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**GOVERNMENT OF PUDUCHERRY
ELECTRICITY DEPARTMENT
ENQUIRY FORM**

Enquiry No. ³⁴⁰/ED/EE/EHV/PLCC & Lines/F.H/W/Sed - Kpt/16-17

Dated: 11/07/2016

To:

As per the list enclosed

Sir,

Sub: Electricity Department, Puducherry - Division - VI - Enquiry for the supply
of Hardwares for works - requested - Regarding. ***

Please send your lowest quotation for supply of the following materials in a sealed cover superscribed with "Enquiry number and due date" so as to reach this office on or before 18/8/16 at 11.00 A.M and intimate your acceptance of the following conditions in case an order is placed with you. The tenders received will be opened on the next working day at 3.30 P.M. If the opening date happens to be a holiday, the tenders will be opened on the next working day.

Sl No.	Description of Materials	Approximate Quantity	Delivery Period
01.	Compression type Single tension dead end fitting complete with jumper terminal made of extruded aluminium and forged steel dead ends suitable for Panther ACSR Conductor and also suitable for 120 KN insulator conforming to IS 2486 complete set including anchor shackle, Ball link, tower side arcing horn, line side arcing horn, socket clevis and jumper terminal. (Refer Page No.9)	50 sets	With in 45 days from the date of receipt of supply order.
02.	Single pilot suspension string suitable for "Panther" ACSR conductor to accommodate the Jumper conductor The pilot suspension fitting comprises of Ball hook, tower side arcing horn, line side arcing horn, H.H. socket eye, anchor shackle, and suspension clamp. (Refer Page No.15)	15 sets	
03.	Vibration damper suitable for "Panther" ACSR conductor for efficient damping of conductor vibration. The clamp shall be of aluminum alloy with perfect single crip on conductor. Damping weights shall be galvanized iron and messenger cable of high tensile galvanized standard steel wire with protective flexible armoring conforming to IS 9708. (Refer Page No.21) Type Test certificate should be furnished along with the Offer and routine test certificate should be furnished along with the supply. Quotation should be furnished, as per the prescribed form enclosed, other wise your offer will be rejected.	90 nos.	

TERMS AND CONDITIONS FOR SUPPLY

- 1.2** Tender should be addressed to the Executive Engineer – EHV, Electricity Department, Puducherry – 605 001 and should be sent in sealed covers with the following Superscriptions.

The envelope should be addressed only to the Executive Engineer – EHV Electricity Department, Puducherry – 605 001. The envelope should also bear the name and address of the firm and seal, if any.

- 1.3** The tender should be as per the enclosed prescribed tender form. Otherwise the tender will be rejected.

- 1.4** (a) If the tender is made by an individual, it shall be signed with his full name his postal address shall be given.

(b) If it is made by a firm, it shall be signed with the co-partnership name, by a member of the firm, who shall sign his own name and the name with the address of each member of the firm.

(c) If the tender is made by a Corporation, it should be signed by a duly Authorized Officer who shall produce with his tender satisfactory evidence of his Authorization. Such tendering Corporation may be required before the contract is executed to furnish evidence of its corporate existence.

1.5 Earnest Money Deposit:

The Tender must pay as Earnest Money Deposit, a sum of Rs.6,000/- by a Demand Draft on any Scheduled Bank or State Bank of India, drawn in favour of the Drawing and Disbursing Officer/EHV, Electricity Department – 605 001 payable at the State Bank of India, Puducherry. The cash receipt of the deposit thus made and issued by the Office The Superintending Engineer – I, Electricity Department, Puducherry or the demand draft should be attached to the tender. Cash, Cheque of Bank Guarantee should not be sent and deposit made by Cheque will on no account be accepted. Firms registered permanently with NSIC or DGS&D or as permanent SSI Unit of the Government of the Puducherry for the manufacture / Supply of the items quoted are exempted from payment of earnest money deposit. Tenders without Earnest Money Deposit or proof for claiming exemption from payment of Earnest Money Deposit will be rejected in the first instance.

The Earnest Money Deposit will be refunded to the unsuccessful tenders immediately after the tender has been finalized and on receipt of application from them along with advance stamped receipt for the amount.

1.6 Validity of the tender:

Tenders should be validated for acceptance for a period of at least 120 (One Hundred and Twenty) days from the date of opening from the date of receipt of acceptance of sample, whichever is latest.

1.7 **Guarantee:**

The materials shall be guaranteed for satisfactory performance working for a Period of twelve months from the date of commissioning or eighteen month from the Date of receipt of materials at stores. Any defects notified during this period shall be rectified free of charge to the satisfaction of the Department.

