

**Name of work : Supplying, Installation, testing and commissioning of one 625/640 kVA residential silencer diesel generator set with standard panel at CSIR-NEIST, Jorhat (Assam)**

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Note:

Tender should confirm that they have received all the above papers

TENDER ISSUED TO :

M/S.....  
.....

Telephone No.....(if any)

SIGNATURE OF THE OFFICER ISSUING TENDER



**CSIR-NORTH EAST INSTITUTE OF SCIENCE & TECHNOLOGY**  
(Formerly Regional Research Laboratory)  
Council of Scientific & Industrial Research  
Jorhat –785006 (Assam)

NIT-D-33011/5/13-AO

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**NOTICE INVITING TENDERS**

Sealed tenders are hereby invited on behalf of Director, CSIR- NEIST, Jorhat in two bid system (Technical Bid and Price Bid) for the following electrical works from the original equipment manufacturers (OEMs), Authorized Dealer and all registered Licentiate electrical contractor of appropriate class of CPWD, Railways, MES, Post & Telegraph Department, State PWDs, Semi Government Organization or those who have worked for CSIR or its Laboratories and have successfully carried out preferably three similar works during the last three years. The Contractor(s) already awarded work order for similar type of work at CSIR-NEIST, Jorhat and not able to complete the contract in the allotted schedule and also not signed any agreement is (are) not eligible to submit the tender. **Tenderers must submit satisfactory work completion certificate of the contract carried-out at CSIR-NEIST, if any.**

The tender paper can be purchased in person from the office of the In-charge, Electrical Section and may also be downloaded from NEIST website [www.neist.res.in](http://www.neist.res.in). The interested parties fulfilling the above points are advised to enclose a separate demand draft / pay order as tender paper cost as mentioned below payable to 'The Director, North East Institute of Science and Technology, Jorhat-785006 if he/she uses downloaded form.

The firms are required to produce proof of fulfilling these conditions along with the copy of Sales Tax registration certificate , Income tax clearness, Labour certificate, bank solvency certificate, work completed certificates while making request for issue of Tender documents.

Sl No	Name of work	Estimated cost Rs	Earnest money Rs	Cost of tender Rs	Time of completion	Date of issue	Last Date of submission
1	Supplying, Installation, testing and commissioning of 625/640 kVA DG set at CSIR-NEIST, Jorhat	5854713.00	117100.00	500.00	90 days	From 06.02.2015 to 16.02.2015	18.02.2015 (13.00 Hrs)

- 1) Time for carrying out each work will be as above and the date of commencement shall be reckoned from the tenth day of issue of award letter.  
Complete contract documents to be complied with by the tenderer whose tender may be accepted can be seen at the office of the Head General Engineering, CSIR-NEIST, Jorhat (Assam)
- 2) Tenders should be on the specified form (Non transferable) which may be obtained from the office of the **In-Charge, Electrical Section, CSIR- NEIST, Jorhat** during office hours on payment of **tender fee against each work in cash or as Demand Draft of a schedule bank drawn in favour of Director, NEIST, Jorhat (Assam)** (Non refundable). Sale of tenders shall be from **06/02/2015 to 16/02/2015** up to 3.00 pm.
- 3) Tenders should be submitted with the documents as per NIT along with the Earnest money in double sealed covers super scribed with the name of the work date and time of opening written both on the inner and outer envelopes. They will be received up to 1.00 PM on **18/02/2015** and will be opened at 2.30 PM on the same day in the office of the A.O. CSIR- NEIST Jorhat (Assam). Tenders should be dropped in the tender box, Gate No. 2 , CSIR-NEIST, Jorhat before the closing date and time indicated. In case these are sent by post these should be sent by Regd. post/ Speed post addressed to **Administration Officer, CSIR-NEIST Jorhat –785006 (Assam)**, clearly indicating the name of the work on the envelope. Tenderers are to ensure that they post the tender well in advance so as to reach before the closing time and date indicated. CSIR-NEIST shall not be responsible for postal delays. Late received tenders should be summarily rejected. The date and time stamp of CSIR NEIST receipt section shall be final and binding.

- 4) (i) The Earnest money should be accompanied with the tender documents separately for each work as **Demand Draft or pay order of schedule bank and drawn in favour of Director , NEIST Jorhat (Assam), payable at SBI, RRL Branch (Code No. 5604) Jorhat**. Tenders received without earnest money will be invalid.  
 (ii) The tender and earnest money shall be placed in separate sealed envelopes each marked "Tender" and "Earnest Money" respectively. In cases where earnest money in cash is acceptable , the same shall be deposited with the cashier of the division and the receipt placed in the envelope meant for earnest money. Both the envelopes shall be submitted together in another sealed envelope marked " Tender" of only those tenders shall be opened, whose earnest money placed in the other envelop is found to be in order.
  - 5) Tender money, EMD and security deposited are exempted for those who are registered with DGS&D and NSIC as per Govt rule.
  - 6) The Employer does not bind himself to accept the lowest or any tender and reserves to himself the right of accepting the whole or any part of the tender and the tenderers shall be bound to perform the same at the rates quoted.
  - 7) Canvassing in connection with the tenders is prohibited and the tenders submitted by the contractor who resort to canvassing are liable for rejection.
  - 8) The tenderer shall not be permitted to tender for works in the concerned unit of CSIR in which a relative is posted in the grade between Controller of Administration and Junior Engineer. (Both inclusive) He shall also intimate the names of persons who are working with him in any capacity or subsequently employed by him and who relatives are as mentioned above.
- NOTE :** A person shall be deemed to be a relative of another if and only (a) they are members of a Hindu undivided family or (b) they are husband and wife or (c ) the one is related to the other in the following manner : Father, Mother (Including step mother), son (including step son), Son's wife, Daughter (including step daughter), Father's father, Son's son, Son's daughter, Son's daughter's husband, Daughter husband, Daughter's son, Daughter's son's wife, daughter's daughter, daughter's daughter's husband, Brother (including step brother), Brother's wife, Sister (including step sister), Sister's husband.
- 9) Tender submitted shall remain valid for 90 days from the date of opening for the purpose of acceptance and award of work, validity beyond 90 days from the date of opening shall be by mutual consent.
  - 10) The tenderer shall quote rates both in figures and words. He shall also workout the amount for each item of work and writes in both figures and words. On check if there are differences between the rates quoted by the tenderer in words and in figures or in the amount worked out by him, the following procedure shall be followed:
    - I. When there is a difference between the rates in figures and in words, the rates, which correspond to the amounts worked out by the tenderer, shall be taken as correct.
    - II. When the amount of an item is not worked out by the tenderer or it does not correspond with the rate written either in figures or in words, the rate quoted by the tenderer in words shall be taken as correct.
    - III. When the rate quoted by the tenderer in figures and in words tallies but the amount is not worked out correctly the rate quoted by the tenderer shall be taken as correct and not the amount.
  - 11) The tenderer should see drawings and in case of doubt obtain required particulars, which may in any way influence his tender from the Engineer as no claim whatsoever will be entertained for any alleged ignorance thereof.
  - 12) Before tendering, the tenderer shall inspect the site to fully acquaint himself about the condition in regard to accessibility of site, nature and extent of ground, working condition of site and locality including stacking of materials, installations of tools and plants (T&P) etc., conditions affecting accommodations and movement of labour etc. required for the satisfactory execution of the work contract. No claim whatsoever on such account shall be entertained by the **Employer** in any circumstances.
  - 13) Earnest money will be forfeited if the contractor fails to commence the work as per letter of award. If any tenderer with drawn this tender within the validity period or makes any modification in terms and conditions of the tender which are not acceptable to the Department, then CSIR /NEIST shall without prejudice to any right or remedy, be a liberty to forfeit 50 % (fifty percent) of the Earnest Money absolutely.
  - 14) Except writing rates and amount, the tenderer should not write any conditions or make any changes, additions, alterations and modifications in the printed form of tenders. **Tenderers who are desirous to offer rebate the same should be brought out separately in the covering letter and submitted along with the tender.**
  - 15) Some of the provisions of General Conditions of Contract are given below. Interpretation however shall be as given in the General Conditions of Contract.
    - a) **DEFECTS LIABILITY PERIOD:** Twelve months from the date of successful installation as certified by the employer.
    - b) **SECURITY DEPOSIT:** Security deposit shall be deducted from the bills at 10 % of the gross value of work done and will be refunded only after the completion of Defect Liability Period satisfactorily.
    - c) **COMPENSATION:** Contractor shall pay as compensation an amount equal to one percent or such smaller amount as the Employer (whose decision in writing shall be final) may decide on the cost of the whole work as shown in the agreement for every week that the work remains uncompleted or unfinished or due quantity of work remains incomplete after the proper dates. Compensation to be paid shall not exceed ten percent of the estimated cost of the work as shown in the agreement.
  - 16) Stores: No material will be issued by the dept. for this work.
  - 17) Clauses No. 28 of conditions of contract i.e. "**ESCALATION**" will not be applicable in this contract since the duration of contract is less than 6 months.
  - 18) Interested party may also download the tender documents for the work . Tender paper without tender fee ,earnest money, contractor documents, late tenders, un responsive tenders, incomplete tenders will be rejected.
  - 19) Only technically qualified bidders shall be called for the price bid opening, the date and time of which shall be intimated separately through email/telephone/post.

ADMINISTRATIVE OFFICER



**CSIR-North East Institute of Science & Technology, Jorhat (Assam)**  
**Ministry of S&T, GOI**  
**NIT-D-33011/5/13-AO**



**NOTICE INVITING TENDER**

Sealed tenders are invited under two bid system on behalf of Director, CSIR-NEIST, Jorhat (Assam) for the following works from the all registered Licentiate Electrical Contractors of appropriate class or manufacturers.

Sl. No	Name of Work	Estimated Cost in (Rs.)	Earnest Money (Rs.)	Cost of Tender (Rs.)
1.	Supplying, Installation, testing and commissioning of 625 /640 kVA DG set at CSIR-NEIST, Jorhat	5854713.00	117100.00	500.00

Date of Issue : **06-02-2015 to 16-02-2015**

Date of receipt : Up to 13.00 Hrs on 18-02-2015

Date of opening: 18-02-2015

For details log on to : [www.neist.res.in](http://www.neist.res.in)

Administrative Officer

## **SCOPE OF WORK**

The work include supplying, Installation, Testing and commissioning of one number 625/640 KVA silent type DG set with Standard Manual Panel at Jorhat (Assam). It comprise, supply of one number 828 BHP of more as per engine model 1500 RPM rated Diesel Engine, one number 625/640 KVA rated alternator including standard manual Panel and all other necessary accessories as required to complete the installation as well as proper functioning of DG set. The work also includes the supplying, laying and termination of power cables, inter phasing as well as interlocking of DG set with existing main LT panel. The proposed silent Green DG set will be installed on the PCC foundation suitable for 625/640 kVA DG set and an open iron structure shed with PVC sheet roofing. It will be the responsibility of the contractor to obtain all approval from local authorities which are mandatory. The fees payable to local bodies for obtaining their approval will however to be reimbursed on submission of paid receipt. The related civil works i. e preparation of foundation for DG set, iron structure open shed, making holes, cutting chasses etc. are to be carried out by the contractor. The contractor should train the identified staff of NEIST in operation and maintenance of the unit.

