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INDIAN INSTITUTE OF ASTROPHYSICS

IIND BLOCK, SARJAPUR ROAD, KORAMANGALA,
BANGALORE-560 034

PUBLIC TENDER NOTICE NO:PR/PT/SR/TRANSFORMER/CAP/281 **DATED 16TH AUGUST 2013**

The Director, Indian Institute of Astrophysics invites Quotations/Bids Two bid system (both Technical bid and Commercial bid) from reputed firms for the following.

Sl.No.	Description	Quantity	E.M.D (Refundable) Rs.	Tender Fee (Non-refundable) Rs.
	Supply of Copper wound 500 KVA 11KV/433V Delta/Star Connected outdoor, ONAN cooling type, transformer with off-load tap changer ranging +5% to -10% with 2.5% per step, with all necessary parts as per the specification in the ANNEXURE - I. The item should be Bee approved, Star rated, eco friendly & BESCOM approved.	01 No.	23,750/-	300/-

Note: The Tender documents with Specification details are available on IIA website www.iiap.res.in/tenders.htm. Hence the interested tenderers may at their option down load the same from our website (as no hard copies of Tender documents is/are provided from this office) and submit their offer both Technical bid and Commercial bid along with EMD (refundable) & Tender fee (non-refundable) prescribed therein, only in the form of Demand Draft drawn in favour of Director, IIA. However, your offer with Technical bid and Commercial bid should be superscribed in different envelopes mentioning the tender notice no., Date of opening, and submit the Technical bid and Commercial bid in separate sealed envelopes addressed in favour of Director, Indian Institute of Astrophysics, Bangalore – 560 034.

02. The firms who fulfill the following requirements shall be eligible to submit their bid. Joint ventures are not acceptable.

(a) Tendering Company shall be professionally managed and equipped with facility for the supply and maintenance of tendered items.

(b) The tenderers should have completed, the last 3 financial years (i.e., current year and two previous financial years) at least one similar single work for a minimum value of Rs.10 Lacs.

(c) The total contract amount received during the last 3 financial years, and the current financial year should be minimum of 150% of the above mentioned value. The tenderer should submit Audited Balance Sheet duly certified by the chartered accountant to this effect. They should also submit Bankers Solvency Certificate to a minimum of Rs.10 Lacs.

(d) The Private Body Contractor shall be required to produce the TDS Certificate indicating the Income Tax deducted by the client for the execution of similar items, completed individually of value not less than Rs.10 Lacs.

03. The Bids supported by the above information should be submitted in Sealed envelopes duly superscribed with the name of work/item. The completed Bids both Technical bid and Commercial bid will be received by this office **upto 15.00 Hrs. latest by 19th September 2013.**

04. If any information furnished by the tenderers is found incorrect at a later stage, the firm shall be liable to be debarred from tendering and taking up work in IIA. The Institute reserves the right to verify the particulars furnished by the tenderers.

05. The interested tenderers may contact Mr.G.Srinivasulu, OSD Electrical (Ph.No.080-22541216) to discuss Technical Clarification and Shri.Y.K.Raja Iyengar (Ph.No.080-22541244) for Commercial Clarifications, if any, on or before 10th September 2013 during office hours, before submitting bids.

06. The firms should submit the bids superscribed along with EMD and Tender fee of prescribed amount **upto 15.00 Hrs. Latest by 19th September 2013.** The Technical Bids will be opened in presence of the bidders or their authorized representatives **at 15.30 Hrs. on 19th September 2013.**

07. Incomplete bids are liable for rejection.

08. Late / delayed offer will not be considered.

09. IIA is not responsible for any delay / loss of documents in transit.

10. No bids will be considered if prescribed Tender Fee and EMD is not found with the Technical bid.

11. The offer should be valid for a minimum period of 120 days from the date of opening of bid.

12. The Commercial / Price bids will be opened in the presence of vendors or their representatives only for those vendors Quotes qualify in technical evaluation. The opening of Commercial bids date will be intimated later. However, the decisions for finalization shall be done by a technical evaluation committee being nominated for this purpose approved by the Head of the Institution.