1.8 **Sample:**

Samples should be submitted along with tender / positively within 10 days after Opening the tender at tenders cost and freight prepaid. Otherwise the tender is likely to be rejected. Unapproved samples will be returned to the Tender, if so required by the Tender, at his cost.

All samples shall bear suitable identification with the following information:

- (a) Specification No. _____ date _____
- (b) Name of the Tender with full address _____
- (c) Name of the manufacturer with full address _____
- (d) Brief and complete description of the samples _____

1.9 **Leaflets and Description Literature:**

Full descriptive particulars and drawings of the equipments offered should accompany the tender.

Information regarding the country of manufacture or origin of materials used in the Manufacturing of the articles should be furnished.

1.10 **Deviations:**

Deviations from any standard specification or clauses of specification should be clearly pointed out. Clauses not so commented upon shall be taken as having met with the approval of the tender and will be binding on him.

1.11 **Tender Opening:**

Tenders will be opened at 3.30 P.M on the next working day of the due date.

The Tenderers or their authorized agents may choose to be present at the time of opening of tender. The tender receiving officer will on opening of tenders prepare a statement of attested and unattested corrections therein and hand it over to the tenderers and initial all such correction therein in the presence of the Tenderers. If any of the Tenderer or their agents find it inconvenient to be present at the time, then in such a case the tender receiving officer, will on opening attest the tender of the absentee Tender and make out a statement of the attested and unattested

corrections. The absentee Tender shall then accept the statement of correction, without any question whatsoever.

1.12. The Superintending Engineer-I, Electricity Department, Puducherry reserves the right to reject any or all tenders, award any portion of the order to any one Tender or more tenders irrespective of the rate being equal or not, and at his discretion increase or decrease the quantities while ordering and during the period of contract after ordering on any of the orders or all orders.

1.13. Security Deposit

(a) When a tender is to be accepted the Tenderer whose tender is under consideration, on being issued provisional order to him by the Executive Engineer-VI, Electricity Department, Puducherry of acceptance of that tender shall make security in cash at this office or by Demand Draft drawn in favour of "The Drawing and Disbursing Officer/EHV, Electricity Department, Puducherry and Payable at Puducherry obtained from Nationalized Banks for the periods decided by the department to makeup the Security Deposit which along with EMD 7.5% of the cost of the order within a week from the date of intimation under consideration of order. Failure to make up the Security Deposit as defined above may entail forfeiture of the Earnest Money Deposit. "Any case of the default against contracts by the firms exempted from payment of Earnest Money Deposit / Security Deposit will be reported to NSIC / Industries Department, Puducherry for taking suitable action against such firms and if necessary to remove from the list and this will be without prejudice to department action as deemed fit."

(b) The security deposit with the Earnest Money shall be retained as Security Deposit for the due fulfillment of the contract. The Security Deposit and Earnest Money Deposit made by the contractor will not bear any interest. After the deposit of Security deposit, a supply order will be placed on the contractor which should be duly acknowledged. Failure to acknowledge the receipt of order / non effecting of supply as per order may entail forfeiture of the total Security Deposit and cancellation of the purchase order without prejudice to the right of the department to recover the losses incurred in this regard.

(c) If the department issued Provisional Order to the successful Tenderer within the validity period is deemed to be placed order with the firm. The firm should

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furnish Security Deposit amount within the date specified in the provisional order failing which the provisional order shall be liable for cancellation at the risk and expenses of the firm.

(d) On complete fulfillment of the contract by the Contractor to the satisfaction of the Department, the Security Deposit and Earnest Money paid by the Tenderer shall be returned to him after the guarantee period within a reasonable time after deducting the amount, if any, due to the department on receipt of request from the contractor with advance stamped receipt as applicable

2. RATE AND CONDITIONS

2.1. Rates:

The lowest rates quoted by the Tender should be firm, in rupees for free delivery at the destination and should include VAT, Customs, Import, Excise Duties, Insurance and freight charges. The Purchaser will not pay separately for transit insurance. The sales tax where legally leviable and intended to be claimed from the purchaser should be distinctly shown along with price quoted. If this is not done, no claims of sales tax will be admitted at any later stages and on any ground whatsoever.

Appropriate sales tax if any found admissible will be paid over and above purchase Price in accordance with the provision of the relevant sales tax act in force. Provided always it is hereby agreed and declared that in case where has Department has doubt whether the sales tax is at all payable on the transaction in question, The department if hereby authorized to withhold the amount of tax unit the party produces an order of court competent jurisdiction, declaring liability of the transaction to sales tax.