The details description of the items has been mentioned in the technical schedule . Any omission in the description of the item will not absolve the contractor for its responsibility to complete the work in satisfactory manner. The work shall have to be executed in accordance with the relevant satisfactions. Tenderers are requested to visit CSIR-NEIST, Jorhat to access the working site and other consideration before quoting their rates in order to complete the job in satisfactory manner. The tenderer must bring out such items with rates in their tender itself which are essential for the said work but not mentioned in schedule of quantities since nothing extra will be payable against any item on this account after award of work. Technical literature of above DG set to be furnished along with the tender document. Details of drawing, Data sheet manual etc. to be submitted along with the tender documents.

No escalation in the rates will be allowed under this contract. Similar & nothing extra will be paid due to increase in the basic price of material/taxes/labours and imposition on duties etc. either by an act of Government or any authority.

The OEM shall also be required to enter into a 5/10 years AMC and therefore the AMC rates should be part of quotations. Without such, the quotation shall be summarily rejected.

**CSIR-NORTH EAST INSTITUTE OF SCIENCE & TECHNOLOGY:JORHAT :ASSAM**

Name of Work : - Supplying, Installation, testing and commissioning of one 625/640 kVA residential silencer diesel generator set with standard panel at CSIR-NEIST, Jorhat (Assam)

ABSTRACT OF COST

Amount from Page No.....

Rs.....

Total Amount Rs.....

(Rupees.....)

Signature of the Tenderer

## Schedule of Quantities

**Name of work : Supplying, Installation, testing and commissioning of 625/640 kVA ,415v residential type diesel generator at CSIR-NEIST, Jorhat (Assam)**

Sl No	Particulars of materials	Qty	Unit	Rate in Rs.	Amount in Rs.
1.	<p>Supplying including installation, testing and commissioning of Green DG set, powered by Diesel Engine coupled to suitable alternator of 625/640 kVA , 415v, AC 3 phase 4 wires , 0.8 P.F. (lag) both mounted on a</p> <p>(a) M.S. Fabricated common base frame            (b) M.S. fabricated fuel tank of required capacity of 14 SWG sheet            (c) Anti vibration mounting            (d) Standard manual control panel with digital metering system.            (e) Suitable batteries with leads. Exide/Similar Make            (f) First fill of good quality lube oil            (g) Residential silencer, acoustic enclosure for control of sound complete with all accessories as required as per the direction of the deptt.</p> <p><b><u>Details technical specifications :</u></b></p> <p><b>Engine : Cummins/Caterpillar/Kirloskar/Volvo Make</b>            Model : As per company            BHP : 828 BHP or more at 1500 RPM under NTP condition, conforming to ISO 8528/ ISO 3046/BS 5514            Cooling : Water cool/radiator/heat exchanger/Bypass Thermostate. Low temperature after cooling.            Aspiration : Turbocharged after cooled BS:5514            Cycle : 4 stock, 6 cylinder            Displacement : Minimum 19 Lts.            No of Cylinders : 6 Cylinder in line.            Air cleaner : Air intake manifold/Dry air cleaner/vacuum indicator            Charging alternator : As required according to DG set            Lubrication system : Oil pan/Engine mounted lub oil pump/lub oil by Pass filter/AC motor driven lub oil pumping            Filters : Fuel and oil            Exhaust : Turbocharger/Flexible fitting/Exhaust manifold/ Green DG set residential silencer            Governor : Electronic governor of class A-1 governing. As per ISO 8528-5            Gauges : Fuel pr. , Oil pr. , water temp. , tacho meter &amp; Hour meter.            Fuel system : PT pump with electronic governor/PTD injector/replaceable fuel filter/24v DC solenoid coil.            Fuel Injector : Should be Electrically Step timing controlled.            Safety shout off : Low oil pr./low coolant temp/battery status            Noise level : Less than 75 db at 1 mtr distant at 75% load            Starting : Electric batteries 24 v DC/Battery Charging unit</p>	01	Each		

## Schedule of Quantities

**Name of work : Supplying, Installation, testing and commissioning of 625/640 kVA ,415v residential type diesel generator at CSIR-NEIST, Jorhat (Assam)**

SI No	Particulars of materials	Qty	Unit	Rate in Rs.	Amount in Rs.
	<b>Alternator :Stamford / Kirloskar Electric / Leroy Somer Make</b> KVA : 625/640 Type : Brush less, static excited, self Regulated.Conforming BS 2613/IS:4722 Rated Voltage : 415 volts at 40 deg ambient 3 ph. 4 wire Frequency : 50 Hz Insulation : Class H Winding Pitch : 2 / 3 pitch. Enclosure : IP-23 Voltage reg. : +/- 1 % Over speed capability : 20% for 2 min. Power factor : 0.8 (lag) Permissible over load : 10% for 1 hour in 12 hours of duration.				
2	<b>Installation Details :</b> (a) Making of RCC Foundation suitable for installation of 1 No 625/640 KVA DG set (b)Making of shed by iron structure with PVC sheet Cover for DG Set (c )Unloading, shifting & Placement of DG set along with Acoustic Enclose on ready foundation. (d)Structural support for exhaust pipe with IS Std. angle, channel etc. (e)Supply & laying of 10" dia /250 mm NB MS class B Tata/ Jindal make pipe with 50 mm thick insulation & 24-28 swg aluminium sheet cladding. (f)Supply & Laying of 1" dia MS pipe for fuel lines (g)Supply & Laying of 500 Sq.mm single core Alu Armoured power cable ( 4 Run of 40 Mtr. Each) (h)Supply & Installation of terminal box (Without Bar) to house 4 nos 500 Sq.mm power Cable. (i)Making of Earth Station by Copper plate 2" X 2", charcoal, satl, Earth Pit Cover Etc. 4 Nos. (j)Earthing conection by 50X6MM Copper strip-30 Mtr. (k)Termination of power Cable (l)Providing 50mm thick insulation & 24-28swg Alu. Sheet cladding for silencers (m)Supply & fixing of Pollution Cop & chake canopy (n)Battery Charging necessary connection (o)Transportation & out Station Expenses	01	Each		
3.	Annual Maintenance Contract (AMC) of the DG set after DLP for next consecutive 5 & 10 years (excluding materials) including 625 kvA alternator and other accessories connected to the DG set.				
	(i) First five years	5	Years		
	(ii) Second five years	5	Years		
	(Without quoting the AMC charges, the quotation will be summarily rejected.)				
	<b>Total cost Rs.</b>				

**Rupees :**

Note : The rate must be written both words and figures.



**CSIR-NORTH EAST INSTITUTE OF SCIENCE & TECHNOLOGY: JORHAT: ASSAM**  
(Council of Scientific & Industrial; Research)

**TECHNICAL SPECIFICATIONS FOR SILENT D.G. SETS (625/640 kVA)**

**A. DIESEL ENGINE :**

- 1.1 828 BHP or more , water cooled diesel engine, electric start, 1500 RPM, four stroke, 6 cylinder conforming to ISO : 58528/ISO 3046/BS:5514
- 1.2 The engine shall be equipped with required standard accessories. Broadly these are :
  - II. Heavy duty radiator fan.
  - III. Flywheel to suit flexible/direct coupling
  - IV. Flywheel housing
  - V. Air intake manifold
  - VI. Heavy duty Air cleaner with replaceable element
  - VII. Exhaust gas turbocharger & after coolers (wherever required)
  - VIII. Exhaust manifold
  - IX. Coupling Gourd
  - X. Lubricating oil pump
  - XI. Fuel injection pump
  - XII. Cooling water centrifugal pump
  - XIII. Nozzles
  - XIV. Fuel filter
  - XV. Lubricating oil filters
  - XVI. Fuel tank
  - XVII. Fuel line
  - XVIII. Bypass filter
  - XIX. Electronic Governor Control
  - XX. 24 V electrical system with electric starter and battery charging alternator
  - XXI. Safety switches for high coolant temperature and low lubricating Oil pressure
  - XXII. 24 V stop solenoid-energized to run
  - XXIII. Engine maintenance manual, parts catalogue, warranty card, routine test certificate
  - XXIV. Microprocessor based generator set monitoring and control system.
  - XXV. AVM Pads
  - XXVI. Acoustic Enclosure: Noise level less than 75 db @1 mtr at 75% load

**I. LATEST STATE-OF-ART INSTRUMENT PANEL WITH PROVISION FOR REMOTE MONITORING AND DATA LOGGING COMPRISING OF:**

1. Starting/Stop key with proper arrangement of switch
2. Digital display to indicate all important parameters like :
  - I. Battery Voltage
  - II. Coolant water temperature
  - III. Lubricating oil pressure
  - IV. Engine speed
  - V. Engine running hours
  - VI. Diagnostic and engine protection for :
  - VII. High coolant temperature (alarm & trip)
  - VIII. Low lubricating oil pressure (alarm & trip)
  - IX. Engine over speed
  - X. Sensor fault
  - XI. Oil pressure safety switch
  - XII. Battery charging status
  - XIII. 3 Ph AC volts/kW/kVA/Power Factor/Frequency digital metering
3. **Desirable feature** : Provision for conversion to Gas run for future use.

