shall obtain prior written consent from BHEL site before billing the amount towards Service Tax.

#### 8.2 New Taxes/Levies

In case the Government imposes any new levy/tax on the output service/ goods/work after award of the contract, the same shall be reimbursed by BHEL at actual.

In case any new tax/levy/duty etc. becomes applicable after the date of Bidder's offer, the Bidder/Contractor must convey its impact on his price duly substantiated by documentary evidence in support of the same before opening of Price Bid. Claim for any such impact after opening the Price Bid will not be considered by BHEL for reimbursement of tax or reassessment of offer.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-VII: Taxes, Duties & Levies

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No reimbursement/recovery on account of increase/reduction in the rate of taxes, levies, duties etc. on input goods/services/work shall be made. Such impact shall be taken care of by the Price Variation/Adjustment Clause (PVC) if any. In case PVC is not applicable for the contract, Bidder has to make his own assessment of the impact of future variation if any, in rates of taxes/duties/levies etc. in his price bid.

### **8.3 BUILDING & OTHER CONSTRUCTION WORKERS (REGULATION OF EMPLOYMENT AND CONDITIONS OF SERVICE) ACT, 1996 (BOCW Act) AND RULES OF 1998 READ WITH BUILDING & OTHER CONSTRUCTION WORKERS CESS Act, 1996 & CESS RULES, 1998.**

In case any portion of work involves execution through building or construction workers, then compliance to the above titled Acts shall be ensured by the contractor and contractor shall obtain license and deposit the cess under the Act. In the circumstances it may be ensured as under:-

- i. It shall be the sole responsibility of the contractor in the capacity of employer to forthwith (within a period of 15 days from the award of work) apply for a license to the Competent Authority under the BOCW Act and obtain proper certificate thereof by specifying the scope of its work. It shall also be responsibility of the contractor to furnish a copy of such certificate of license / permission to BHEL within a period of one month from the date of award of contract.
- ii. It shall be the sole responsibility of the contractor as employer to ensure compliance of all the statutory obligations under these act and rules including that of payment / deposit of 1% cess on the extant of work involving building or construction workers engaged by the contractor within a period of one month from the receipt of payment.
- iii. It shall be the responsibility of the sub-contractor to furnish the receipts / challans towards deposit of the cess together with the number, name and other details of beneficiaries (building workers) engaged by the sub-contractor during the preceding month.
- iv. It shall be the absolute responsibility of the sub-contractor to make payment of all statutory payments & compensations to its workers including that is provided under the Workmen's Compensation Act, 1923.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-VIII: Specific Inclusion

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**9.0. Contractor shall do the Supply, Erection & Commissioning of the site office setup as per the Annexure –1B .Supply of 6 nos Portable cabins(4 nos for Engg Cabin+01 no for Conference Hall+01 for Toilet & Urinal) with furniture & other fittings on hiring as and when required basis for a period of 12months .These porta cabins shall be used as BHEL site office & bidder shall take back the cabins after 12 months. Details of all porta cabins are as given below.**

Supply of all 6 No's of brand new Portable Cabins (Size: 20 ft X 10 ft X 8.0 ft) on hiring basis for 12 months for BHEL's site office use. If Project schedule is extended, BHEL reserves the right to extend the hiring period at the same rates, terms and conditions for all site office establishment material & Material handling contract.

### **PORTABLE CABIN SPECIFICATION**

**Amenities to be included in each Cabin are given below-**  
**Furniture and Fixtures suitable for 6 members**

#### **Portable cabin Spec for 01 no Qty.**

- Executive Table with Side Table - 01 no.
- Executive Revolving Chair - 01 no.
- Visitor Revolving chair - 03 nos.
- Office Desk Table with drawers - 05 nos.
- Office Revolving Chair - 05 nos.
- Wall mounted cabinet - 05 nos.
- White board of size 750x1000mm - 01 no.
- Perforated Board of size 750x1000mm - 01 no.
- Side Table for Printer -01 no

#### **Portable cabin Spec for 03 no Qty.**

- Visitor revolving chair - 03 nos.
- Office Desk Table with drawers - 06 nos.
- Office Revolving Chair - 06 nos.
- Wall mounted cabinet - 06 nos.
- White board of size 750x1000mm - 01 no.
- Perforated Board of size 750x1000mm - 01 no.
- Side table for Printer