2.2. Delivery:

The period of delivery should be specified. Ex-stock, quick and short delivery will be normally given preference. Delivery for the part supply / suppliers and the period required to complete the order in full should also be specified. The delivery period should be kept up and no excuse such as Lack of booking facilities etc., will be accepted. In case goods booking cannot ensure delivery within the scheduled period, booking should be done by lorry or other mode of road transport without extra cost to the Department and it is always the Supplier's responsibility to arrange for the transport. Any delay will be viewed seriously and suitable penalty imposed if necessary. The Tenders should take this into consideration when quoting. The Tender should

clearly state when the supply would commence. The delivery period specified in the tender is clear and the Tender under our penalty clause given as follows should guarantee specific terms:-

Should delivery be delayed by strike lockouts, fire accident or any clauses whatsoever beyond the reasonable control to the contractor and whether such delay or impediment occur before or after the time or extended time for despatch or completion, a reasonable extension time shall be granted.

If supplies to be tender against this correct or made by the contractor beyond the delivery period in the Department accepts the contract and them. Such acceptances or without prejudice to department's right to claim penalty for the delay in supply governed by penalty clauses.

2.3 Extension of delivery period:

No extension of time beyond that delivery period quoted will normally be granted.

2.4 Loss or damage:

Ownership of the materials will rest with the contractor until delivery in good condition to the consignee at the destination External damages or shortages that are prima face, the results of rough handling during transit to site or due defective packages will be intimated within 15 Days of the arrival of the materials at site. Internal defects, Damages etc. which cannot ordinarily be detected on superficial visual examination through due to bad handling in transit or defective packing could be intimated within two months from the date of receipt of these articles at site. In either case the damaged or defective materials should be replaced by the contractor by free of cost.

2.5 Penalty:

If the contractor fails in the due performance of his contract within the time fixed by the contract and the purchaser has suffered any loss from this delay occasioned by such failure, the contractor is liable at the discretion of the purchaser to a penalty up to 0.5% of the contract value of such portion of the material only that have not been delivered on the specified date for each week of delay between the appointed or extended time as the case may be and the actual time of acceptance of supply, and such penalty shall be in full satisfaction of the contractor liability for the delay but shall not in any case exceed 10% of the contract value of such portion of the materials.

2.6. Payment:

100% will be made within 30 days after receipt of materials in good condition at destination and receipt of bills in triplicate along with advance stamped receipt for the amount. All payments will be made only after the approval of the Test Certificate. No other terms of payment will be accepted. Tenders with mode of payment other than the above will be summarily rejected.

Payment for the supplies will be made by Demand Draft in rupees on the State Bank of India, Puducherry or any other branches of the state Bank of India.

2.7. Tests:

Manufacturer's certificate for the Routine test specified in the ISS of latest issues should be forwarded. The materials may be rejected if the test results are not satisfactory.

2.8. Guarantee:

Where test certificate is not called for in the order, written guarantee should be furnished wherever necessary guaranteeing the Department against defects in the goods supplied either in materials or workmanship and this being operative for a period of 18 (eighteen) months from the date of receipt of materials at site in good condition. Any of the goods found defective within guarantee period shall be replaced free of cost.

2.9. Income Tax clearance Certificate:

Each Tender shall append to his tender a clearance certificate of income-tax (latest) from the appropriate Income-Tax Authorities in the form prescribed therefore. In the case proprietary ground or Partnership firm, it will be necessary to produce the certificate before mentioned for proprietary or proprietors and for each of the partners as the case may be. If a certificate has already been produced by the Tender during the calendar year in which the tender is made in respect of previous tender to this office it will be sufficient if particulars regarding the previous occasion on which the certificate was produced are given. All tenders received without a certificate as above mentioned will be rejected.

2.10. General Conditions:

- (a) The contractor is responsible for all acts done either by him or by his servants or representative.
- (b) In case of all disputes it should clearly be understood that the decision of the Executive Engineer-VI, Electricity Department, Puducherry would be final.
- (c) Any notice to the contractor shall be deemed to be efficiently served if it is given in writing by post to his usual address or latest known place of business.
- (d) The contract once awarded is not transferable.



**EXECUTIVE ENGINEER -VI
ELECTRICITY DEPARTMENT
PUDUCHERRY**

Cops to:

PA/ETW

PE/Comptroller

TENDER FORM

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From

To

The Executive Engineer – VI,
Electricity Department,
Puducherry- 605 001.