## **B. ALTERNATOR:**

1. The alternator rating shall be capable of generating 625/640 kVA rating at 415 volts.  $\pm 1\%$  , 3 phase, 50Hz, 4 wire system A.C supply for 0.80 lagging power factor load for continuous operation at 1500 rpm. Manual adjustment at all conditions of load with coarse and fine controls to obtain voltage variation of  $\pm 1\%$  shall be available. The frequency shall be maintained at 50 Hz. The alternator should be suitable for tropical climate and shall generally conform to BS 5514,ISO 3046
2. The alternator rating including and above 625/640 KVA shall be provided with automatic voltage regulator in order to hold the out put voltage constant and provided fast response to sudden load changes.
3. The alternator shall be capable of sustaining 10% over load for one hour in every 12 hours continuous operation at full load.
4. All the terminal points of the alternator shall be enclosed in a terminal box for connecting the load. The size and shape of the terminal box shall be such as to receive the armoured Al cables / flexible jumper connection between panel & alternator.
5. The terminal box if fabricated at site shall be made of minimum 1.6mm thick M.S.Sheet painted in matching colour.
6. The excitation system consists of an electronic automatic voltage regulator having very fast response to load changes. The salient features of the alternator are :
  - I.  $\pm 1.5\%$  voltage regulation under static conditions
  - II. Class "H" insulation
  - III. Enclosure IP 23

## **C. CONTROL PANEL :**

Control panel of cubical shape , power coated and should be fabricated out of 14/16 gauge. thick CRCA sheet provides :-

- I. MCCB/ACB of suitable rating with overload and short circuit protection.
- II. Digital Voltmeter, Ammeter with selector switch
- III. kW/PF Meters
- IV. Frequency meter 0-60 Hz.
- V. kWh meter.
- VI. Indicating lamp for "Load On" and set running
- VII. Aluminium bus bar of suitable capacity with incoming and outgoing terminations.
- VIII. Power cables for interconnection between DG set and control panel
- IX. Control cabling as per requirement.
- X. Push button for engine start and stop
- XI. Cyclic cranking
- XII. Alpha Numeric Screen
- XIII. Alternator trim Adjustment
- XIV. Model specific Calibration
- XV. Field Trim Adjustment.
- XVI. High Coolant Temperature ( Warning And Shutdown)
- XVII. Low Lube Oil Pressure ( Warning and Shutdown)
- XVIII. Fail to crank ( Shutdown)
- XIX. Fail to Start ( Shutdown )
- XX. Over speed ( shutdown)
- XXI. Low ? High Battery Voltage (Warning )
- XXII. Low Coolant level (Shutdown)
- XXIII. Over frequency ( Shutdown)
- XXIV. Over Current (Shutdown)
- XXV. Over Voltage ( Shutdown)
- XXVI. Under Voltage ( warning)

#### **D. ACCESSORIES :**

##### **AVM PADS:**

Set of specially designed AVM Pads affixed between the engine/alternator feet and the base frame.

##### **BASE FRAME:**

Heavy duty base frame of sturdy designed made of MS steel with necessary reinforcement and lifting arrangement.

##### **FUEL TANK :**

Daily service base fuel tank of sheet metal (minimum 14 SWG thickness) suitable for 835 Litre capacity with drain valve, air vent, inlet and outlet connection with dip stick to measure fuel level.

##### **BATTERY:**

100 AH , 2 x 12 V battery with lead.

#### **E. ACOUSTIC ENCLOSURE:**

The acoustic enclosure shall be made of 14 gauge sheet steel. The silent features of the acoustic enclosure are:-

The enclosure is to be of modular construction with the provision of assemble and dismantle easily at site.

- I. The sheet metal components should be hot dip and pretreated
- II. The enclosure should be powder coated (inside as well as out side) with pure polyester base powder. All nut & bolt/ external hardware are made from stainless steel.
  
- III. There should be provision for filling the fuel from out side the enclosure with locking arrangement.
- IV. Battery should be accommodated in separate tray in the enclosure.
- V. External drain plugs should be provided for draining lubricant oil and diesel.
- VI. The doors should be gasketed of high quality to prevent leakage of sound.
- VII. Sound proofing of the enclosure should be done with high quality rock wool/mineral wool conforming to IS : 8183.
- VIII. A special residential silencer to control exhaust noise.
- IX. Latest designed attenuators to control sound at air entry and exit points.
- X. Adequate ventilation to meet air requirement for combustion and heat removal. If required, a blower should be provided to meet total air requirement.
- XI. Temperature of enclosure should not exceed beyond 5 deg. C of ambient temperature.
- XII. There should be provision of emergency shut down from out side the enclosure.
- XIII. An arrangement for illuminating the enclosure from inside.
- XIV. Sound level should not be more than 75db @ 1 metre at 75% load..

#### **F. COUPLING & MOUNTING ARRANGEMENT:**

The engine and alternator shall be directly coupled by a latest design flange coupling for durability and accuracy in alignment and mounted through AVM pads on a heavy duty steel base frame for total control of vibration. The manual control panel shall be mounted on the base frame of the enclosure.

#### **TECHNICAL PARTICULARS:**

The bidders shall provide the following particulars in Technical documents with all other particulars

##### **1. ENGINE / ALTERNATOR:**

###### **A. ENGINE**

- i. Name of manufacturer.
- ii. Engine model.
- iii. Engine capacity :
  - a. At NTP conditions.
- iv. Rated speed.
- v. No. of cylinders.
- vi. Arrangement of cylinders.
- vii. Whether 2 stroke or 4stroke.
- viii. Type & grade of fuel.
- ix. Specific Fuel consumption rate (cms./BHP/Hr.)

- x. Fuel Consumption in Liter / Hr
  - a. At NTP conditions.
- x. Type & grade of lubricant oil.
- xi. Lubricating oil consumption (% of fuel).
- xii. Lubricating oil change interval.
- xiii. Method of cooling of Engine.
- xiv. Rate of raw water at full load in case of heat exchangers.
- xv. Type of silencer.
- xvi. Overall dimensions of Engine:
  - a. Length (mm)
  - b. Width (mm)
  - c. Height (mm)

## B. ALTERNATOR

- i. Name of manufacturer.
- ii. Type of Alternator
- iii. Model No.
- iv. Rated output
  - a. At NTP conditions.
- v. Rated speed.
- vi. Rated output voltage
- vii. Rated output frequency
- viii Efficiency & power factor at -
  - a. 110% of full load
  - b. Full Load
  - c. 75% of full load
  - d. 50% of full load
- ix. Voltage regulation from full load to no load
- x. Excitation current at 0.8 p.f. & full load.
- xi. Type of excitation provided.
- xii. Class of insulation
- xiii Whether radio interference suppressor is provided
- xiv Whether neutral is brought out.

## 2. TEST PROFORMA

### 2.1 SCOPE

- 1. This section lays down the procedure for conducting test on the installation. In general the procedure laid down here shall be followed. However, if manufacturers of the equipment has prescribed different procedure which is at variance, the same may be adopted.

### 2.2 CAPACITY

- 1. The operating capacity of E.A. Set shall be arrived, considering a load with power factor of 0.80 lagging and after taking into consideration suitable de rating as per B.S. 649/5514.

### 2.3 PHYSICAL CHECKS

- 1. Particulars such as name plate details of all major components/equipments shall be recorded and compared with what has been offered by the contractor as per the concluded agreement.
- 2. Physical visual inspection of the installations specially on the following aspect shall be conducted.
  - 1. Firmness of mounting
  - 2. Verticality of installed set.
  - 3. Tightness of nuts & bolts.
  - 4. Proper installation of exhaust pipe.
  - 5. Insulation of exhaust pipe.
  - 6. Provision of guards on EA Set coupling joint.
  - 7. Proper location of fuel tank.
  - 8. Size of electrical cables as per approved plan.
  - 9. Termination of cables.
  - 10. Ratings of various fuses.
  - 11. Termination of earth leads on neutral & body.

## 2.4 EARTH RESISTANCE

- Measurements shall be taken in respect of earth resistance of earth stations provided for grounding of neutral and body. The resistance shall be measured by isolating the connecting earth lead in respect of all earth stations individually. The results shall be recorded as under:

Sr. No.	Identification of earth station	Used for	Earth stations (ohms)
1	2	3	4

## 2.5 RUN TEST:

- The engine shall be given a test run continuously for atleast six hours with alternator supplying full rated load. During this run following observations shall be recorded:

	Item	Time (After start of run test)							
		1 Hr.	2 Hr.	3 Hr.	4 Hr.	5 Hr.	6 Hr.	7 Hr.	8 Hr.
1.	Lubricating oil pressure								
2.	Exhaust gas colour								
3.	Speed of Engine								
4.	Output voltage								
5.	Load current								

## 2.6 STATOR TEMPERATURE RISE TEST:

- The alternator shall be loaded at full rated load and stator (alternator body) temperature be recorded as under at interval of 30 minutes till such time three consecutive readings are same.

Sr. No.	Time (Hrs.)	Ambient Temp. (Deg. C)	Stator Temp. (Deg. C)
1	2	3	4

- The temperature rise shall be maintained within 60 Deg. C above the ambient.

## 2.7 FUEL CONSUMPTION TEST:

- Fuel consumption for half an hour shall be measured after the full load operating conditions have stabilized..
- During the measurement the load shall be maintained unchanged.
- The fuel consumption shall be compared with values given in technical particulars.

## 2.8 OVERLOAD TEST:

- Overload test to the extent of 10% over the rated load shall be conducted immediately after the fuel load run test.
- The various parameters as in the case of run test shall regularly be monitored and recorded.
- After the overload test the load shall be normalized to rated value and all parameters recorded accordingly in addition to recording stator body temperature.

**2.9 INSULATION TEST:**

- i. Insulation test shall be conducted after testing the EA Set at overload.
- ii. The insulation resistance between the stator coil and frame shall be measured with 500volts megger.
- iii. The insulation resistance of alternator winding shall be noted below:  
Rated output voltage + 1 Mega ohms  
1000 + Rated output in KVA
- iv. Insulation resistance of control wiring with 500 volts megger shall be measured which shall be not less than one mega ohms

**2.10 REGULATION TEST:**

- i. The voltage regulation from no load to full rated load at 0.8 p.f. and from no load to half the rated load at 0.8 p.f. shall be measured between phase & neutral under automatic and manual regulation mode which shall not exceed 5% of the nominal rated output voltages.
- ii. In automatic regulation mode the recovery time shall be noted which shall not exceed 3 seconds.
- iii. The frequency of output supply of various load conditions shall be noted and recorded. The variation shall be compared with the accuracy standards specified.
- iv. Change in speed of engine with change in load shall be observed and compared with standards laid down for the speed governor.

**2.11 FUNCTIONAL TEST:**

- i. Functional tests in respect of various components like controls, interlocks, measuring devices, battery charger and annunciation devices shall be considered.

**2.12 BATTERY TEST:**

The battery shall be tested for six successive attempts for starting of engine in order establish healthy condition of battery.

## ADDENDUM

TENDER FOR SUPPLYING AND INSTALLATION OF 625/640 kVA D.G. SET

### LIST OF APPROVED MAKE

Item	Approved make
Diesel Engine	Cummins, Kirloskar, Caterpillar, Jackson, Volvo
Alternator	Stamford, Kirloskar, Leroy Somer Make
Batteries	Exide, Pace-setter, Standard
Battery Charger	Statcon or Equivalent
Pump set	Kirloskar, Beacon, Jyoti
MS Pipes	Tata, Jindal
Butterfly valves	Audco or Equivalent
Gate/NRV/Check valves	Learner, Sant, Kirloskar
Strainer	Emerald, Sant
Pressure / Temperature gauge	Fiebig, Guru
Insulation	UP Twiga, Lloyd
MCCB	L & T, Siemens, ABB, Havells
Cable Gland	Peco, Comment or equivalent
Cable lug	Reputed make
Axial fan	ABB

We have noted the above and confirm that our tender is based on approved makes stipulated above.