13. IIA reserves the right to reject any or all tenders without assigning any reasons.

**Administrative Officer
IIA, Bangalore-34**

ANNEXURE - I

500 KVA 3 Phase Copper wound 11KV/433V Outdoor Transformer

Design manufacture and supply of ONE number of Copper wound 500 KVA, 11 KV/433V Delta/Star connected ONAN cooling Outdoor type transformer with Off-Load tap changer (+5% to -10%@step 2.5%)

Two Neutral Bushings on LT side: One in the cable end Box and other on the Top cover of the tank. Easily detachable cable boxes on HT & LT sides.

The transformer shall be provided with first filling of Oil. The transformer oil shall conform to the latest Indian standards.

The transformer shall be fitted with an explosion Vent of suitable size.

Provide provisions for Earthing of all accessories as per schedule conforming to latest amendments of CEA (Central Electricity Authority) and BESCO(Bangalore Electricity Supply Company Limited).

Detailed drawings of the transformer including the electrical schematic and GA diagram given all dimensions shall be furnished along with the quotation.

1. Service Conditions

i.	Max. Ambient air Temperature	:	50° C
ii.	Max. Relative Humidity	:	100%
iii.	Max. Annual Rainfall	:	1450 mm
iv.	Max. Altitude	:	1000 m

2. Specifications

i.	Installation	:	Outdoor
ii.	System Fault Level	:	350 MVA at 11 KV
iii.	System Voltage	:	Nominal: 11KV,Maximum:12KV
iv.	System Neutral	:	Solidly Earthed

3. Ratings

i.	Full Rating on Lowest Tap	:	500 KVA
ii.	No Load Voltage	HV	: 11000 V
		LV	: 433 V
iii.	No. of Phase	HV	: 3
		LV	: 3
iv.	Winding connections	HV	: Delta
		LV	: Star with Neutral-One for connection and for Earthing.
Cable Neutral-Two			
v.	Rated Frequency	:	50 Hz \pm 5%
vi.	Vector Group	:	Dyn 11
vii.	Type of Cooling	:	ONAN (Oil Natural Air Natural)
viii.	Direction of Power Flow	:	From HV to LV
ix.	Tap Changer	:	Off Load Tap Changer from +5% to -10% in Steps of 2.5%
x.	Insulation Class	:	Impulse Level 75 KV for HT
	Power Frequency withstand on HT	:	28KV for one minute & continuous
	withstand on HT :		12 KV
	Power Frequency withstand on LT	:	3 KV for one minute & continuous
	withstand on LT:		1.1 KV

4. Design & Construction

4.1 Core

i. For Stack core: The core shall be of high prime grade cold rolled grain oriented (CRGO) annealed steal lamination having low loss and good grain properties, coated with hot oil proof insulation, bolted together to the frames firmly to prevent vibration or noise. All core clamping bolts shall be effectively insulated. The complete design of core must ensure permanency of the core losses with continuous working of the transformers.

ii. The construction of Top/Bottom Yoke shall be one. No Cut Core shall be allowed by any case.

iii. The grade of core laminations shall be HIB grade. The grade of core laminations shall be _____ required to submit the manufacturer's Test Report showing the Watt Loss per kg and _____ the thickness of the Core Lamination, to ascertain the Quality of Core Materials.

iv. Core base and bottom Yoke shall be supported with 75 x 40 mm MS Channel properly _____ bolted together. In No case Flat or Cut channels shall be accepted.

v. Flux Density should not be more than 1.5 Tesla at the Rated Voltage and Frequency. The _____ value of Flux Density allowed in the design shall be clearly stated in the offer along with _____ graph.

vi. The No Load current at Rated Voltage, shall not exceed the percentage given below.

At Rated Voltage: 1.25% of the Full Load Current in LV winding

At 112.5% Rated Voltage: 2.5% of the Full Load Current.

vii. Number of Steps of Core shall be minimum 9 for 500 KVA Transformer.

4.2 Windings

i. Materials: Double paper covered Electrolytic Copper Conductor shall be used for HV and LV windings.

ii. Current Density: Current Density for HV and LV winding or any part should not be more than 2.8 A/sq.mm on any working tap including extreme tap.

iii. LV Neutral formation shall be at Top.

iv. Vertical Ducts & sufficient spacers should be provided between HV & LV windings.

v. The Current Density of Delta Lead shall not exceed 2.5 Amp/sq.mm

vi. The number of LV coil and HV coil in one limb shall be 1&6 in each case.