Sir,

Sub: Tender specification No.
for the supply of 50 sets of compression type single tension dead
end fitting suitable for "Panther" ACSR conductor and also for 120
KN insulator

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Referring to the above tender specification, I am submitting herewith my tender as
detailed below:-

1. Tender for the supply of compression type single tension dead
end fitting suitable for "Panther" ACSR
conductor and also for 120 KN insulator
2. Quantity : 50 sets
3. Basic price / Unit :
4. Rate and amount of excise duty :
5. Rate and amount of education Cess :
6. Rate and amount of sales tax :
7. Freight, insurance and other charges :
8. Discount, if any :
9. Net price / Unit :
10. Total net price :
11. Terms of delivery : Free delivery at Central Stores;
Electricity Department, Puducherry
F.O.R., Puducherry by road
12. Period of delivery (to be reckoned from
the date of regular supply order) :
13. Terms of payment (See para 2.6 of
Tender document : 100% within 30 days on receipt of the
materials in good condition.
14. Validity of the offer (See para 1.6 of
Tender Condition) : 120 days from the date of opening

15. Guarantee period (See para 2.8 of Tender Condition)

16. Whether permanently registered with NSIC / DGS & D /SSI of Pondicherry for the items quoted. (Photostat copies of the certificate to be enclosed)

17. Whether agreed to pay security deposit as per condition 1.13

18. Details of Earnest Money Deposit furnished: Cash Receipt No. :

Dated :

Amount :

Demand Draft No. :

Dated :

Amount :

Bank :

19. Whether type test certificate obtained from Govt. approved laboratory is enclosed.

20. Whether the item quoted bears ISI mark / Conforms to IS specification.
(Photostat copies of the certificate to be enclosed)

21. Whether sample enclosed/will be furnished within 10 days

22. Whether income-tax certificate enclosed

I agree to supply the materials at the above rates and agree to all the conditions set forth in the Tender Specification.

Yours faithfully,

Enclosure:

1. Cash Receipt/Demand Draft.
2. Sample.

Specification for compression type single dead end fittings suitable for Panther ACSR Conductor and for 120 KN antifog disc insulator

The dead end assembly shall be suitable for ACSR 'PANTHER' conductor.

The dead end assembly shall be compression type with provision for comprising jumper terminal at one end. The angle of jumper terminal to be mounted should be 30° with respect to the vertical line. The area of bearing surface on all the connections shall be sufficient to ensure positive electrical and mechanical contact and avoid local heating due to FR losses. The resistance of the clamp when compressed on Conductor shall not be more than 75% of the resistance of equivalent length of Conductor.

The compression areas shall be clearly marked on each dead end assembly designed for continuous die compression and shall bear the words 'COMPRESS FIRST' suitably inscribed near the point on each assembly where the compression begins. If the dead end assembly is designed for intermittent die compressions it shall bear identification marks 'COMPRESSION ZONE' AND 'NON-COMPRESSION ZONE' distinctly with arrow marks showing the directions of compressions and knurling marks showing the end of the zones. Tapered aluminium filler plugs shall also be provided at the line of demarcation between compression and non-compression zone. The letter, number and other markings on the finished clamp shall be distinct and legible. The dimensional tolerances of the cross section of aluminium and steel dead end, allow for dead end assembly for ACSR 'PANTHER' shall be as per the table given below:

Sl. No.	Item	Dimensions before compression		Dimensions after compression	
		Inner dia (mm)	Outer dia (mm)	Corner to corner (mm)	Face to face width (mm)
1.	Aluminium Sleeve	23 ± 0.5	38 ± 1	37 ± 0.5	32 ± 0.5
2.	Steel Sleeve	9.5 ± 0.2	18 ± 0.5	15.1 ± 0.5	17.4 ± 0.5

The assembly shall not permit slipping of, damage to, or failure of the complete conductor or any part there of at a load less than 95% of the ultimate tensile strength of the conductor.

Interchangeability: The hardware for insulator strings with disc insulators or porcelain long rod insulator together with ball and socket fittings shall be of standard design, so that these hardware are interchangeable with each other and suitable for use with disc insulators or porcelain long rod insulators of any make conforming to relevant Indian/International Standard.

Corona and RI Performance: Sharp edges and scratches on all the hardware fittings shall be avoided. All surfaces must be clean, smooth, without cuts and abrasions or projections. The contractor must give suitable assurance about the satisfactory corona and radio interference performance of the materials offered by him.

Designation:

Ball and Socket Designation: The dimensions of the ball and socket shall be 20mm for 120 kN insulators are used. The designation should be in accordance with the standard dimensions stated in IS:2486 (Part-II)/IEC:120. The dimensions shall be checked by the appropriate gauge after galvanizing only.

Security Clip and Split Pins: Security clips for use with ball and socket coupling shall be R-shaped, hump type which provides positive locking of the coupling as per IS:2486 (Part-III)/IEC:372. The legs of the security clips shall be spread after assembly in the works to prevent complete withdrawal from the socket. The locking device should be resilient, corrosion resistant and of suitable mechanical strength. There shall be no risk of the locking device being displaced accidentally or being rotated when in position. Under no circumstances shall the locking devices allow separation of fittings.