4.	ALTERNATOR With standard accessories etc. as per technical specifications	Each	01	Yes/No.
5.	MANUAL CONTROL PANEL With standard accessories etc. as per technical specifications	Each	01	Yes/No.
6.	AVM PADS	Set	01	Yes/No.
7.	BASE FRAME	Each	01	Yes/No.
8.	FUEL TANK	Each	01	Yes/No.
9.	BATTERY (2 x 12v)	Each	01	Yes/No.
10.	ACOUSTIC ENCLOSURE With standard accessories etc. as per technical specifications	Each	01	Yes/No.
11.	COUPLING & MOUNTING ARRANGEMENT	Each	01	Yes/No.

**NOTE:**

- (i) The price quoted should be inclusive of all charges including all applicable taxes, Octroi, freight and handling charges and all other miscellaneous expenses.
- (ii) Amount is to be written in words also.

Signature of the bidder

Name :

Place:

Date:

Seal

# GENERAL CONDITIONS OF CONTRACT

## 1. INTERPRETATION

- a) In constructing these conditions, the specifications, the schedule of quantities, Tender, Special conditions and agreement, the following words shall have the meanings herein assigned to them except where subject or context otherwise requires.
- b) This contract shall comprise of the Article of Agreement, General Conditions of Contract, Special Conditions, Additions special conditions the schedule of quantities, specifications, letter of acceptance of tender and other documents mentioned in the content sheet attached hereto and including those to which only reference is made herein.

**WORK OR WORKS** : shall mean all work or works defined in schedule of quantities, specifications and such other work or works as the contractor may be entrusted with for carrying out under this contract.

**ENGINEER** : shall mean the Engineer designated by the Employer to superintend and perform other duties as indicated in the contract.

**CONTRACTOR** : shall mean the individual or Firm or company, whether incorporated or not under taking the work and shall include the legal personal representative or such individual or the persons composing such Firm or company or successors of such firm or company and the permitted assignees of such individual or firm or company.

**SITE** : shall mean the site of the contract works including any buildings and erection thereon and any other land adjoining thereto (inclusive) as aforesaid allotted by the Employer or the Engineer for the contractor's use.

**COMPENSATION** : shall mean all sums payable by way of compensation under any of the conditions shall be considered as reasonable compensation without reference to the actual loss or damage sustained and whether or not any damage sustained, and whether or not any damage shall have been sustained.

Words importing persons include firms and corporations ; words importing the singular only also include the plural and vice versa where the context so required.

The headings are given to the clauses for convenience and they will not limit the meaning or scope of the clauses in any way.

## 2. DRAWINGS AND SPECIFICATIONS:

The contractor shall execute whole and every part of the work in the most substantial and workmanlike manner both as regard material and otherwise in every respect in accordance with the specifications. The contractor shall also conform exactly and faithfully to the design, drawings and instructions given in the respect of the work by the Engineer. The contractor shall be furnished free of charge one copy of such specifications and all such designs, drawings and instructions as are not included in the printed publications.

## 3. CONTRACTOR TO PROVIDE EVERYTHING NECESSARY

- (a) The contractor shall provide at his own cost all materials (except such materials, if any as may in accordance with the contract be supplied by the Employer) plants, tools, appliance, implements, ladders, scaffolding, temporary works etc. requisite or proper for the execution of the work whether original, altered or substituted and whether included in the specifications or other documents forming part of the contract or which may be necessary for the purpose of satisfying or complying to the requirements of Engineer, as to any manner as to which under these conditions he is entitled to be satisfied together with carriage therefore to and from the work. The contractor shall also supply without charge the requisite number of persons with means and materials necessary for the purpose of setting out works and counting, weighing and assisting in the measurement of examination at any time and from time to time of the works or materials. Failing his so doing, the same may be provided by the Engineer and the expense of the contractor and the expenses may be deducted from any money due to the contractor under the contract and / or from his Security deposit.

- (b) The contractor shall provide himself with requisite quantities and quality of water for carrying out the works at his own cost. If however, piped water is supplied by employer, the contractor shall pay for the water at one per cent of the total cost of the work done except on electrical works, air conditioning works and furniture works. The contractor shall make his own arrangement for water connection and laying of further pipe lines from the source of supply of the employer. It should be clearly understood that the employer does not guarantee to maintain uninterrupted supply of water and it will be incumbent on the part of the contractor to make alternative arrangement for water at own cost in the event of any temporary break down in the water means so that the progress of work is not held up for want of water. No claim as damage or refund of water charges will be entertained on account of such break downs. However, if the contractor is permitted to make his own arrangement to draw water from a well, hand pump or natural river or pond of the employer, no charges will be made for the water drawn from the same, but the contractor will make good any damage done to the installations and ensure that the quality of water used in the work is conforming to BIS codes and provide for any treatment at his own cost.

- (c) The contractor shall be allowed to contract temporary wells in employer's land for taking water for construction purpose only after he has permission of the employer in writing. No charges shall be recovered from the contractor on this account but the contractor shall be required to provide necessary safety arrangement to avoid any accident or damage to adjacent buildings, roads, and service lines. He shall be responsible for any accident or damage caused due to construction and subsequent maintenance of the wells and shall restore the ground to its original condition after the wells are dismantled on completion of the work.

- (d) The Employer on no account shall be responsible for the expenses incurred by the contractor for hired ground or water obtained elsewhere.

- (e) Subject to availability the employer may supply power at only one point from where the contractor shall make his own arrangement for distribution including provision of electric meter , switches, fuses etc. at his own cost. These shall be in the custody of the employer. If there is any hindrance cause to other works the contractor shall reroute to remove such temporary lines without any extra cost. Such temporary line shall be removed after the completion of works. The cost of power consume by the contractor shall be payable to the employer at rates fixed by the employer, which should be deducted from the running account bills. However the employer does not guarantee the supply of power and no compensation for any failure or short supply of power be entertained.

4. **AUTHORITIES, NOTICES & PATENTS**

- (a) The contractor shall conform to any regulation and bye laws of any corporation and of any electricity supply company an authorities with whose system the structure is proposed to be connected and shall before making any variation form the drawing and specifications that may be necessitated for so conforming by giving written notice to the Engineer specifying the variation proposed to be made. The reasons for making it and apply for instruction thereon . If the compliance with this clause involve any extra work not included in this contract, his shall specify this item of work and the allowance of extra payment required on their account.
- (b) The contractor shall give all notices required by the said regulation or bye laws to be given to any authority and pay to such authority or to any public office all fees that may chargeable in respect of the works and lodge the receipts with the bills to engineer for reimbursement.

5. **RATES TO INCLUDE ALL TAXES**

- (a) Rates quoted by the contractor shall include sales tax, duties octopi toll tax royalties and all other taxes in respect of these contract and the employer shall not entertain any claim whatsoever in this respect . Tendered rates are inclusive of all taxes and levies payable under the respective status. However, pursuant to the constitution ( Forty sixth Amendment) Act, 1982 if any further tax or levy is imposed by statutes , after the date of receipt of tenders and the contractor thereupon necessarily and properly pays such tax/ levies the contractor shall be reimbursed the amount as per the rules on producing proof of payment so made provided such payment , if any is not in the opinion of the employer (those decision shall be final and binding) attributable to delay in execution of work within the control of the contractor.
- (b) The contractor shall keep necessary books of account and documents of the purpose of this condition as may be necessary and shall allow inspection of the same by a duly authorized representative of the employee and further shall furnish such other information and document as the employer require.
- (c) The contractor shall within a period thirty days of imposition of any further tax or levy pursuant to the constitution ( Forty sixth Amendment) Act. 1982 give a written notice thereof to the employer that the same is given pursuant to this condition together with all necessary information relating thereto.

6. **MATERIALS**

- (a) If the specifications of schedule of items provide for use of any material to be supplied by the employer's stores or if is required that the contractor shall use certain stores to be provided by the employer as shown in the schedule of materials hereto annexed, the contractor shall be bound to procure and shall be supplied such materials and stores as are from time to time required to be used by him for the purpose of the contract only and value of the materials so supplied at rate specified in the said schedule of materials and quantities incorporated in the work may be set off or deducted from any sums then due or thereafter to become due to the contractor under the contract or otherwise or against or from the security deposit. All materials so supplied to the contractor by the employer shall remain the absolute property of the employer and the contractor shall be the trustee of the materials so supplied / procured and the said materials shall not removed/dispose off from the site of the work on any account and shall be at all times open for inspection by the Engineer or Employer . The contractor shall bear all incidental charges for cartage , storage and safe custody of all materials and against damage due to dampness , rain sun , fire and theft and be fully responsible for their storage and maintenance. Any such materials un used and in perfectly good condition in the opinion of the employer at the time of the completion of work or transmission of the contract, or earlier shall be returned to the employer at a place directed by the Engineer at contractor's cost and at rates stipulated in the said schedule but in case the employer decides not to take back the materials the contractor shall have no claim for compensation on account of any such materials supplied to him as aforesaid being un used by him or for any wastage or damage to any such materials.
- (b) If for any reason there is delay or non supply of materials as shown in the schedule , the contractor shall procure the same and complete the work in time after due intimation and approval of the employer. The difference in price (between his procurement price and shown in the schedule) shall be paid to the contractor. However in case approval of the employer is not given only suitable extension of time would be considered and no other claim of compensation / damage shall be payable by the Employer.
- (c) After completion of the work or on determination/ termination of the contract, the theoretical quantity of cement to be used in work shall be calculated on the basis of statement showing quantity of cement to be used in different items of work provided in current schedule for the purpose printed by CPWD. In case any item is executed for which the standard constants for the consumption of cement are available in the above mentioned or cannot be derived from this statement, the same shall be calculated on the basis of standard formula to be laid down by the Engineer. Over this theoretical quantity of cement shall be allowed a variation up to 3% plus / minus for works estimated cost of which as put to tender is not more Rs. 10.00 lakhs and up to 2% Plus/minus for works estimated cost of which as put to tender is more than Rs. 10.00 Lakhs. The difference in the quantity actually issued to the contractor and the theoretical quantity including authorize variation, if not return by the contractor, shall be recover at twice the issued rate, without prejudice to the provision of other condition regarding return of materials governing the contract. In the event of each bring discovered that the quantity of cement which is less than the quantity ascertained as herein before provided (allowing variation on minus side as stipulated above) the cost of quantity of cement not so used, shall be recovered from the contractor on the basis stipulated issue rate and cartage to site.
- (d) The provision of foregoing sub-clause apply Mutatis-Mutandis in the case of steel reinforcement or structural steel section (each dia./section or category shall be considered separately) except that the theoretical quantity of the steel be taken as the

- quantity required as per design or as authorized by the Engineer, including lappages, plus 3 % wastage due to cutting into pieces. Over this theoretical quantity 2 % plus/minus shall be allowed as variation due to wastage.
- (e) The provision of foregoing sub-clause shall apply Mutatis Mutandis in the case of cables (other than underground cables) wires, conduits/GI pipes, GI/MS sheet used in various item of work shall be calculated on the basis of measurement recorded in the measurement books for the purpose of payment and for assessing the consumption of materials used in the works. Over this quantity a variation of 5 % plus shall be allowed for wastage of materials during execution in case of cables ( other than under ground cables) wires, conduits/GI pipes and 10 % plus in case of GI/MS sheet.
  - (f) The provision made above are without prejudice to the right of the employer to take action against the contractor under the conditions of the contract for not doing the work according to the prescribed specification.