4.3 Losses

The Losses shall not exceed the values given below:

KVA	No Load Losses (W)	Load Losses (W) at 75° C
500	825	6250

Noise Level shall be less than 56 dB.

4.4 Insulation Materials & Clearance

- i. Materials: Makes of Electrical grade insulating craft paper, press board.
- ii. The Electrical Clearance between the winding and Body of the Tank (between inside surface of the tank and outside edge of the windings) should not be less than 25 mm for 11 KV class.
- iii. The Clearance between HV Coil & Top/Bottom Yoke shall be 25 mm (min).
- iv. Inter Coil insulation shall not be less than 9 mm.
- v. The insulation between Core & LV shall be 4 mm (min).
- vi. The insulation between HV coil & LV coil shall be 11 mm (min).
- vii. Minimum 8 nos. of wedges to be provided.

4.5 Impedance Value

The percentage impedance at 75° C shall be 5% for 500 KVA Transformer with positive tolerance of 10%. No Negative tolerance on % impedance is allowed.

4.6 Tank

- i. The Transformer tank shall be made up of prime quality, high grade, low carbon steel plate & suitable for welding. The transformer tank shall be of robust construction. All joints of tank and fittings should be oil tight and no bulging shall occur during service. Tank inside shall be painted by hot oil resistant varnish or paint.
- ii. The tank should be of rectangular shape. Horizontal or Vertical joints in tank side walls and its bottom or top cover will be not be allowed. In addition the cover of the main tank shall be provided with an air release plug.

Side wall thickness : 3.15 mm (min)

Top and bottom plate thickness: 5 mm (min)

- iii. Reinforced by welded angle 50 x 50 x 6 mm on all the outside walls on the edge of tank to form two equal compartments. The permanent deflection is not more than 5 mm up to 750 mm length and 6 mm up to 1250 mm length when transformer tank without oil is subject to air pressure of 35 Kpa above atmospheric pressure for 30 min.

- iv. Lifting Lugs: 4 nos. of MS plate welded heavy duty lugs and pulling lugs shall be provided.
- v. Two separate earthing terminals shall be provided on both side of the tank bottom frame.

4.7 Cleaning and Surface preparation

After all machining, forming and welding has been completed, all steel works including radiators shall be thoroughly cleaned of rust, scale, welding slag or spatter and other condemnations prior to any paintings.

Steel surface shall be prepared by sand blast cleaning in accordance with ISO 8501 part I or chemical cleaning by seven tank process including phosphating to the appropriate quality.

4.8 Painting

All primers, paints when applied in normal full coat, shall be free from rust, sags, wrinkles, patchiness, brush marks or other defects.

All primers shall be well marked into the surface, particularly in areas where painting is evident, and the first priming coat shall be applied as soon as possible after cleaning.

Tank, Pipes, Radiators:

External surface: To be coated with epoxy based Zinc primer (40 microns).

Internal surface: To be coated with hot oil resistant non corrosive varnish or paint or epoxy.

Finishing coating shall be with Aliphatic polyurethane (min 50 microns).

4.9 Heat Dissipation (Radiators)

Heat dissipation by tank walls excluding top and bottom should be 500W/sq.m

Heat dissipation by fin type (pressed steel) radiator 1.25mm thick will be worked out on the basis of manufacturer's data sheet.

4 nos. of radiators shall be provided on LV/HV side respectively. They should be fixed at right angles to the side. The size of the radiator shall be such that it covers atleast 50% of the bottom yoke, full core and complete top yoke.

4.10 Conservator

The total volume of the conservator shall be such as to contain 10% of total quantity of oil in the tank. It should have the capacity between the highest and lowest visible levels to meet the requirement of expansion of the total cold oil volume in the transformer.

Oil level indicator should be provided on the side which will be with fully covered detachable flange with single gasket and tightened with GI nut-bolt.

The conservator shall be provided with the drain plug and filling hole (30 mm Dia) with cover.

Pressure release device: Explosion vent as pressure release device shall be mounted on top of the cover of the transformer. MS pipe of 80 mm dia. shall be used for the same. Suitable diaphragm shall be used for releasing of pressure.

4.11 Breather

Breather joints will be screwed type. It shall have die-cast aluminium body and inside container for silica gel shall be of tin sheet. Volume of the breathers shall be suitable for 500gm of silica gel.