The hold for the security clip shall be countersunk and the clip should be of such design that the eye of clip may be engaged by a hot line clip puller to provide for disengagement under energized conditions. The force required to pull the security clip into its unlocked position shall not be less than 50 N (5 Kg) or more than 500 N (50 Kg).

Split pins shall be used with bolts & nuts.

1 Arcing Horn/Intermediate Arcing Horn: The arcing Horn/intermediate arcing horn shall be either ball ended rod type or tubular type.

For insulator strings with disc insulators or long rod the arcing horn shall be provided as shown on the drawing of the hardware fittings, in this specification.

The air gap shall be so adjusted to ensure effective operation under actual field conditions.

Test Certificates: Test certificates of tests carried out during manufacturing shall be forwarded along with the material.

Packing and Marking: All material shall be packed in strong and weather resistant wooden cases/crates. The gross weight of the packing shall not normally exceed 200 Kg to avoid handling problems.

The packing shall be of sufficient strength to withstand rough handling during transit, storage at site and subsequent handling in the field.

Suitable cushioning, protective padding, dunnage or spacers shall be provided to prevent damage or deformation during transit and handling.

Bolts, nuts, washers, cotter pins, security clip and split pins etc. shall be packed duly installed and assembled with the respective parts and suitable measures shall be used to prevent their loss.

Each component part shall be legibly and indelibly marked with trade mark of the manufacturer and year of manufacture.

All the packing cases shall be marked legibly and correctly so as to ensure safe arrival at their destination and to avoid the possibility of goods being lost or wrongly dispatched on account of faulty packing and faulty or illegible markings. Each wooden case/crate shall have all the markings stenciled on it in indelible ink.

Standards: *The Hardware fittings shall conform to the following Indian/International Standards which mean latest revisions, with amendments/changes adopted and published, unless specifically stated otherwise in the Specification.*

In the event of the supply of hardware fittings conforming to standards other than specified, the Bidder shall confirm in his bid that these standards are equivalent to those specified. In case of award, salient features of comparisons between the Standards proposed by the Contractor and those specified in this document will be provided by the Contractor to establish their equivalence.

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TENDER FORM

From

To

The Executive Engineer – VI,
Electricity Department,
Puducherry- 605 001.

Sir,

Sub: Tender specification No.
for the supply of 15 sets of single suspension pilot fitting suitable for
"Panther" ACSR conductor and also for 90 KN insulator

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Referring to the above tender specification, I am submitting herewith my tender as detailed below:-

- | | |
|--|--|
| 1. Tender for the supply of | single suspension pilot fitting suitable for
"Panther" ACSR conductor and also for 90
KN insulator |
| 2. Quantity | : 15 sets |
| 3. Basic price / Unit | |
| 4. Rate and amount of excise duty | |
| 5. Rate and amount of education Cess | |
| 6. Rate and amount of sales tax | |
| 7. Freight, insurance and other charges | |
| 8. Discount, if any | |
| 9. Net price / Unit | |
| 10. Total net price | |
| 11. Terms of delivery | : Free delivery at Central Stores,
Electricity Department, Puducherry
F.O.R., Puducherry by road |
| 12. Period of delivery (to be reckoned from
the date of regular supply order) | |
| 13. Terms of payment (See para 2.6 of
Tender document | : 100% within 30 days on receipt of the
materials in good condition. |
| 14. Validity of the offer (See para 1.6 of
i. Tender Condition) | : 120 days from the date of opening |

15. Guarantee period (See para 2.8 of Tender Condition)

16. Whether permanently registered with NSIC / DGS & D /SSI of Pondicherry for the items quoted. (Photostat copies of the certificate to be enclosed)

17. Whether agreed to pay security deposit as per condition 1.13

18. Details of Earnest Money Deposit furnished: Cash Receipt No. :
Dated :
Amount :
Demand Draft No. :
Dated :
Amount :
Bank :

19. Whether type test certificate obtained from Govt. approved laboratory is enclosed. :

20. Whether the item quoted bears ISI mark / Conforms to IS specification. :
(Photostat copies of the certificate to be enclosed)

21. Whether sample enclosed/will be furnished within 10 days :

22 Whether income-tax certificate enclosed :

I agree to supply the materials at the above rates and agree to all the conditions set forth in the Tender Specification.

Yours faithfully,

Enclosure:

1. Cash Receipt/Demand Draft.
2. Sample.

(1)

**SPECIFICATION FOR SINGLE SUSPENSION PILOT FITTINGS SUITABLE FOR PANTHER
ACSR CONDUCTOR AND SUITABLE FOR 90 KN ANTIFOG DISC INSULATOR**

The suspension assembly shall be suitable for ACSR Panther Conductor for holding the jumper conductor.

The suspension clamp shall be designed to have maximum mobility in any direction and minimum moment of inertia so as to have minimum stress on the conductor in the case of oscillation of the same.