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## Chapter-VIII: Specific Inclusion

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### **Conference Hall portable cabin Spec for 01 no Qty.**

- Big size Round table - 01 nos.
- Office Revolving Chair - 12 nos.
- Wall mounted cabinet - 06 nos.
- White board of size 750x1000mm - 01 no.
- Perforated Board of size 750x1000mm - 01 no.
- Side table for Printer

### **Portable cabin for Staff chemical toilet 1no Qty**

- Flushing western toilet with hand washing & sanitization facilities - 01 no
- Flushing Indian toilet with hand washing & sanitization facilities -01 no
- Soap dispenser & Hand tower dispenser -02 nos
- Urinal toilet -03 nos
- Wash Basin - 01 no.
- Air vent facility
- Mirror -01no

### **General instruction for all Portable Cabins**

#### **Interior cum Insulation**

- Insulated walls with Pre-Laminated Sheet
- Ceiling : Glass Wool Covered with Pre-Laminated Sheet
- Flooring : Cement fiber sheet with PVC vinyl carpet

#### **Other accessories:**

- LED Lights-4, Wall mounted Fans-5, LAN Points-6, TELE Point-1, External Light-1 Aluminum sliding windows, 15 Amp Switch-2, 5 Amp Switch-4, Electrical switch board-1
- Insulated paneling Doors, Safety Grills for all windows, Vertical Blinds For all Windows
- Weather sheds for all door and windows, Partition(laminated sheet both sides) with internal Door facility, Corrosion free and fire proof paints
- The Air Conditioner will be 1.5 T capacity & should of 5 Star BEE rating.

#### **Maintenance:**

- During hiring period, maintenance & cleaning of the Porta cabin and accessories shall be in the scope of bidder.

#### **Note:**

- Supply, transportation & installation of Porta cabins to the worksite shall be in the scope of bidder.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-VIII: Specific Inclusion

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- Removal of Porta cabins from the work site & transportation after completion of all the activities of E&C related to this project shall be in the scope of bidder. Porta Cabins shall remain the property of the supplier after the completion of the hiring period.
- Power Cable (approx. 50m of length) shall be in the scope of bidder.
- Earthquake resistant

### **Technical Spec for DG Set-Silent DG**

#### **Diesel Engine**

New Kirloskar/CUMMINS/or any other reputed brands with silent version, cabling to the load to be included. 3 cylinder, inline, 4 stroke cycle, water cooled natural aspirated, developing rated power at 1500 RPM under NTP condition of BS:5514. The engine shall be provided with electrical starting arrangement & shall give the rated electrical output at 0.8 pf, 415V at the alternator terminal.

#### **Alternator**

Single bearing alternator suitable for operation generating on required KVA rating at 1500 RPM, 415 Volts, 0.8 pf(lag) suitable for 50 Hz, 3 phase, 4 wired system, confirming to BS5000/IS 4722. The Alternator is brushless type, screen protected, revolving field, self-excited, self-generated through an AVR. The alternator should have the following feature

±1.0% Voltage regulation (max) in static conditions

IP: 23 protections with insulation class H

Permissible overload of 10% for one Hr in 12 Hours of operation

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-VIII: Specific Inclusion

Hiring of Site Establishments		ANNEXURE-1B	
Sl no	Description	Unit	Qty
<b>B1.1</b>	Porta Cabin 5nos (Hire):Initially 3 porta cabin including conference cabin to accommodate 12 Engineer for 12 months & 2 more porta cabin during pick hr for 6 month to accommodate addl 10 staff),total month=36+12=48months	Porta cabin months	48
<b>B1.2</b>	PC for office(Hire) -3 nos (Specification: Processor-Intel Core TM i5-2400 CPU @ 3.10 GHz, 8 GB RAM, 500 GB Hard Disk, LCD Monitor with Windows 7, MS office, AutoCAD software installed)	PC months	36
<b>B1.3</b>	Hire of Air conditioner for office use (Split AC, 1.5 Ton -5 nos)Initially 3no for 12 month & addl 2 no for 6 months during commissioning.total month=36+12=48months	AC months	48
<b>B1.4</b>	AMC/Installation of PCs & Networking-3 nos	months	36
<b>B1.5</b>	Refrigerator -1no	months	12
<b>B1.6</b>	Portable cabin for Chemical Toilet with septic tank-1 nos	Porta cabin months	12
<b>B1.7</b>	Packaged drinking water in 20L =5 bottle per day	Lit	36000
<b>B1.8</b>	Water for general pupose to be stored in sintex tank-1000lit/day	Lit	365000