4.12 Transformer terminals

HV: Cable end box for terminating of 3 x 150 sq.mm XLPE cable from bottom.

LV: Cable end box with terminals R, Y, B and N for terminating 4 runs of 3.5 x 240 sq.mm XLPE aluminium cable. One separate neutral shall be brought outside the transformer enclosure for earthing the neutral.

Brass terminal stud of suitable size to carry 250 Amps for HT and 1000 Amps for LT with necessary nuts, check-nuts and plain thick tinned washer to accommodate four nos. of cables in LT side to evacuate power.

4.13 Bushing and Connection

For 11 KV class 12 KV bushing shall be used and for 433 volts 1.1 KV bushing shall be used. HV bushing shall not be mounted on top of the transformer tank and LV bushing shall be mounted outside the transformer tank.

4.14 Gasket& Joints

All gasket used for making oil tight joints to be with neoprene bonded cork oil resistance synthetic material placed between tank and cover plate. Neoprene rubber shall be used for tight joints for HV and LV terminals.

4.15 Internal Connections

HV Winding

In case of HV winding all jumpers from winding to bushing shall have cross section larger than winding conductor.

Inter coil connection shall be by crimping and brazing.

Lead from delta joint shall be connected to bushing rod by brazing only.

The current density in delta lead shall be less than 1.5 Amp/sq.mm

LV Winding

LT star point shall be formed of copper plate of sufficient length and size. Lead from winding shall be connected to the flat by crimping and brazing.

Firm connections of LT winding to bushing shall be made of adequate size of "L" shaped flat. Connection of LT coil lead to "L" shaped flat shall be by crimping and brazing.

Alternatively “L” shaped lug of adequate capacity effectively crimped shall be acceptable.

Tank base channel

It should be of 2 nos. of 75 mm and 40 mm channel for transformer, unidirectional rollers shall be provided.

Terminal marking plate and Rating plate

The transformer shall be fitted with a diagram and rating plate engraved with the name of the company, serial no., connection diagrams, vector group, tap changing diagram, capacity, month and year of manufacturing which shall be firmly welded in main tank. The terminals shall be provided with separate terminal marking plates.

4.16 Fittings

1	Rating and Diagram plate	1 no.
2	Earthing terminals with lugs	2 nos.
3	Lifting lugs	4 nos. for main tank & 2 nos. for top cover
4	Oil filling hole with cap (on conservator)	1 no.
5	Drain valve 20mm	1 no.
6	Conservator with drain plug	1 no.
7	Thermometer pocket	1 no.
8	Explosion vent	1 no.
9	Silica gel breather	1 no.
10	Platform mounting channel	2 nos.
11	Oil level gauge indicating 3 positions of oil mark	1 no.
	a. Minimum -5° C	

- b. Normal 30° C
- c. Maximum 98° C

12	HT and LT bushing	3 nos. of HT bushing with bi-metallic connectors. Each bushing (HV&LV) should be provided with 2 plain brass washers. LV bushing should be provided with palm connector of suitable size of tinned brass for evacuation of power through 4 runs of cables
13	Radiators	As per specifications
14	Pulling lugs	4 nos.
15	Metallic cover spot welded to tank for drain valve shall be provided	1 no.
16	Winding temperature indicator	1 no.
17	Oil temperature indicator	1 no.
18	Gas and Oil actuated Buchholz relay	1 no.
19	Marshalling box with wiring	1 no.

4.17 Transformer Oil

Transformer oil to be used with requirements of latest IS 335/1993 amended up to date thereof. New oil-ageing characteristics after accelerated ageing test at 115° C (open beaker method with copper catalyst)

- i. Specific resistance
 - At 20° C : 2.5 x ohm/cm (min)
 - At 90° C : 0.2 x ohm/cm (min)
- ii. Dielectric dissipation factor: 0.20 at 90° C (Max tan delta)
- iii. Total acidity mg/KOH/gm: 0.05 (max)
- iv. Total sludge value (%) by weight : 0.05 (max)
- v. Electric strength (breakdown voltage) : 30 KV (min)
- vi. Flash point P.M (closed) : 140°C (min)
- vii. Water content (PPM) : 35 (max)

5. Test and Inspection

The tests are to be carried out in accordance with the details specified in IS 2026.