The suspension clamp shall have slip strength between 11 to 16 KN at clamping torque of 5 kg.m

The suspension assembly shall be designed, manufactured and finished to give it a suitable shape, so as to avoid any possibility of hammering between suspension assembly and conductor due to vibration. The suspension assembly shall be smooth without any cuts, grooves, abrasions, projections, ridges or excrescence, which might damage the conductor. Minimum breaking strength of string 70 KN.

The suspension assembly/clamp shall be designed so that it shall minimize the static & dynamic stress developed in the conductor under various loading conditions as well as during wind induced conductor vibrations. Power loss of suspension assembly should be less than 4W at conductor current of 350 Amps

Free Centre Type Suspension Clamp: For the Free Center Suspension Clamp seat shall be smoothly rounded and curved into a bell mouth at the ends. The lip edges shall have rounded bead. There shall be at least two U-bolts for tightening of clamp body and keeper pieces together.

Suspension Clamp: The armour grip suspension clamp shall comprise of retaining strap, support housing, Eastover inserts with aluminum reinforcements and AGS preformed rod set.

Elastomer insert shall be resistant to the effects of temperature up to 75° C, Ozone, ultraviolet radiations and other atmospheric contaminants likely to be encountered in service. The physical properties of the elastomer shall be of approved standard.

Interchangeability: The hardware for insulator strings with disc insulators or porcelain long rod insulator together with ball and socket fittings shall be of standard design, so that these hardware are interchangeable with each other and suitable for use with disc insulators or porcelain long rod insulators of any make confirming to relevant Indian/International Standard.

Corona and RI Performance: Sharp edges and scratches on all the hardware fittings shall be avoided. All surfaces must be clean, smooth, without cuts and abrasions or projections. The contractor must give suitable assurance about the satisfactory corona and radio interference performance of the materials offered by him.

Designation:

Ball and Socket Designation: The dimensions of the ball and socket shall be 16 mm for 90 KN insulators are used. The designation should be in accordance with the standard dimensions stated in IS: 2486 (Part-II)/IEC:120. The dimensions shall be checked by the appropriate gauge after galvanizing only.

Security Clip and Split Pins: Security clips for use with ball and socket coupling shall be R-shaped, hump type which provides positive locking of the coupling as per IS:2486 (Part-III)/IEC:372. The legs of the security clips shall be spread after assembly in the works to prevent complete withdrawal from the socket. The locking device should be resilient, corrosion resistant and of suitable mechanical strength. There shall be not risk of the locking device being displaced accidentally or being rotated when in position. Under no circumstances shall the locking devices allow separation of fittings.

The hold for the security clip shall be countersunk and the clip should be of such design that the eye of clip may be engaged by a hot line clip puller to provide for disengagement under energized conditions. The force required to pull the security clip into its unlocked position shall not be less than 50 N (5 Kg) or more than 500 N (50 Kg).

Split pins shall be used with bolt & nuts.

Arching Horn/Intermediate Arching Horn: The arching Horn/intermediate arching horn shall be either ball ended rod type or tubular type.

The air gap shall be so adjusted to ensure effective operation under actual field conditions.

Test Certificates:

Necessary type test certificate obtained from Government approved laboratory should be submitted along with tender

Necessary routine electrical and mechanical test certificates in duplicate as per IS/IEC carried out during manufacturing should be forwarded along with the material.

Packing and Marking:

All material shall be packed in strong and weather resistant wooden cases/crates. The gross weight of the packing shall not normally exceed 200 Kg to avoid handling problems.

The packing shall be of sufficient strength to withstand rough handling during transit, storage at site and subsequent handling in the field.

Suitable cushioning, protective padding, dunnage or spacers shall be provided to prevent damage or deformation during transit and handling.

Bolts, nuts, washers, cotter pins, security clip and split pins etc. shall be packed duly installed and assembled with the respective parts and suitable measures shall be used to prevent their loss.

Each component part shall be legibly and indelibly marked with trade mark of the manufacturer and year of manufacture.

All the packing cases shall be marked legibly and correctly so as to ensure safe arrival at their destination and to avoid the possibility of goods being lost or wrongly dispatched on account of faulty packing and faulty or illegible markings. Each wooden case/crate shall have all the markings stenciled on it in indelible ink.

Standards:

The Hardware fittings shall conform to the following Indian/International Standards which mean latest revisions, with amendments/changes adopted and published, unless specifically stated otherwise in the Specification.

In the event of the supply of hardware fittings conforming to standards other than specified, the Bidder shall confirm in his bid that these standards are equivalent to those specified. In case of award, salient features of comparisons between the Standards proposed by the Contractor and those specified in this document will be provided by the Contractor to establish their equivalence.