#### **7. TESTING OF MATERIALS**

The contractor shall provide assistance, instruments, materials, labour and any other arrangement normally required for testing, checking of materials and workmanship as stipulated in the specifications and by statutory authority at his own cost. The Employer has the right to appoint the testing authorities. The contractor shall pay for the cost of test samples, its packing, transportation including testing fees. Failing his so doing, the same shall be provided by the Engineer at the expense of the contractor and the expenses may be deducted from any money due to the contractor under the contract and / or from the Security Deposit or proceeds thereof or of a sufficient portion thereof.

#### **8. CONTRACTOR'S ENGINEERS / FOREMAN & WORKMEN**

(a) The contractor shall give all necessary personal superintendence during the execution of the Defects Liability Period. The contractor shall employ competent Site - Engineer/ Foreman as per CPWD norms and as approved by the Engineer whose qualification must conform to be requirement specified by the Engineer who shall be constantly in attendance of the work while the men are at work. Any directions, explanations, instructions or notices given by the Engineer to such Site-Engineer or Foreman or any other authorised agent shall be held to be given to the contractor.

(b) The contractor shall on the request of the Engineer immediately dismiss from the works any person employed thereon who may in the opinion to the Engineer be unsuitable or incompetent or who may in the opinion of the Employer misconduct himself.

#### **9. ACCESS**

(a) The Engineer, and the Employer or its representative shall at all reasonable tiworks and / or workshops, factories or other places the material are being prepared or constructed for the contract and also to any place where the materials are lying or from which they are being obtained and the contractor shall give every facility to them for inspection. Except the representatives of statutory authorities and those mentioned above no other person shall be allowed on the works at any time without the permission of the Engineer.

(b) If any work is to be done at a place other than the site of works, contractor shall obtain written permission of the Engineer.

#### **10. VARIATION & PRICE FOR VARIATION**

a) The Engineer with the approval of the Employer shall have power to make any alteration / omissions / additions and / or substitutions from the original specifications, drawings, designs, and written instructions and such alterations, omissions, additions, substitutions shall not invalidate the contract and any altered, additional, or substituted work which the contractor may be directed to do in the manner specified above as part of the work shall be carried out in all respects on which he agreed to do the main work. The rates for such altered, additional or substituted work under this clause shall be worked out in accordance with the following provisions in their respective order!

b) If the rates for the altered, additional, or substituted work are specified in the contract for the work, the contractor is bound to carry out the altered, additional, or substituted work at the same rates as are specified in the contract for the work.

c) If the rates for the altered, additional, or substituted work are not specifically provided in the contract for the work, the rates will be derived from the rates for a similar class of work as are specified in the contract for the work.

d) If the rates for the altered, additional, or substituted work cannot be determined in the manner specified in sub-clause (b) and (c) above, then the contractor shall, within 10 working days from the date of receipt of the order to carry out the work through notice in writing, inform the Engineer of the rate which it is his intention to charge for such class of work, supported by analysis of the rate

claimed which shall be based on actual cost of work plus 10% as contractor's profit and over -

heads except in case of departmental materials 2.5 %. When such notice has been given, the Engineer with the consent of the Employer may agree to such a rate but if the Engineer does not agree to the contractor's rate the Engineer may cancel his order to carry out such class of work and arrange to carry out in such a manner as he may consider advisable.

e) Under no circumstances, the contractor shall suspend the work on the plea of non-settlement of rates of items falling under the clause.

#### **11. FAULTY MATERIALS, WORKMANSHIP & DEFECTS AFTER COMPLETION**

(a) The Engineer shall have powers to require the removal from the site of all materials and work which in his opinion are not in accordance with specifications and in case of default, the Engineer shall be at Liberty to employ other persons to remove the same without being answerable or accountable for any loss or damage that may happen or arise to such materials to be substituted thereof and in case of default the Engineer may cause the same to be supplied and all costs which may attend such removal and / or substitution are to be borne by the contractor.

(b) If it shall appear to the Engineer or to the Employer based on audit / technical examination that any work has executed the unsound, imperfect, or unskillful workmanship or mater any inferior description, or that any materials or articles provided by him for the execution of the work are unsound or of a quality inferior to that contracted for or otherwise not in accordance with the contract, any defects, shrinkage or other faults which may appear within the defects liability period of twelve months from the date of completion arising in the opinion of the Engineer, the contractor shall on demand in writing which shall be made within twelve months of the completion of the work from the Engineer specifying the work, materials, articles defects or other faults complained

of notwithstanding that the same may have been passed, certified and paid for, forthwith rectify, or remove and reconstruct the work so specified in whole or in part, as the case may require or as the case may be, remove and reconstruct the work so specified in whole or in part, as the case may require or the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own cost. In case of any such failure, the Engineer may rectify or remove re-execute the work remove and replace with others, the materials or articles complained of as the case may be at the risk and cost in a respects of the contractor.

(c ) In lieu of rectifying the work not done in accordance with the contract, the Employer may, allow such work to remain, and in that case make allowance for the difference in value, together with such further reduction as in his opinion may be reasonable.

(d) Provided always that nothing in this cause shall relieve the contractor from his liability to execute the works in all respects inn accordance with the terms and conditions of this contract, or from his liability to make good all defects.

## **12.WORKS TO BE OPEN FOR INSPECTION**

(a)All work under or in course of execution or executed in pursuance of the contract shall at all times be open to the inspection and supervision of the Engineer and the contractor shall at all times during the usual working hours, and at all other times at which reasonable notice of the intention of the Engineer to visit the works shall have been given to the contractor, either himself be present to receive order and instruction or have a responsible agent duly accredited in writing present for that purpose.

(b)The contractor shall give not less than seven days notice in writing to the Engineer before covering up or otherwise placing beyond the reach of measurement any work in order that the same may be measured and correct dimensions thereof be taken before the same is so covered up or placed beyond the reach of measurement and shall not cover up and place beyond the reach of measurement, any work without the consent in writing of the Engineer and the Engineer shall within the aforesaid period of seven days inspect the work, and if any work shall be covered up or placed beyond the reach of measurement without such notice having been given or the Engineer's constant obtained the same shall be uncovered at the contractors expense or in default thereof no payment or allowance shall be made for such work or the materials with which the same was executed.

## **13.ASSIGNMENT OR SUB-LETTING**

(a)The contract shall not be assigned or sublet without the written approval of the Employer. And if the contractor shall assign or sub-let his contract or attempt to do so or become insolvent or commence any insolvency proceedings or make any composition with his creditors or attempt to do so or if any bribe, gratuity or gift, loan, perquisite, reward or advantage pecuniary or otherwise, shall either directly or indirectly, be given, promised or offered by the contractor or any of his servants or agents to any person in the employment of the Employer in any way directly or indirectly interested in the contract, the Employer shall have the power to adopt any of the courses specified under clause - 23 as may be best suited to the interest of the Employer and in the event of any of the courses being adopted the consequences specified in the said clause shall ensure.

(b)Where the contractor is a partnership firm, the approval in writing of the Employer shall be obtained before any changes in the constitution of the firm. Where the contractor is an individual or a Hindu undivided family business concern such approval as aforesaid shall likewise be obtained before the contractor enters into any partnership agreement hereunder the partnership firm would have the right to carry out the work be deemed to have been assigned or sublet in contravention of clause 13 (a) and the same action may be taken and the same consequences shall ensue as provided in the said clause 13 (a).

## **14.INDEMNIFYING AGAINST DAMAGES TO PERSONS, PROPERTY & STATUTES**

The contractor shall take all precautions to avoid all accidents by exhibiting necessary caution boards day and night, speed limit boards, red fags, red lights, and providing barriers. He shall be response for all damages and accidents caused due to negligence on his part. No hindrance shall be caused to traffic during the execution of work.

(a)The contractor shall be responsible for all injury to persons, animals or things, and for all damage, whether such injury or damage arises from carelessness or accident in any way connected therewith. This cause shall be held to include interalia any damage due to causes aforesaid to work, building whether immediately adjacent or otherwise and to roads, streets, foot paths, bridges or ways as we as all damage caused to the buildings and works forming the subject of this contract by inclemency of weather. The contractor indemnifies the Employer and holds him harmless in respect of all expenses arising from such injury or damages as aforesaid and also in respect of any award of compensation or damage consequent upon such cm including legal costs.

(b)The contractor shall reinstate all damage of every sort mentioned in this cause, so as to deliver the whole of the contracted works complete and perfect in every respect and so as to make good and otherwise satisfy all claims for damage as aforesaid to the property of third parties.

(c) The contractor also indemnifies the Employer against all claim which may be made upon the Employer for acts during the currency of this contract by any employee or representative of an employee of the contractor or any sub-contractors, employed by him, for any injury to or loss or life, of such employees, or for compensation payable under any law for the time being in force to any workmen or to the representative of any deceased or incapacitated workmen.

(d) The contractor also indemnifies the Employer against all claims which may be made upon the Employer for acts during the currency of this contract by the Central / State Government or local Municipal authorities for the noncompliance of any laws, regulations, rules pertaining to wages act, safety act in force and any amendments thereof in respect of all labour and apprentices directly or indirectly employed in the work under this contract.

(e)The Employer shall be at liberty and is hereby empowered to deduct the amount of any damages, compensation costs, charges and / or expenses arising or accruing from or in respect of any such claim and / or damages as aforesaid from any sum or sums due to become due to the contractor or security deposit.

(f)The contractor shall indemnify the Employer against any action, claim or proceedings relating to infringement or use of any patent or design or any alleged patent or design rights and shall pay any royalties which may be payable in respect of any article or part thereof included in the contract. In the event of any claims made under or action brought against the Employer in respect of any such matters as aforesaid the contractor shall be immediately notified thereof and the contractor shall be at liberty, at his own expense, to settle any dispute or to conduct any litigation that may arise therefore. Provided that the contractor shall not be

liable to indemnify the Employer if the infringement of the patent or design or any alleged patent or design right is the direct result of an order passed by the said Employer or his authorized representative.

#### **15. LIEN IN RESPECT OF CLAIM IN OTHER CONTRACTS**

(a) Any sum of money due and payable to the contractor including the security deposit under the contract may be withheld or retained by way of lien by the Employer or Government or any other contracting person or persons against any cm of the Employer or Government or such other persons in respect of payment of a sum of money arising out of or under any other contract made by the contractor with the Employer or Government or with such other persons.