- i. Measurement of winding temperature.
- ii. Ratio, polarity and phase relationship.
- iii. Impedance Voltage
- iv. Load losses
- v. No load losses and No load current
- vi. Insulation resistance
- vii. Inducted over voltage withstand
- viii. Separate source voltage withstand
- ix. Air pressure test

All the routine test shall be conducted in the suppliers laboratory at their cost.

5.1 Type test

The supplier shall provide the following type test report carried out at laboratory.

- i. Temperature rise test
- ii. Short circuit test containing the measured No load loss and load loss.
- iii. Impulse test
- iv. Air pressure test as per class no. 22.5 of IS 1180 (part I) / 1989
- v. Unbalanced current test

The Inspection shall be carried out by the purchaser during any stage of manufacture.

Arrangements shall be made for inspection and testing of transformer in the presence of our engineers.

5.2 Rejection

The transformer shall be liable for rejection on any one of the following reasons.

- i. Losses exceeded the specified values mentioned in specification.
- ii. Impedance voltage value exceeds the guaranteed value plus tolerance as per specification.
- iii. Type test are not carried out as per the specification.
- iv. Drawing is not submitted as per the specification.
- v. Heat dissipation calculation sheet are not submitted as per the specification.

5.3 Drawings

A set of following drawings with all dimensions shall be submitted by the supplier along with the offer.
General dimension drawing

- i. General dimension drawing
- ii. Core assembly drawing
- iii. Internal construction drawing
- iv. Rating and diagram plate drawing
- v. HV/LV bushing indicating measurement of creep age distance.
- vi. Loss, flux density, heat dissipation calculation sheets.
- vii. G.A drawing of Off-Load tap changer

All the drawing shall be of A3 size only.

Guarantee for satisfactory operation for 24 months from the date of installation or 30 months from the date of supply whichever is earlier shall be given.

Test certificate for providing conformity with relevant IS standards shall be enclosed.

Place of Delivery : Indian Institute of Astrophysics, IInd Block, Koramangala., Bangalore-560034.

Make: Brands which are approved by BESCO, Bee, Star rated

Scope of the Supplier: The supplier shall be responsible for the delivery of the transformer and accessories to site at the main campus of IIA, Koramangala, Bangalore and shall include in his bid all the necessary arrangements for transport, loading and unloading. The supplier is required to extend the presence of required technical support person(s) during installation, energizing and testing of the transformer supervision and guidance. **Installation will be carried out by the IIA.**

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INDIAN INSTITUTE OF ASTROPHYSICS

IIND BLOCK, SARJAPUR ROAD, KORAMANGALA,
BANGALORE-560 034

No.PR/PT/SR/TRANSFORMER/CAP/281

Dated: 16th August 2013

M/s.

Dear Sirs,

The Director, Indian Institute of Astrophysics, Bangalore invites Sealed Tenders for the supply of Stores detailed in the Tender Form hereto annexed. The Tender Terms and conditions enclosed are also may be noted carefully. If you are in a position to quote for the supply in accordance with the requirement, please submit your quotation in the attached Tender Form also.

Your Tender must reach this office on or before the date and time indicated in the Tender Schedule.

Thanking you,

Yours faithfully,

Encl: as above.

Y K Raja Iyengar
Purchase Officer

INDIAN INSTITUTE OF ASTROPHYSICS

BANGALORE-560 034

PUBLIC TENDER NOTICE NO:PR/PT/SR/TRANSFORMER/CAP/281
DATED 16TH AUGUST 2013.

TENDER FORM

No.PR/PT/SR/TRANSFORMER/CAP/281

Dated: 16th August 2013

FROM:

TO

THE DIRECTOR,
Indian Institute of Astrophysics.,
Bangalore-560 034.

Sir,

I/We hereby offer to supply the stores indicated below at the price hereunder quoted and agree to hold this offer open till_____. I/We shall be bound to supply the store hereby offered upon the issue of the Purchase Order communicating to the acceptance thereof on or before the expiry of the last mentioned date. You are at liberty to accept any one or more of the items of such stores. I/We not withstanding that the offer in this tender has not been accepted in whole, shall be bound to supply such items and such portion or portions of one or more of the items as may be specified in the said Purchase Order communicating the acceptance.