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-VIII: Specific Inclusion

<b>B1.9</b>	DG Set(Kirloskar/cummin sileant version) cabling up to load-12.5 KV-2 Nos & 5KV-1Nos(Total 3 nos)	DG months	36
<b>B1.10</b>	Diese ,12 hr operation per day,payment will be made on market rate.Estimated 1000lit per months	Lit	12000
<b>B1.11</b>	Sintex Tank-2000litrs including plumbing,Motor & etc	months	12
<b>B1.12</b>	office boy cum messenger -1 nos	months	12
<b>B1.13</b>	Internet Connection ( BB/Data card/Router) - 6 no.	Data months	72
<b>B1.14</b>	Xerox cum scanner cum printer (Hire)-3Nos	Printer months	36
<b>B1.15</b>	Tarpaulins(Hire) 10Nos.	Tar months	120

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-I General

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### 1.0 GENERAL

- 1.1 All the work shall be carried out as per the instructions of BHEL engineer. BHEL engineer's decision regarding the correctness of the work and method of working shall be final and binding on the Bidder.
- 1.2 The Bidder shall at his cost perform any services, tests etc, although not specified but nevertheless required for the completion of work.
- 1.3 If any portion of the work is found to be defective in workmanship or not conforming to BHEL requirements ,the Contractor shall re-do the work at his cost failing which the work will be got done by BHEL at the cost and risk of the contractor.
- 1.3 The terminal points as decided by BHEL shall be final and binding on the Contractor.
- 1.4 All tools and tackles, fixtures, equipment, materials, manpower, supervisors/ engineers, consumables etc. required for this scope of work shall be provided by the Contractor. All expenditure including taxes and incidentals in this connection will have to be borne by him unless otherwise specified in the relevant clause.
- 1.5 The contractor shall make adequate security arrangements including employment of security personnel and ensure protection from theft, fire, pilferage, damage and loss of materials/equipment kept under bidder custody.
- 1.6 All equipment shall be handled very carefully to prevent any damage or loss. No bare wire ropes, slings etc, shall be used for handling of the equipment without the specific permission of the engineer.
- 1.7 Contractor shall ensure proper housekeeping and remove all scrap materials periodically from various work area covered in the scope and deposit the same at the place earmarked for this purpose. In case of contractor's failure to do the same, BHEL reserves the right to remove scrap at contractor's cost and risk.
- 1.8 Access to site for inspection by BHEL and customer engineers shall be made available by the contractor at all times.
- 1.9 Contractor shall mobilize sufficient quantity of sleepers for stacking of materials in his custody.
- 1.10 Site Inspection: The owner/employer /BHEL or his authorized agents may inspect various stages of work during the period of contract awarded to him. The contractor shall make necessary arrangements for such inspection and carryout the rectification pointed



# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-I General

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out by the owner/employer without any extra cost. No cost whatsoever for such duplication of inspection/work will be entertained.

- 1.11 Filed Quality Assurance Formats: It is the responsibility of the contractor to collect and fill up relevant FQA Log sheets and present the same to BHEL after carrying out the necessary checks as per the log sheets and obtaining the signature of BHEL/Customer in token of their acceptance. Monthly Running Bill Payment to the contractor will be linked with the submission of these log sheets