TENDER FORM

21

From

To

The Executive Engineer -VI,
Electricity Department,
Puducherry- 605 001.

Sir,

Sub: Tender specification No.
for the supply of 90 sets of Vibration damper suitable for "Panther"
ACSR conductor

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Referring to the above tender specification, I am submitting herewith my tender as detailed below:-

- | | |
|--|--|
| 1. Tender for the supply of | Vibration damper suitable for
"Panther" ACSR conductor |
| 2. Quantity | : 90 Nos |
| 3. Basic price / Unit | |
| 4. Rate and amount of excise duty | |
| 5. Rate and amount of education Cess | |
| 6. Rate and amount of sales tax | |
| 7. Freight, insurance and other charges | |
| 8. Discount, if any | |
| 9. Net price / Unit | |
| 10. Total net price | |
| 11. Terms of delivery | Free delivery at Central Stores,
Electricity Department, Puducherry
F.O.R., Puducherry by road |
| 12. Period of delivery (to be reckoned from
the date of regular supply order) | |
| 13. Terms of payment (See para 2.6 of
Tender document | : 100% within 30 days on receipt of the
materials in good condition. |
| 14. Validity of the offer (See para 1.6 of
Tender Condition) | : 120 days from the date of opening |

15. Guarantee period (See para 2.8 of Tender Condition)
16. Whether permanently registered with NSIC / DGS & D /SSI of Pondicherry for the items quoted. (Photostat copies of the certificate to be enclosed)
17. Whether agreed to pay security deposit as per condition 1.13
18. Details of Earnest Money Deposit furnished:
- | | |
|------------------|---|
| Cash Receipt No. | : |
| Dated | : |
| Amount | : |
| Demand Draft No. | : |
| Dated | : |
| Amount | : |
| Bank | : |
19. Whether type test certificate obtained from
20. Whether the item quoted bears ISI mark / Conforms to IS specification.
(Photostat copies of the certificate to be enclosed)
21. Whether sample enclosed/will be furnished within 10 days
22. Whether income-tax certificate enclosed :

I agree to supply the materials at the above rates and agree to all the conditions set forth in the Tender Specification.

Yours faithfully,

Enclosure:

3. Cash Receipt/Demand Draft.
4. Sample.

SPECIFICATION FOR VIBRATION DAMPER SUITABLE FOR "Panther ACSR CONDUCTOR"

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Vibration damper of 4R-stock bridge type with four different resonances spread within the specified Aeolian frequency band with corresponding to wind speed of 4m/s to 7 m/s shall be used at suspension and tension points on each conductor in each span to damp out Aeolian vibrations as mentioned hereinafter.

- 1.1 Alternate damping systems or "Dogbane" dampers offering equivalent or better performance also shall be accepted provided the manufacturer meets the qualifying requirements stipulated in the specifications. Relevant technical documents to establish the technical suitability of alternate systems shall be furnished by the bidder along with the bid.
- 1.2 One damper minimum on each side of sub-conductor for suspension points and two dampers minimum on each side per conductor for tension points shall be used for ruling design span of 300 meters. No vibration damper shall be provided in the slack span (between dead end tower and gantry structure)
- 1.3 The bidder may offer damping system involving more number of dampers per ruling design span than the specified. However suitable price compensation shall be considered for evaluation. For the purpose of price compensation 80% of the towers as suspension locations and 20% of the towers as tension locations and all the spans shall be assumed to be ruling design spans.
- 1.4 The clamp of the vibration damper shall be made of high tensile strength aluminum alloy of type LM- 6. It shall be capable of supporting the damper and prevent damage or chafing of the conductor during erection or continued operation. The clamp shall have smooth and permanent grip to keep the damper in position on the conductor without damaging the strands or causing premature fatigue failure of the conductor under the clamp. The clamp groove shall be in uniform contact with the conductor over the entire clamping surface except for the rounded edges. The grooves of the clamp body and clamp gap shall be smooth, free from projections, grit or other materials which could cause damage to the conductor when the clamp is installed. Clamping bolts shall be provided with self locking nuts and designed to prevent corrosion of threads or loosening in service.
- 1.5 The messenger cable shall be made of high tensile strength galvanized steel/stainless steel with a minimum strength of 135 Kgs/Sq.mm. It shall be of preformed and post formed quality in order to prevent subsequent droop of weight and to maintain consistent flexural stiffness of the cable in service. The number of strands in the messenger cable shall be 19. The messenger cable other than stainless steel shall be hot dip galvanized in accordance with the recommendations of I.S. 4826 for heavily coated wires.
- 1.6 The damper mass shall be made of hot dip galvanized mild steel/cast iron or a permanent mould cast zinc alloy. All castings shall be free from defects such as cracks, shrinkage, inclusion and blow holes etc. The surface of the damper masses shall be smooth.
- 1.7 The damper clamp shall be casted over the messenger cable and offer sufficient and permanent grip on it. The messenger cable shall not slip out of the grip at a load less than the mass pull-off value of the damper. The damper masses made of