Sl.No.	Description of the item(s)	Quantity	Unit	Rate	Dely.
	Supply of Copper wound 500 KVA 11KV/433V Delta/Star Connected outdoor, ONAN cooling type, transformer with off-load tap changer ranging +5% to -10% with 2.5% per step, with all necessary parts as per the specification in the ANNEXURE - I. The item should be Bee approved,	01	No.		

Star rated eco friendly & BESCO approved.

Place at which the Delivery is required : IIA, 2nd Block, Koramangala, Bangalore-34

Date by which the supplies are required : Within 30 days from the date of receipt of Purchase order. The Supplier shall be responsible for the delivery of the transformer and accessories to site at the main campus of IIA, Koramangala, Bangalore including loading and unloading. The supplier is required to extend the presence of required technical support person(s) during the installation, energizing and testing of the transformer for supervision and guidance. Installation will be carried out by IIA.

2. I/We have understood the items of the tender annexed to the invitation to this Public Tender and have thoroughly examined the specifications/drawing and /or pattern quoted or referred to herein and/are fully aware of the nature of the stores required and my/our offer is to supply the stores strictly in accordance with the requirements subject to the terms and conditions contained in the Purchase Order, if communicated on the acceptance of this tender either in whole or in part.

Date:

Signature and seal of Tenderer

TERMS AND CONDITIONS OF CONTRACT

1. DEFINITIONS :

a.) The terms 'Purchaser' shall mean the Director, Indian Institute of Astrophysics, Bangalore -560 034.

b.) The term 'Contractor' shall mean, the person, firm or company with whom or with which the order of stores is placed and shall be deemed to include the Contractor's successors, representative, heirs, executors and administrators unless excluded by the contract.

c.) The 'Stores' shall mean that contractor agrees to supply under the contract as specified in the Purchase Order including erection Plants and machinery and subsequent testing, should such as condition be included in the Purchase Order.

d.) The terms 'Purchase Order' shall mean the communication signed on behalf of the Purchaser by an Officer duly authorized intimating the acceptance on behalf the Purchaser on the terms and conditions mentioned or referred to in the said communications accepting the tender or offer of the contractor for supply of stores or plant, machinery or equipment or part thereof.

2. PRICES :

Tenders, offering firm prices will be preferred, where a price variation clause is insisted upon by a tenderer, quotations with a reasonable ceiling should be submitted. Such offers should variably be supported by the base price taken into account at the time of tendering and also the formula for any such variations.

3. DUTY EXEMPTION :

(a.) Excise duty exemption certificate will be provided if considered against the categories of items tendered, under the Govt. of India Notification No. 10/97 valid till 2011.

4. SECURITY DEPOSIT:

On acceptance of Tender, the Contractor shall, at the option of the Purchaser and within the period specified by him deposit with him in cash or any other form as the Purchaser may determine, Security deposit not exceeding ten percent of the value of the contract as the Purchaser shall specify. If the contractor is called upon by the purchaser to deposit 'Security' and the contractor fails to provide the security within the period specified, such failure shall constitute a breach of the contract and purchase shall be entitled to make other arrangements for the re-purchase of the stored

contracted for at the risk of contractor in terms of sub-clause (ii) and (iii) of clause 10 (b) hereof and/or to recover from the contractor damages arising from such cancellation.

5. GUARANTEE AND REPLACEMENT :

a.) The contractor shall guarantee that the stores supplied shall comply fully with the specifications laid down, for material workmanship and performance.

b.) For a period of (12) twelve months after the acceptance of the stores, if any defects are discovered therein or any defects therein found to have developed under proper use arising from faulty stores, design or workmanship, contractor shall remedy such defects at his own cost provided he is called upon to do so within a period of 14 months from the date of acceptance thereof by the purchaser who shall state in writing in what respect the store or any part thereof are faulty.

c.) If in the opinion of the purchaser, it becomes necessary to replace or renew any defective stores such replacement or renewal shall be made by the Contractor free of all costs to the purchaser provided the notice informing the contractor of the defect is given by the purchaser in this regard within the said 14 months from the date of acceptance thereof.

d.) Should the contractor fail to rectify the defects, the purchaser shall have the right to reject or repair or replace at the cost of the contractor the whole or any portion of the defective stores.

e.) The decision of the purchaser, notwithstanding any prior approval of acceptance or inspection thereof on behalf of the purchaser, as to whether or not the stores supplied by the contractor are defective or any defects has developed within the said period of 12 months or as to whether the nature of the defectives required renewal or replacement shall be final, conclusive and binding on the contractor.