(b) It is agreed term of the contract that the sum of money so withheld or retained under this cause by the Employer will be kept withheld or retained as such by the Employer or till his claim arising out of in the same contract or any other contract is either mutually settled or determined by the Arbitrator if the contract is governed by arbitration cause or by the competent court as the case may be, and that the contractor shall have no cm for interest or damages whatsoever on this account or any other ground in respect of any sum of money withheld or retained under this cause and duty notified as such to the contractor.

#### **16. WITHHOLDING & LIEN IN RESPECT OF SUMS CLAIMED**

(a) Whenever any claim or claims for payment of a sum of money arises out of or under the contract against the contractor, the Employer shall be entitled to withhold and also have a lien no retain such by or sums in whole or in part from the security deposit, if any furnished as the case may be and also have a lien over the over the same pending finalization or adjudication of any such claim. In the event of the security deposit being insufficient to cover the claimed amount or amounts or if no security deposit has been taken from the contractor, the Employer shall be entitled to withhold and have a lien to retain to the extent of such claimed amount or amounts referred to above, from any sum or sums found payable or which at any time there after may become payable to the contractor under the same or any other contract, with the Employer or any contracting person pending finalization or adjudication of any such claim.

It is an agreed term of the contract that the sum of money so withheld or retained under the len referred above, by the Employer w be kept withheld or retained as such by the Employer till the claim arising out of or under the contract is determined by the Arbitrator (if the contractor is governed by the arbitration clause) or by the competent court as the case may be and that the contractor will have no claim for interest or damages whatsoever on any account in respect of such withholding or retention under the lien referred to above and duly notified as such to the contractor. For the purpose of this clause, where the contractor is a partnership firm or a limited amount or amounts in whole or in part from any sum payable to any Partner / Limited company as the case may be, whether in his individual capacity or otherwise.

(b) The Employer shall have the right to cause an audit and technical examination of the works and the final bills of the contractor including all supporting vouchers, abstract etc., to be made after payment of the final bill and if as a result of such audit and technical examination any sum is found to have been over paid in respect of any work done by the contractor under the contract or any work claimed by him to have been done by him under the contract and found not to have been executed the contractor shall be liable to refund the manner prescribed in sub-clause (a) of this clause or in any other manner legally permissible; and if it is found that the contractor was paid less than what was due to him under the contract in respect of any work executed by him under it, the amount of such under-payment shall be duly by the Employer to the contractor.

Provided that the Employer shall not be entitled to recover any sum over-paid, nor the contractor shall be entitled to payment of any sum paid short where such payment has been agreed upon between the Employer on the one hand and the contractor on the other hand, under any term of contract permitting payment for work after assessment by the Employer.

#### **17. IN-CASE OF DEATH OF CONTRACTOR**

Without prejudice to any of the rights or remedies under this contract, if the contractor dies, the Employer shall have the option of terminating the contract without compensation to the contractor.

#### **18. SUB-CONTRACTORS**

The Employer reserves the right to use the premises and any portion of the site for the execution of any work not included in the contract. The contractor is to afford all reasonable facilities to all sub-contractors, specialists, merchants, tradesman and others who may at any time be appointed by the Employer for executing any work or supplying any goods relating to the constructions, servicing, equipping or furnishing of the work under this contract.

#### **19. COMPLIANCE TO LABOUR LAWS & APPRENTICE ACT**

The contractor shall comply with all the provisions of the Minimum Wages Act, 1948, Contract Labour (Regulation and Abolition) Act, 1970, and rules and orders framed there under and other labour laws affecting contract labour and Apprentice Act, 1961 and rules and orders framed there under that may be in force or brought into force from time to time. Contractor shall obtain a valid licence under Contract Labour (R & A) Act 1970 and Contract Labour (R & A) Central Rules 1971 before commencing work and which should be valid till the completion.

#### **20. COMPENSATION FOR DELAY**

(a) The time for carrying out the work as entered in the tender shall be strictly observed by the contractor and shall be deemed to be the essence of the contract on the part of the contractor. The work shall throughout the stipulated period of the contract be proceeded with all due diligence and the contractor shall pay as compensation an amount equal to one per cent or such smaller amount as the Employer (whose decision in writing shall be final) may decide on the amount of the whole work as shown in the agreement, for every week that the work remains uncompleted or unfinished after the proper dates.

(b) And further to ensure good progress during the execution of the work, the contractor shall be bound in all cases in which the time allowed for any work exceeds one month (save for special jobs) to complete one - eight of the whole of the work before one-fourth of the whole time allowed under the contract has elapsed; three-eights of the work before one-half of such time has elapsed, and three-fourths of the work before three - fourths of such time has elapsed. However for special jobs if a time schedule has been submitted by the contractor and the same has been accepted by the Employer, the contractor shall comply with the said time schedule. In the event of the contractor failing to comply with this condition, he shall be liable to pay as compensation an amount equal to one per cent or such smaller amount as the Employer (whose decision in writing shall be final) may decide on the said cost of the work for every week that the due quantity of work remains incomplete. Provided that the entire

compensation to be paid under the provisions of this clause shall not exceed ten per cent on the cost of the work as shown in the agreement.

## **21. DAMAGE TO WORKS IN CONSEQUENCE OF HOSTILITIES OR WAR - LIKE OPERATIONS**

(a) The work (whether fully constructed or not) and all materials, tools, and parts, scaffolding, temporary buildings and other things connected therewith shall be at the risk of the contractor until the work has been delivered to the Employer and a certificate from him to that effect obtained. In the event of the work or any materials properly brought to the site for incorporation in the work being damaged or destroyed in consequence of hostilities or war-like operation, the contractor shall, when ordered in writing by the Employer, remove any debris from the site, collect and properly stack or remove in store any serviceable materials salvaged from the damaged work and shall be paid at the contract rates in accordance with the provision of this agreement for the work of clearing the site of debris, stacking, removal of serviceable materials and for the reconstruction of all works ordered by the Employer such payment being in addition to compensation up to the value of the work originally executed before being damaged or destroyed and not paid for. In case of works damaged or destroyed but not already measured and paid for the compensation shall be assessed by the Employer. The contractor shall be paid for the damage / destruction suffered and for restoring the material at the rates based on the analysis of rates tendered for in accordance with the provision of this agreement. The certificate of the Employer regarding the quality and quantity of material and the purpose for which they were collected shall be final and binding on the contractor. (b) Provided always that no compensation shall be payable for any loss in consequence of hostilities or war like operation ( unless the contractor had taken all such precautions against Air Raid as are deemed necessary by the A.R.P. Officers or the Employer, (ii) for any materials etc., not on the site of the work or for any tools and plant, machinery, scaffolding, temporary bungs and other things not intended for the work. (c) In the event of the contractor having to carry out reconstruction as aforesaid, he shall be allowed such extension of time for its completion as is considered reasonable by the Employer.

## **22. EXTENSION OF TIME**

(a) If the contractor shall desire an extension of time for the completion of the work on the grounds of his having been unavoidably hindered in its execution or any other ground, he shall apply in writing to the Employer within thirty days of the date of hindrance on account of which he desires extension as aforesaid, and the Employer shall, if in his opinion (which shall be final) reasonable grounds shown therefore, authorize such extension of time if any, which may, in this opinion, be necessary or proper. (b) In the event, the value of work exceeds the value of the Bill of Quantities owing to variations the contractor shall be entitled to ask for extension of time in proportion to the increased value of work.

## **23. SUSPENSION OF WORK BY CONTRACTOR**

(a) The Employer may without prejudice to his right against the contractor in respect of any delay or inferior workmanship or otherwise or to any claims for damages in respect of any breaches of the contract and without prejudice to any rights or remedies under any of the provisions of this contract or otherwise and whether the date for completion has or has not elapsed by notice absolutely determine the contract in any of the following cases:

- (i) If the contractor having been given by the Engineer a notice to rectify, reconstruct or replace any defective work or that the work is being performed in any inefficient or otherwise improper unworkman - like manner shall omit to comply with the requirements or such notice for a period of seven days thereafter or if the contractor shall delay or suspend the execution of the work so that in the judgment of the Employer (which shall be final and binding) he will be unable to ensure completion of the work by date for completion or he has already failed to complete the work by that date.
- (ii) If the contractor being a company shall pass a resolution or the court shall make an order that the company shall be wound up or if a receiver or a manager on behalf of a creditor shall be appointed or if circumstances shall be wound up or if a receiver or a manager on behalf of a creditor shall be appointed or if circumstances shall arise which entitle the court of creditor to appoint a receiver or a manager or which entitle the court to make a winding up order.
- (iii) If the contractor commits breach of any of the terms and conditions of this contract.
- (iv) If the contractor commits any acts mentioned in Clause - 13 hereof.

(b) When the contractor has made himself liable for action under any of the cases aforesaid, the Employer shall have the following powers:

- (i) To determine or rescind the contract as aforesaid (of which termination or rescission notice in writing to the contractor under the hand of the Employer shall be conclusive evidence). Upon such determination or rescission the security deposit of the contractor shall be liable to be forfeited and shall be absolutely at the disposal of the Employer.
- (ii) The Engineer may employ labour paid by the Employer and to supply materials to carry out the work or any part of the work debiting the contractor with the cost of the labour and the price of the materials (of the amount of which cost and price certified by the Engineer shall be final and conclusive against the contractor) and crediting him with the value of the work done in all respects in the same manner and at the same rates as if it had been carried out by the contractor under the terms of his contract. The certificate of the Engineer as to the value of the work done shall be final and conclusive against the contractor, provided always that action under the sub-clause shall only be taken after giving notice in writing to the contractor. Provided also that if the expenses incurred by the Employer are less than the amount payable to the contractor at his agreement rates, the difference should not be paid to the contractor.
- (iii) After giving notice to the contractor to measure up the work of the contractor and to take such part thereof as shall be unexecuted out of his hands and to give it to another contractor to complete in which case any expenses which may be incurred

in excess of the sum which would have been paid to the original contractor if the whole work had been executed by him (of the amount of which

exceed the certificate in writing of the Engineer shall be final and conclusive) shall be borne and paid by the original contractor and may be deducted from any money due to him by the Employer under his contract or any other account whatsoever or from his security deposit.

(iv) In the event any one or more of the above courses being adopted by the Employer the contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials or entered into any engagements or made any advances on account or with a view to the execution of the work or the performance of the contract. And in case action is taken sum for any work thereof or actually performed under this contract unless and until the Engineer has certified in writing the performance of such work and the value payable in respect thereof and he shall only be entitled to be paid the value so certified.

#### **24. SECURED ADVANCE**

The contractor on signing an indenture in the form specified by the Employer during the progress of the execution of the work may be paid if agreed by the Employer up to 75 per cent of the estimated value which shall taken into account the market value and contractors tendered rates for the finished item of any materials which in the opinion of Engineer is likely to be incorporated in the work within next three months, are nonperishable and are in accordance with the contract and which have been brought on the site in connection therewith and are adequately stored and protected against damage by weather or other causes buy t which have not a t the time of advance been incorporated in the works. When materials on account of which and advance has been made under this clause are incorporated in the work the amount of such advance shall be deducted from the next payment made under any of the clause or clauses of this contract.