### **1.16 COLLECTION AND RETURN OF EQUIPMENT, MATERIALS & CONSUMABLES**

- 1.16.1 The Contractor should note that the transport of equipment to erection site, assembly yards etc should be done by the prescribed route, without disturbing the other works and contractors and in the most professional manner.
- 1.16.2 The contractor shall return all parts, materials & consumables of BHEL remaining unused & extra material in their custody. In case of any misuse or use over actual requirement, BHEL reserves the right to recover the cost of parts/materials used in excess or misused, with departmental charges.
- 1.17 All packing and forwarding material shall be returned as soon as the material is unpacked. The location for storage of such materials shall be as indicated by BHEL Engineer.
- 1.18 The terminal points decided by BHEL should be final and binding on the contractor for deciding the scope of work and effecting payment for the work done.
- 1.19 The contractor shall perform any services, tests etc. Which may not be specified but nevertheless required for the completion of work within quoted rates.
- 1.20 All cranes, transport equipment, handling equipment, tools, tackles, fixtures, equipment, materials, manpower, supervisors/ engineers, consumables etc required for this scope of work shall be provided by the contractor. All expenditure including taxes and incidentals in this connection will have to be borne by him unless otherwise specified in the relevant clauses. The contractor's quoted rates should be inclusive of all such contingencies.
- 1.21 All the materials during storing shall be stored well above ground level as necessary to avoid water ingress etc, by use of wooden/ concrete blocks/ sleepers. No material shall be stored directly on the ground at any time. Concrete blocks/ Sleepers have to be provided by the contractor.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-I General

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- 1.22 No BHEL crane will be available under this tender specification for handling of equipment. Contractor shall take specific note of this aspect and shall arrange all necessary T&P and lifting/handling/transportation arrangements..
- 1.23 For any class of work for which no specifications have been laid down in these specifications, work shall be executed as per the instructions of BHEL & suit the site requirement.
- 1.24 The contractor shall perform all required services which may not be specified herein but nevertheless required for the completion of work within quoted rates.
- 1.25 All cranes, transport equipment, handling equipment, tools, tackles, fixtures, equipment, manpower, supervisors/engineers, consumables (excluding those indicated as BHEL scope), etc required for this scope of work shall be provided by the contractor and shall conform to Safety Requirements/ Load Testing etc. as per BHEL/NTPC,Mandsaur rules & Regulations at site.
- 1.26 All expenditure including taxes and incidentals in this connection will have to be borne by the contractor unless otherwise specified in the relevant clauses elsewhere here. The contractor's quoted rates shall include of all such contingencies. In this connection refer relevant clause of general conditions of contract.
- 1.27 The contractor shall take due precaution during Materials Handling of equipment/works under these specifications to avoid deface, injure, damages, destruction by contractor or his workmen or servants to any pipelines, railway lines, roads, canals, cables, culverts, drains, sewer, telephone lines, water mains, dykes, poles, pillars, fences, wires, supports and embedment's and other underground or over ground works, Structural or constructions whatsoever and shall at his own cost and initiative forthwith restore and repair any damage thereto the entire satisfaction of customer/BHEL at his own expense or in default, the customer/ BHEL site engineer may cause the same to be made good by other agency or by other means and deduct the expense with BHEL overhead (of which the site engineer's decision is final) from any sums that may be then or at any time thereafter become due to the contractor or from his security deposit or any other money due.
- 1.28 As such, the marine cover and erection all risk cover insurance for the project for permanent incorporation of materials and services at site lies with customer. The contractor shall have to take necessary all risk insurance policy (motor vehicles act, worker's compensation act, fatal accidents act, personal injuries insurance act, emergency risk insurance act and/or other industrial legislation from time to time with Indian insurance company(ies) approved by owner **for his manpower and his employees deployed at site under work compensation act including but not limited to third party insurance at NTPC,Mandsaur project along with his T&Ps before starting of the work and shall submit the necessary document/policy in support of above to BHEL/customer at site.**

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-I General

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**The insurance policy taken shall be kept in-force till completion of contract. The workmen's compensation insurance and third party insurance liability limits shall be as customer specification. Contractor shall indemnify the customer NTPC,Mandsaur / BHEL harmless against such losses, which are on account of contractor.**

- 1.29 Recoveries will be made from contractor's bills for any liability accrued to BHEL/ NTPC for the accidents and refund of the same shall be considered later, after the claim is fully settled by insurance authorities.
- 1.30 Customer has taken the marine cover and all risk cover insurance for the project for permanent incorporation of materials and services at site. However contractor shall take all due precautions, arrange & follow the safety & security requirements/regulations for materials issued to him & works under his execution and shall be responsible for safety & security of these materials & works for any loss or damages. For any damage / loss to the material during inland transportation, storage etc., contractor shall intimate promptly to BHEL/customer and shall prepare & submit the necessary detailed report / documents / information, facilitating inspection / discussions by the officials / surveyors deputed by insurer with all expenditure on contractor's account. Contractor shall take care for timely information for conducting survey, submission of monetary estimate & furnish the requisite documents to surveyors/insurer, taking necessary precautions so that the loss/damage is not aggravated further, protecting damaged goods etc. As part of scope of work.