f.) To fulfill guarantee conditions outlined in Clause 5(a) to (d) above, the contractor shall, at the option of the purchaser, furnish a Bank Guarantee (as prescribed by the purchaser) from a Bank approved by the purchaser for an amount equivalent to 10% of the value of the contract along with first shipment documents. On the performance and completion of the contract in all respects, the Bank Guarantee will be returned to the contractor without any interest.

g.) All the replacement stores shall also be guaranteed for a period of 12 months from the date of arrival of stores at Purchaser's site.

h.) Even while the 12 months guarantee applied to all stores in case where a greater period is called forth by our specifications then such a specification shall apply; in such cases the period of 14 months referred to in Para 5(b) and (c) shall be 'asked for' guarantee period plus two months.

6. PACKAGING, FORWARDING AND INSURANCE :

The Contractor will be held responsible for the stores being sufficiently and properly packed for transport by rail, road, sea or air, to withstand transit hazards and ensure safe arrival at the destination. The packing and marking of packing shall be done by and at the expenses of the contractor. The Purchaser will not pay separately for transit insurance, all risks in transit being

exclusively of the contractor and the Purchaser shall pay only for such stores as are actually received in good condition, in accordance with contract.

7. TEST CERTIFICATE :

Wherever required Test Certificate should be sent along with the relevant dispatch documents.

8. ACCEPTANCE OF STORES :

a) The Stores shall be tendered by the contractor for inspection at such places as may be specified by the purchaser at the Contractor's own risk, expenses and cost.

b) It is expressly agreed that the acceptance of stores, contracted for is subject to final approval by the Purchaser, whose decision shall be final.

c) If, in the opinion of the Purchaser all or any of the stores that do not meet the performance or quality requirements specified in the Purchase Order, they may be either rejected or accepted at the price to be fixed by the purchaser and his decision as to rejection and the prices to be fixed shall be final and binding on the contractor.

d) If the whole or any part of the store supplied are rejected in accordance with Clause No.8(c) above, the Purchaser shall be at the liberty, with or without notice to the Contractor, to purchase in the open market at the expenses of the Contractor, stores meeting the necessary performance and quality contracted for in place of these rejected, provided that either the purchase, or the agreement to purchase, from another supplier is made within six months from the date of rejection of the stores as aforesaid.

9. REJECTION OF STORES :

Rejected stores will remain at the destination at the Contractor's risk and responsibility, if instructions for their disposal are not received from the Contractor within a period of 14 days from the date of receipt of the advice or rejection, the Purchaser or his representative has, at his discretion the right to scrap or seal or consign the rejected stores to the Contractor's address at the Contractor's entire risk and expense, freight being payable by the Contractor at actuals.

10. DELIVERY PERIOD :

a.) The delivery period of the stores stipulated in the purchase order shall be deemed to be the essence of the Contract, and delivery must be completed on or before the specified dates/period.

b.) Should the Contractor fails to deliver the stores or any consignment thereof within the period prescribed for such delivery, the Purchaser shall be entitled at his option either.

i) to recover from the Contractor as agreed liquidated damages and not by way of penalty, a sum of 2% of the price of any stores which the contractor has failed to deliver as aforesaid for each month or part of a month, during which the delivery of such stores may in arrears, or

ii) to purchase elsewhere, without notice to the Contractor on the account and at the risk of the contractor, the stores not delivered or others of similar description (where other exactly complying with the particulars are not, in the opinion of the purchaser readily procurable, such opinion being final) without canceling the Contract in respect of the consignment(s) not yet due for delivery or,

iii) to cancel the contract or a portion thereof, and, if so desired to purchase or authorize the purchase of stores not so delivered or others of similar description (where other exactly complying with the particulars are not, in the opinion of the purchaser readily procurable, such opinion final) at the risk and cost of the Contractor.

In the event of action being taken under sub-clause (ii) and (iii) of clause 10 above, the Contractor shall be liable for any loss which the Purchaser may sustain on that account, provided that the re-purchase, or if there is an agreement to re-provide shall made within (6) six months from the date of such failure. But the Contractor shall not be entitled to any gain on such re-purchase made against default. It shall not be necessary for the purchaser to serve a notice of such re-purchase on the defaulting Contractor. This right shall without prejudice to the right of the purchase to recover damages for breach of contract by the Contractor.