#### **25. CERTIFICATES & PAYMENTS**

(a) No payments shall be made for a work estimated to cost Rupees ten thousand or less till the whole of the work shall have been completed and certificate of completion given. But in the case of a work estimated to cost more than Rupees ten thousand, the contractor shall, on submitting the bill be entitled to receive a monthly payment proportionate to the part of at work executed, and to the satisfaction of the Engineer, whose certificate of the sum so payable shall be final and conclusive against the contractor, provided the amount of work done is as per the value of intermediate certificate or for a lesser amount at the discretion of the Engineer as mentioned in the NIT. All such intermediate payments for work actually done and completed and shall not preclude the requiring of bad, unsound, imperfect or unskilled work to be removed and taken away and reconstructed, or rejected or be considered as an admission of the due performance of the contract, of any part thereof in any respect or the accruing of any claim nor shall it conclude, determine, or affect in any way the powers of the Employer under these conditions or any of them as to the final bill shall be submitted by the contractor within tow months of the date fixed of the certificate of completion furnished by the Employer and payment shall be made within three months if the value of the completed works is up to Rs. Two lakhs of the submission of such bill. If there shall be any dispute about any item or items of the work then the undisputed item or items only shall be paid within the said period of three months or six month as the case may be.

(b) Whenever there is likely to be delay in recording detailed measurements for making a running payment, advance payment without detailed measurement for work done worked out at 75 per cent of the tendered rates for assessed quantities may be made in running account bills by the employer on the basis of a certificate from the Engineer. The advance payments so allowed shall be adjusted in the subsequent running bills by taking detailed measurements thereof. Final payments shall be made only on the basis of detailed measurements.

(c) A bill shall be submitted by the contractor each month on or before the date fixed by the Engineer on printed forms obtainable from the Engineer's office. The Engineer shall take or cause to be taken the requisite measurements for the purpose of having the same verified and the claim, as far as admissible, adjusted as far as possible, before the expiry of ten days from the presentation of the bill. If the contractor does not submit the bill within the time fixed as foresaid the Engineer may cause action within seven days of the date fixed as aforesaid, an authorized representative to measure up the said work in the presence of the contractor whose signature to the measurement will be sufficient warrant and the Engineer may prepare the bill from such measurements.

(d) Before taking any measurement of any work the Engineer or his authorized representative deputed by him shall give reasonable notice to the contractor. If the contractor fails to attend such notice or fails to sign or to record the difference within a week from the date of measurement in the manner required by the Engineer then in ay such event the measurement taken by the Engineer or buy the authorized representative deputed by him as the case may be, shall be final and binding on the contractor and the contractor shall have no right to dispute the same.

(e) The charges in the bills shall always be entered at the rates specified in the agreement or in the case of any extra work ordered in pursuance of these conditions and not mentioned or provided the rate determined as per clause - 10. However in case or partially executed items of work, the Employer at his discretion allows proportionate rates for such items as determined by the Engineer whose certificate of the sum so payable shall be final and conclusive against the contractor.

#### **26. SECURITY DEPOSIT**

(a) The contractor shall permit the Employer at the time of making any payment to him for the work done and measured to deduct sum at the rate of 10 % of the gross value of work done in each running bill along with Earnest Money if any, as already deposited by the contractor will amount to 10% of the estimated cost or Rs 5.0 lakhs whichever is less, unless full amount of security deposit in cash or in the form of fixed deposit receipts pledged in favour of the Employer has been deposited.

(b) In case a fixed deposit receipt of any scheduled bank is furnished by the contractor to the Employer as part of the security deposit and the bank goes into liquidation or for any reasons is unable to make payment against the said fixed deposit receipt, the loss caused thereby shall fall on the contractor and the contractor shall forthwith on demand furnish additional security



deposit, provided always that the Employer for this purpose shall be entitled to recover the said percentage of the amount from each running bill till the balance of the amount of security deposit is realized. All compensation or the other sums of money payable by the contractor under the terms of this contract may be deducted from the security deposit or from the interest arising there from or from any sums which may be due to or may become due to the contractor by the Employer on any account whatsoever and in the event of his security deposit being reduced by reason of any such deductions aforesaid, the contractor shall within ten days make good in cash or further fixed deposit receipt pledged in favour of the Employer. The security deposit shall be collected from the running bills of the contractor at the rates mentioned above and the earnest money if deposit at the time of tenders will be treated as part of the security deposit.

(c) The contractor if he so desires may furnish fixed deposit receipt in advance towards the security deposit. Such fixed deposit receipt shall be of a minimum value of Rs 25000/-each (The last such fixed deposit receipt could be of a lower value on the basis of the amount). In case any recovery is affected from running account bills, such recovered amount shall not be replaced with fixed deposit receipt. It is in the contractor's interest to keep a watch about the adequacy of the fixed deposit receipt submitted.

(d) No partial refund of security deposit shall be made during the defect liability period. In case the final bill is not settled within stipulated period for reasons beyond control and the Employer is satisfied that the security deposit is not required for adjustment of Employers dues or whatsoever dues either in this or any other contract then this security deposit either in full or in part could be refunded at the sole discretion of the Employer.

(e) However, release of security deposit would be only after written clearance of Labour Officer regarding no dues or claims is received. In case of termination of contract, this security deposit shall be forfeited and amount necessary to make up this amount shall be recovered from money due to the contractor under this contract, or any other contract with the Employer.

## 27. COMPLETION CERTIFICATE

Within ten days of the completion of the work, the contractor shall give notice of such completion to the Employer and within days of the Engineer shall inspect the work. If there is no defect in the work the Employer shall furnish the contractor with a certificate of completion otherwise a certificate of completion indicating defects shall be issued but the work shall not be considered to be completed until the contractor shall have removed from the premises on which the work shall be executed all the scaffolding, surplus material, rubbish, and all huts and sanitary arrangements required for his work, people on the site in connection with the execution of the works as shall have been erected or constructed by the contractor and cleaned of the dirt, splashes, droppings of finishing items from all wood work, doors, windows, walls, floors or other parts of any building, in, upon or about which the work is to be executed or of which he may have had possession for the purpose of the execution thereof. If the contractor shall fail to comply with requirements of this clause on or before the date fixed for the completion of the work, the Employer may at the risk and cost of the contractor take action as he may think fit and the contractor take action as he may think fit and the contractor shall have no claim except for any sum actually realized by the sale thereof.

## 28. ESCALATION

(a) If the prices of materials (not being materials supplied by the Employer and / or wages of labour required for execution of the work increase, the contractor shall be compensated for such increase as per provisions detailed below and the amount of the contractor shall accordingly be varied, subject to the condition that compensation for escalation in prices shall be available only for the work done during the stipulated period of the contract including such period for which the contract is validly extended under the provisions of Clause 22 of General Conditions of Contract without levy of compensation under Clause - 20 of General Conditions of Contract and also subject to the condition that no such compensation shall be payable for a work for which the stipulated period of completion is six months or less. Such compensation for escalation in the prices of materials and labour when due, shall be worked out based on the following provisions.

(i) The base date for working out such escalation shall be the last date on which the tenders were stipulated to be received.

(ii) The cost of work on which escalation will be payable shall be reckoned as 85% the cost of the work as per the bills, running or final, and from this amount the value of material supplied by the Employer and proposed to be recovered in the particular bill shall be deducted before the amount of

compensation for escalation is worked out. In case of materials brought to site for which secured advance is included in the bill full value of such materials as assessed by the Engineer in charge (and not the reduced amount for which secured advance has been paid), shall be included in the cost of work done for operation of this clause. Similarly, when such materials are incorporated in the work, the secured advance is deducted from the bill the full assessed value of the materials originally considered for operation of this clause shall be deducted from the cost of work shown in the bill running or final. Further the cost of work shall not include any work for which payment is made for any item at prevailing market rates.

(iii) The compensation for escalation for materials & labour shall be worked out as per the formula given below:

(MI-MIO) /MIO

VM= W A /100 x MI-Mio/MIo

VM-Variation in material cost i.e. increase or decrease in the amount in rupees to be paid or recovered.

W -Cost of work done worked out as indicated in sub Para (ii) above.

A- Component of materials expressed as per cent of the total value of work and is predetermined as 75.

MI- Index numbers of Wholesale prices in India for all commodities published by the Reserve Bank of India for the period under reckoning.

Mio- Index numbers of Wholesale prices in India for all commodities published by the Reserve Bank of India on the date of receipt of tenders.

(LI - LIo)

VL= W x B/100 x LI- Lio/LIo

VL- Variation in labour cost i.e. increase or decrease in the amount in rupees to be paid or recovered.

W- Value of work done, worked out as indicated in sub para (ii) above.

B- Component of labour expressed as per cent of the total value of work and is predetermined as 25.

LI- All India consumer price index numbers for industrial workers published by the Reserve Bank of India for the period under reckoning as for the period under consideration.

Llo- All India consumer price index numbers for industrial workers published by the Reserve Bank of India and valid on the stipulated date of receipt of tenders.

(b) The following principle shall be followed while working out indices mentioned in sub Para (iii) above.

(i) The compensation for escalation shall be worked out at half yearly intervals and shall be with respect to the cost of work done during the six calendar months of the said work. The first such payment shall be made at the end of the six months after the month (excluding) in which the tender was accepted and thereafter at six monthly interval. At the time of completion of work, the last period for payment might become less than six months, depending on the actual date of completion.

(ii) The index (MI or LI) relevant to any six months for which such compensation is paid shall be the arithmetical average of the indices relevant to the six calendar months. If the period up to date of completion after six months covered by the last such installment of payment is less than six months, the index MI or LI shall be the average of the indices for the months falling within that period.

(iii) The base index (Mio or Llo) shall be the one relating to the month in which the tender was stipulated to be received.

(c) In the base event the price of materials and / or wages of labour required for execution of the work decreases there shall be downward adjustment of the cost of work so that the price of materials and / or wages of labour shall be deductible from the cost of work under this contract and in this regard formula herein before stated under this clause shall mutates mutandis apply, provided that no such adjustment for the decrease in the prices of materials and / or wages of labour aforementioned would be made in case of contracts in which the stipulated period of completion of the work is six months or less.