**Contractor shall promptly make repair / rectify/replace and make good any damage or loss to NTPC, Mandsaur /BHEL materials and works on above account as per instructions of BHEL engineer in charge at site without any delay & waiting for settlement of insurance claim from insurer. Contractor's claim (if any) for such works will be settled as per applicable item rate of contract after settlement of claim from insurer / customer & after ascertaining / establishing that contractor is not responsible for such loss or damages. The contractor's claim for such repair / replacement shall not be more than the payment settled by insurer / customer and in such case the contractor's payment will be limited to seventy percent of settled amount by insurer/customer against claim amount.**

- 1.31 The contractor shall submit survey report/performance report of the tools and plants deployed by him and being utilized on the work under the scope. These survey reports/performance reports are to be obtained by contractor from the customer of BHEL/insurance authorities and submitted to BHEL at no extra cost.
- 1.32 Contractor shall deploy & maintain, the separate exclusive workforce / manpower arrangements and T&Ps resources including the heavy lift equipment /arrangements for Material Handling scope of works.
- 1.33 All vehicles/ electrical motors devices shall have to be provision of fire extinguisher/muffler facilities etc.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-I General

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- 1.34 Contractor shall provide FIRST AID / emergency medical facilities & Emergency Vehicle facilities at project premise/work site to meet any exigency / emergency requirement and shall maintain these facilities throughout the contract period & extension period (if any) as scope of work.
- 1.35 For any items or class of work not specified herein but required for total completion of work, the same shall be carried out as per BHEL requirement. However, payment of these items/class of work shall be regulated on the basis of rate arrived by the following method:
- a) Based on unit rate of items in the rate schedule.

Wherever any item rate for similar type of work or nearby item rate does not exist in the rate schedule, rate will be worked out on the basis of work element or from fundamentals of estimation.

- 1.36 Dewatering inside material storing area for equipment is contractor scope.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter- II Storage & Preservation Of Components

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### **2.0 STORAGE**

- 2.1 The equipment should be preferably in its original package and should not be unpacked until it absolutely necessary for its installation. The equipment should be best protected in its cases. It should be arranged away from walls.
- 2.2 The wooden pallet provided for packing itself can be retained for raised platform to protect equipment from ground damp, sinking into ground and to circulate air under the stored equipment. This shall also help in lifting the packing with forklift truck.
- 2.3 Periodic inspection of silica gel placed inside the equipment is necessary. It has to be replaced when decolorization takes place or regenerated.
- 2.4 Due care should be taken to ensure that the equipment is not exposed to fumes, gases etc. which can affect electrical contacts of relays and terminal boards.
- 2.5 The storage room and the equipment should be checked at regular interval of every week to ensure protection from termites, mold growth, condensation of water etc. which can damage the equipment.
- 2.6 All panels, electrical equipment's, and other materials kept in the store room should be identified and registered in a book. Inspection report should be recorded. Any discrepancy observed should be communicated to Site In-charge.
- 2.7
- i) Packing material shall be retained if the cubicle to be repacked after inspection.
  - ii) SPV modules in CB's shall be stored properly and covering with tarpaulins.
  - iii) MMS and their foundation bolts and nuts shall be preserved safely.
  - iv) Cables shall be stored separately and preserved above the wooden supports.
- 2.8 **Sub-Assemblies**
- a) All sub-assemblies should be kept in a separate place where it is easily accessible.
  - b) Sub-assemblies should have a protective cover in case it is stored without wooden packing/case to prevent accumulation of dust. Silica gel packets should also be kept along with it.
  - c) Sub-assemblies should not be stacked one above the other.
- 2.9 **Loose items (wherever applicable)**

The loose items supplied for the main equipment falling into various categories like tools, cables, recorders and display units, cable glands, frames etc. are to be categorized and stored separately.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter- II Storage & Preservation Of Components

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### 2.10 **PRESERVATION OF COMPONENTS**

Contractor shall arrange for preservation of components/ materials as per BHEL's storage and preservation manual and/or as per instructions of BHEL Manager.

The following methods shall be adopted for preservation:

Capping/wrapping/covering.