materials other than zinc alloy shall be fixed to the messenger cable in a suitable manner in order to avoid excessive stress concentration on the messenger cables which shall cause premature fatigue failure of the same. The messenger cable ends shall be suitably and effectively sealed to prevent corrosion. The damper mass made of zinc alloy shall be casted over the messenger cable and have sufficient and permanent grip on the messenger cable under all service conditions.

1.8 The damper assembly shall be so designed that it shall not introduce radio interference beyond acceptable limits.

1.9 The vibration damper shall be capable of being installed and removed from energized line by means of hot line technique. In addition the clamp shall be capable of being removed and reinstalled on the conductor at the designated torque without shearing or damaging of fasteners.

1.10 The contractor must indicate the clamp bolt tightening torque to ensure that the slip strength of the clamp is maintained between 2.5 KN and 5 KN. The clamp when installed on the conductor shall not cause excessive stress concentration on the conductor leading to permanent deformation of the conductor strands and premature fatigue failure in operation.

1.11 The technical particulars for vibration analysis and damping design of the system are as follows:

Sl. NO.	Description	Technical Particulars
01.	Ruling design Span length in meters	300 meters
02.	Configuration	Single conductor per phase in vertical configuration
03.	Tensile load in conductor at temperature of 0 deg. and still air	As per sag tension calculations
04.	Armour rods used	Standard preformed armour rods/AGS
05.	Maximum permissible dynamic strain	+/- 150 Micro strains

1.12 All ferrous parts shall be dip galvanized, after all machining has been completed. Nuts may, however, be tapped (threaded) after galvanizing and the threads oiled. Spring washers shall be electro galvanized as per grade 4 of I.S:1573. The bolts threads shall be undercut to take care of increase in diameter due to galvanizing. Galvanizing shall be done in accordance with IS:2629/IS1367(Part -13) and satisfy the tests mentioned in IS:2633-1986. Fasteners shall withstand four dips while spring washers shall withstand three dips. Other galvanized materials shall have a minimum over range coating of Zinc equivalent to 600 gr/sq.m and shall be guaranteed to withstand at least six dips each lasting one minute under the standard preece test for galvanizing unless otherwise specified.

1.13 The zinc coating shall be preferably adherent, of uniform thickness smooth reasonably bright continuous and free from imperfections such as flex ash rust strains bulky white deposits and blisters. The Zinc used for galvanizing shall be of any grade in IS:209:1992 ingot or I.S- 13229:1991

1.14 In case of castings, the same shall be free from all internal defects like shrinkage, inclusion, blow holes, cracks etc.

- 1.15 All current carrying parts shall be so designed and manufactured that contacts resistance is reduced to minimum and localized phenomenon is averted.
- 1.16 No equipment shall have sharp ends or edges, abrasions or projections and shall not cause any damage to the conductor in any way during erection or during continuous operation which would produce high electrical and mechanical stresses in normal working. The design of adjacent metal parts and mating surfaces shall be such as to prevent corrosion of the contact surface and to maintain good electrical contact under all service conditions.
- 1.17 Particular care shall be taken during manufacture and subsequent handling to ensure smooth surface free from abrasion or cuts.
- 1.18 The fasteners shall conform to the requirement of I.S:6639. All fasteners and clamps shall have corona free locking arrangements to guard against vibration loosening

Test reports:

- 2.1 Copies of the type test reports shall be furnished along with the tender.

Packing and Marking:

- 3.1 All materials shall be packed in strong and weather resistant wooden cases/crates. The gross weight of the packing shall not normally exceed 200 Kgs to avoid handling problems.
- 3.2 The packing shall be of sufficient strength to withstand rough handling during transit, storage at site and subsequent handling in the field.
- 3.3 Suitable cushioning, protective padding, dunnage or spacers shall be provided to prevent damage or deformation during transit and handling.
- 3.4 Bolts and nuts washers cotter pins security clips and split pins etc., shall be packed duly installed and assembled with the respective parts and suitable measures shall be used to prevent their loss.
- 3.5 Each component part shall be legibly and indelibly marked with trade mark of the manufacturer and year of manufacture.
- 3.6 All the packing cases shall be marked legibly and corroded so as to ensure safe arrival at their destination and to avoid the possibility of goods being lost or wrongly dispatched on account of faulty packing and faulty or illegible marking. Each wooden cases/Crete shall have all the markings stenciled on it in indelible ink.