11. EXTENSION OF DELIVERY TIME :

As soon as it is apparent that Contractor delivery period/dates cannot be adhered to, an application shall be sent by the Contractor to the Purchaser. If failure, on the part of the Contractor to deliver the stores in proper time shall have arisen from any cause which the Purchaser may admit as reasonable ground for an extension of the time (and his decision shall be final he may allow such additional time as he considers it to be justified by the circumstances of the case without prejudice to the Purchaser's rights to recover liquidated damages under clause 10(i)(ii) and (iii).

12. PAYMENT :

Contractor's bill will be passed only after the stores have been received, inspected and accepted by the Purchaser for payment.

13. RECOVERY OF SUMS DUE :

Whenever there is breach of contract whether liquidated or not, money arising out of or under this contract against the contract, the Purchaser shall be entitled to recover such sum by appropriating, in part or whole, the security deposited by the Contractor, if a Security is taken against the contract. In the event of the Security being insufficient or if no security has been taken from the Contractor, then the balance or the total sum recoverable as the case may be shall be deducted from any sum then due or which at any time thereafter may become due to the contractor under this or any other contract with the Purchaser. Should this sum be not sufficient to cover the full amount recoverable, the Contractor shall pay to the Purchaser on demand the remaining balance due. Similarly, if the purchaser has or makes any claims, whether liquidated or not, against the Contractor under any other contract with the purchaser, the payment of all moneys payable under the contract to the Contractor including the Security Deposit shall be withheld till such claims of the Purchaser are finally adjudicated upon and paid by the Contractor.

14. INDEMNITY :

The Contractor shall warrant and be deemed to have warranted that all stores supplied against this contract are free and clean of infringement of any patent, copy right or trade mark, and shall at all time indemnify the purchaser against all claims which may be made in respect of the stores for infringement of any right protected by patent, registration of design or trade mark and shall take all risk of accidents of damage which may cause a failure of the supply from whatever cause arising and the entire responsibility for sufficiency of all the means used by him for the fulfillment of contract.

15. ARBITRATION:

In the event of any question, dispute or difference arising under these conditions contained in the purchase order in connection with this contract, (except as to any matters the decision of which is specially provided for by these conditions), the same shall be referred to the sole arbitration of the Head of the Institution or of some other person appointed by him. It will be no objection that the arbitrator is a Government Servant, that he has to deal with matter to which the Contract relates or that in the course of his duties as Government Servant he has expressed views on all or any of the matters in dispute binding on the parties of this Contract.

(a) IT IS TERMS OF THIS CONTRACT:

If the Arbitrator be the Head of the Institution.,

i) in the event of his being transferred or vacating his office by resignation or otherwise, it shall be lawful for his successor-in-office either to proceed with the reference himself, or to appoint another person as arbitrator, or,

ii) in the event of his being unwilling or unable to act for any reason, it shall be lawful for the Head of the Institution, to appoint another person as arbitrator or,

(b) If the Arbitrator be a Person appointed by the Head of the Institution:-

In the event of his death, neglecting or refusing to act, or resigning or being unable to act for any reason, it shall be lawful for the Institution either to proceed with reference himself or to appoint another person as arbitrator in place of the outgoing arbitrator. Subject as aforesaid the Arbitration Act, 1940 and the rules there under and any statutory modifications thereof for the time being in force shall be deemed to apply to the arbitration proceedings under this clause. The Arbitrator shall have the power to extend with the consent of the Purchaser and the Contractor the time for making a publishing the award. The venue of Arbitration shall be the place as the Purchaser. In his absolute discretion may determine. Work under the contract shall if reasonably possible, continue during Arbitration proceedings.

16. COUNTER TERMS AND CONDITIONS OF SUPPLIERS :

Where Counter Terms and Conditions/printed or cyclostyled conditions have been offered by the Supplier, the same shall not be deemed to have been accepted by the Purchaser, unless specific written acceptance thereof is obtained.

17. SECURITY FOR PURCHASER'S MATERIAL(S) :

Successful Tenderer will have to furnish in the form of a Bank Guarantee or any other form as called for by the Purchaser towards adequate security for the materials/property by the Purchaser for the due execution of the Contract.