The following materials shall be adopted for preservation:

Firefighting Extinguishers, Slippers, wooden planks, supports, Tarpaulins etc.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter- III Manpower Requirement

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### 3.0 **MANPOWER REQUIREMENT FOR MATERIAL HANDLING SHALL AS FOLLOWS:**

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- 3.1 There shall be a Resident manager as Site in Charge at site, and experienced one engineer for receipts and one engineer for issues with adequate number of Hydra operator, Store keeper, Rigger, helper etc.
- 3.2 The Site in charge shall be provided with PCs and good communication facilities like telephone, fax, email etc. at the cost and expense of the contractor. Lack of communication facilities shall not be an excuse for extension of completion date.
- 3.3 All instructions from BHEL/Customer shall be directed to the contractor through the Site in-charge and he shall be responsible for all the contractor's activities at site. The contractor shall name his authorized representative prior to or immediately on commencement of operations at site
- 3.4 The Site In charge shall be present at site during all normal working hours and his contact address after normal working hours shall be made available to BHEL so that if any emergency arises, the presence of the contractor's site Representative at site can be called for.
- 3.5 The contractor shall not change the site Representative without the consent of BHEL. Should BHEL require the replacement of the contractor's site Representative for justifiable reasons (including inadequate progress of work) the contractor shall ensure that replacement is made as soon as possible and work is not allowed to suffer delay on this account.
- 3.6 The contractor shall provide to the satisfaction of BHEL sufficient and qualified staff for the execution of works. If and whenever any of the contractor's staff is found guilty of any misconduct or be incompetent or insufficiently qualified in the performance of his duties the contractor shall remove them from site as directed by Site Engineer.
- 3.7 The contractor shall ensure that all his supervisor's staff and workmen conduct themselves in a proper manner. They shall all be persons who are familiar with and skilled at the jobs allocated to them. Any misconduct / inefficiency noted on the part of the contractor's personnel shall be brought to the attention of the contractor's site representative who shall immediately take such action as necessary including the removal of such misconducting / inefficient persons, if so required by the Engineer-in-Charge.
- 3.8 The contractor shall ensure that replacement for such persons removed from site is provided immediately and the work is not allowed to suffer delay on that account.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter- IV Documentation

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### 4.0 DOCUMENTATION

4.1 The following information shall be furnished within one weeks of award of contract for purchaser's approval

- a) Mobilization Plan
- b) Detailed organization chart
- c) Details of T&P available with contractors with documents proofs.

4.2 The following information shall be furnished after testing and inspection:

Revalidation of Test certificates of various T&P's, if certificates are found to be invalid or any discrepancies/abnormalities observed in T&P's during execution.



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## **5.0 PROGRESS AND MONITORING OF WORK.**

- 5.1 It is the responsibility of the contractor to provide all relevant information on a regular basis regarding progress, labour availability, equipment deployment, testing, etc.
- 5.2 The contractor shall submit daily, weekly and monthly progress reports, manpower reports, material reports, and equipment reports etc. as per formats specified by BHEL. The progress reports shall indicate the progress achieved against plan, indicating reasons for delays, if any. The report shall also give remedial actions which the contractor intends to make good the slippage or lost time so that further works can proceed as per the original plan the slippages do not accumulate and affect the overall programme.
- 5.3 The contractor to reflect actual progress achieved during the month and shall be submitted to BHEL, so that slippages can be observed and necessary action taken in order to ensure that the situation does not get out of control shall update the construction schedule forming part of this contract each month.
- 5.4 If required by BHEL, the contractor shall change the sequence of his operation so that work on priority sectors can be completed within the projects schedule. The contractor shall afford maximum assistance to BHEL in this connection without causing delay to agreed completion date
- 5.5 In addition a weekly / fortnightly progress meeting shall be held at BHEL site office for coordinating job progress and all agreements reached there at shall be maintained.
- 5.6 Wherever sequences are furnished by BHEL, the contractor shall follow the same sequence.
- 5.7 The manpower reports shall clearly indicate the manpower deployed, category wise specifying also the activities in which they are engaged.

During the course of Material handling, if the progress is found unsatisfactory, or if the target dates fixed from time to time for every milestone are to be advanced, or in the opinion of BHEL, if it is found that the skilled workmen like fitters, operators, technicians employed are not sufficient BHEL may induct required additional workmen to improve the progress and recover all charges incurred on this account including all expenses together with BHEL overheads from contractor's bill