## 29. ARBITRATION

(a) Except where otherwise provide in the contract, all questions and disputes relating to the interpretation of the specifications, design ns, drawings and instructions herein before mentioned, and as to the quality or workmanship or materials used on the work or as to any other question, claim, right, matter or thing whatsoever in any way arising out of or relating to the contract, designs, specifications, estimates, instruction, orders on these conditions or otherwise concerning the works, or the execution or failure to execute the same, whether arising during the progress of the work or after the completion or abandonment thereof, shall be referred to the sole arbitration of the person appointed by the Director – CSIR NEIST, Council of Scientific & Industrial Research. The arbitrator shall be appointed within 30 day. The arbitrator to whom the matter is originally referred, being unwilling or unable to act for any reason, the Director – CSIR NEIST shall appoint another person to act as arbitrator in accordance with the terms of the contract. Such person shall be entitled to proceed with the reference from the stage at which it was left by his predecessor. It is also a term of the contract that no person other than person appointed by such Director, CSIR NEIST aforesaid should act as arbitrator and if for any reason that is not possible, the matter is not to be referred to arbitration at all. In call cases where the amount of dispute is rupees two lakhs and above the arbitrator shall give a speaking award.

(b) It is also a term of the contract that the party invoking arbitration shall specify the dispute or disputes to be referred to arbitration under this clause together with the amount or amounts claimed in respect of each such dispute.

(c) It is also a term of the contract that if the contractor does not make any demand for arbitration in respect of any claim in writing within 90 days of receiving the intimation from the Employer that the final bill is ready for payment, the claim of the contractor will be deemed to have been waived and absolutely barred and the Employer shall be discharged and released of all liabilities under the contract in respect of these claims.

(d) The Arbitrator may from time to time with consent of parties enlarge the time for making publishing the award.

(e) Subject as aforesaid the provisions of the Arbitration Act, 1940, or any statutory modification or re-enactment thereof and the rules made thereunder and for the time being in force shall apply to the arbitration reference under this clause.

### \*\*\*SPECIAL CONDITIONS\*\*\*

1. These special conditions are meant to amplify the general specifications and general conditions of contract.

2. Work shall be done as per CPWD specification.

In case of any discrepancy, the order of precedence in interpretation shall be as under:-

- (i) Schedule of quantities
- (ii) General conditions of contract
- (iii) Special conditions, Additional conditions & Additional Specifications.
- (iv) Specialist work, the specification of which are attached.
- (v) Additional specifications for Electrical works- conduit laying, boxes etc.
- (vi) CPWD latest Civil and Electrical specifications
- (vii) IS codes
- (viii) International codes
- (ix) Best Engineering practice

## 3. STEEL

(i) Steel to be issued as stated elsewhere in the contract shall be for reinforcement bars for RCC work.

(ii) Reinforcement bars for RCC work will be issued in available coils and straight lengths.

(iii) Issue of steel of diameters above 10 mm dia will be regulated on sectional weight basis, weight being calculated with the help of the standard sectional weights as given in the CPWD latest specifications for conversion of length to weight. However, for bars up to and including 10 mm dia the following procedure shall be adopted. The average sectional weight for each diameter shall be arrived at from samples from each lot of steel received at The actual weight of steel issued shall be modified to take into

account variations between the actual and the standard co-efficient and the contractor's account will be debited by the cost of this modified quantity only.

(iv) For theoretical consumption of steel reinforcement bars w be balanced diameter wise for the purpose of penal recovery as envisaged in the contract.

#### **4. CEMENT**

Cement to be issued as stated elsewhere in the contract shall be only for site work. For factory made products such as Pre-cast tiles, hollow concrete blocks, RCC pipes etc. cement shall not be issued.

5. Unless otherwise provided in the schedule of quantities the rates tendered by the contractor shall apply for all heights, fits, leads and depths of the work and nothing extra shall be payable on this account.

6. The surplus excavated earth which is beyond the requirement of the Employer's work may be allowed by the Employer to be disposed off by the contractor on his own or se the surplus excavated earth to private parties at his discretion but nothing extra will be paid for the carriage or disposal of surplus earth if the same is not required on any other work of the Employer.

#### **\*\*\*ADDITIONAL CONDITIONAL\*\*\***

The structural and architectural drawings shall at all times be properly correlated before executing any work. However, in case of any discrepancy in the item given in the schedule of quantities appended with the tender and drawings relating to the relevant item the former shall prevail unless and otherwise given in writing by the Engineer.

2. No payment shall be made to the contractor for any damage caused by rain, snowfall floods or any other natural cause whatsoever during the execution of work. The damage to work will be made good by the contractor at his own cost, and no claim on this account shall be entertained.

3. All materials used shall be as per specifications and ISI marked wherever applicable. ISI marking referred relate to latest BIS code as published by Bureau of Indian Standards up to 30 days before the date of opening the tender.

4. The contractor shall give a performance test of the entire installation (s standard specifications and/ or as directed by the Engineer and will also submit. Test certificates as are required by Municipal / Electrical authority or any other authority. Nothing extra shall be payable for the same other than the fees paid to such authorities, which shall be reimbursed on production of receipts.

#### **\*\*\*INDENTURE FOR SECURED ADVANCE\*\*\***

This indenture made the \_\_\_\_\_ day \_\_\_\_\_ 20 between \_\_\_\_\_

hereinafter called the contractor which expression shall where the context so admits or implies be deemed to include his heirs, executors, administrators and permitted assignees of the one part and Council of Scientific & Industrial Research, New Delhi, a Society registered under the Societies Registration Act 1860 hereinafter caed the Employer which expression shaude its successors and assignees and authorized officers of the Society of the other part.

WHEREAS by an agreement dated \_\_\_\_\_ (hereinafter called the sad agreement) the contractor has agreed AND WHEREAS the contractor has applied to the Employer that he may be allowed advances on the security of materials absolutely belonging to him and brought by him to the site of the works the subject of the said agreement for use in the construction of such of the works as he has undertaken to execute at rates fixed for the finished work (inclusive of the cost of materials and labour and other charges) AND WHEREAS the Employer has agreed to advance to the contractor the sum of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_) on the security of materials the quantities and other particulars of which are detailed in accounts of secured advances attached to the running account Bill for the said works signed agreement and in consideration of the sum of Rs. \_\_\_\_\_ on or before the execution of these presents paid to the contractor by Employer (the receipt whereof the contractor doth hereby acknowledge) and of such further advances (if any) as may be made to him as aforesaid the contractor doth hereby covenant and agree with the Employer and declare as follows:-

1. That the said sum of Rs. \_\_\_\_\_ advanced by the Employer to the contractor as aforesaid and all or any further sum or sums advanced as aforesaid shall be employed by the contractor in or towards expediting the execution of the said works and for no other purpose whatsoever.

2. That the materials detailed in the said account of secured advance which have been offered to and accepted by the Employer as security are absolutely the contractor's own property and free from encumbrances of any kind and the contractor will not make any application for or receive a further advance on the security for materials which are not absolutely his own property and free from encumbrances of any kind and the contractor indemnifies the Employer against all claims to any materials in respect of which and advance has been made to him as aforesaid.

3. That the materials detailed in the said account of secured advances and all other materials on the security of which any further advance or advances may hereafter be made as aforesaid (hereinafter called the said materials) shall be used by the contractor solely in the execution of the said works in accordance with the directions of the Engineer and in the term of the said agreement.

4. That the contractor shall make at his own cost all necessary and adequate arrangements for the proper watch, safe custody and protections against all risks of the said materials and that until used in construction as aforesaid the said materials shall remain at the sit of the said works in the contractor's custody and on his own responsibility and shall at all times be open to inspection by the Employer or any officer authorized by him. In the event of the said materials or any part thereof being stolen, destroyed or damaged or becoming deteriorated in a greater degree that is due to reasonable use and wear thereof the contractor will forthwith replace the same with other materials of like quality or repair and make good the same as required by the Engineer.

5. That the said materials shall not on any account be removed from the site of the said works except with the written permission of the Employer or any officer authorized by him on that behalf.

6. That the advances shall be repayable in full when or before the contractor receives payments from the Employer of the price payable to him for the said works under the terms and provisions of the said agreement. However, if any intermediate payments are made to the contractor on account of work done then on the occasion of each such payment the Employer will be at liberty to make a recovery from the contractor's bill for such payment by deducting therefrom the value of the said materials then actually used in the construction and in respect of which recovery has not been made previously, the value for this purpose being determined in respect of each description of materials at the rates at which the amounts of the advances made under these presents were calculated.

7. That if the contractor shall at any time make any default in the performance or observance in any respect of any of the terms of provisions of the said agreement or of these presents the total amount of the advance of advances that may still be owing to the Employer shall immediately on the happening of such default be repayable by the contractor to the Employer together with interest thereon at twelve per cent per annum from the date or respective dates of such advance or advances to the date of repayment and with all costs charges, damages, and expenses incurred by the Employer in or for the recovery thereof or the enforcement of this security or otherwise by reason of the default of the contractor and the contractor hereby covenants and agrees with the Employer to repay and pay the same respectively to him accordingly.

8. That the contractor hereby charges all the said materials with the repayments of the Employer of the said sum of Rs. \_\_\_\_\_ and any further sum or sums advanced as aforesaid and all costs charges, damages and expenses payable under these presents PROVIDED ALWAYS and it is hereby agreed and declared that notwithstanding anything in the said agreement and without prejudice to the powers contained therein if and whenever the covenant for payment and repayment herein before contained shall become enforceable and the money owing shall not be paid in accordance therewith the Employer may at any time thereafter adopt all or any of the following courses as he may deem best

a). Seize and utilize the said materials or any part thereof in the completion of the said works on behalf of the contractor in accordance with the provisions in that behalf contained in the said agreement debiting the contractor with the actual cost of effecting such completion and amount due in respect of advances under these presents and crediting the contractor with the value of work done as if he had carried it out in accordance with the said agreement and at the rates thereby provided. If the balance is against the contractor he is to pay same to the Employer on demand.

b). Removed and sell by public auction the seized materials or any part thereof and out of the moneys arising from the sale retain all the sums aforesaid repayable or payable to the Employer under these presents and pay over the surplus (if any) to the contractor.

c). Deduct all or any part of the moneys owing out of the security deposit or any sum due to the contractor under the said agreement.

9. That except in the event of such default on the part of the contractor as aforesaid interest on the said advance shall not be payable.

In witness whereof the said \_\_\_\_\_ and \_\_\_\_\_ by the order and under the direction of the Employer have hereunto set their respective hands the day and year first above written.

Signed sealed and delivered by the said contractor : \_\_\_\_\_

In the presence of

Signature: \_\_\_\_\_

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

Signed by : \_\_\_\_\_

By the order and direction of the Employer : \_\_\_\_\_

In the presence of

Signature : \_\_\_\_\_

Name : \_\_\_\_\_

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

**NORTH-EAST INSTITUTE OF  
SCIENCE & TECHNOLOGY**

**(Formerly Regional Research Laboratory)**

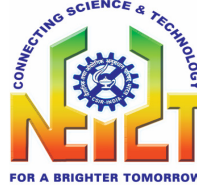
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**SUPPLYING INSTALLATION, TESTING & COMMISSIONING OF  
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