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SPECIFICATION NO. JDVVNL/SE (MM&C)/TN-1287
SUPPLY OF 11 KV 400Amp. ISOLATORS WITH POST INSULATORS WITHOUT EARTH
BLADE ASSEMBLED

| | | |
|--|---|---|
| Availability of tender documents on web site | : | onwards |
| Last date for downloading of tender documents | : | 01.02.2017 (6.00 PM) |
| LAST DATE & TIME OF UPLOADING OF TENDER / OFFER (E-TENDERING). | : | 02.02.2017 (12.00 PM) |
| DATE & TIME OF ONLINE OPENING OF TENDER | : | 02.02.2017 (3.00 PM) |
| TENDER PROCESSING FEES (NON-REFUNDABLE) | : | Rs. 1000.00 |
| COST OF SPECIFICATION (NON-REFUNDABLE) | : | Rs. 2500.00 |
| VALIDITY OF TENDERS REQUIRED UPTO | : | 120 Days from the Next Date of opening of Techno Commercial Bid. |
| EARNEST MONEY TO BE DEPOSITED | : | Rs. 500000 (Rs. Five Lac only) or Exemption Certificate or Vendor Registration Certificate of A category |
| TENDERING QUANTITY | : | 9435Sets (for 11 KV Isolator) with PI Without EB & 24KV Post Insulator one extra spare with each set |
| CONTACT PERSON (AUTHORIZED BID SIGNATORY) | : | Superintending Engineer (MM&C) JdVVNL, Jodhpur |
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Note:- The bidder, in their own interest, are requested to read very carefully Section-I (Instruction to bidders), Section-II (General Condition of Contract) & Section-III (Technical Specification) before filling the bid. The Bid documents be downloaded from JdVVNL website www.JdVVNL.com or www.http://eproc.rajasthan.gov.in and upload the tender on website of RISL www.http://eproc.rajasthan.gov.in. No hard copy of the bidding documents will be provided to the bidders through this office. In case of any discrepancy found in bidding documents downloaded from the website and appended with the bid (as a bid document) and original copy of such document available in the office of Superintending Engineer (MM&C), Jodhpur Discom, Jodhpur then the copy available with Superintending Engineer (MM&C), Jodhpur Discom, Jodhpur will be considered as final document for all purpose. The cost of Bid document as published in NIT shall be furnished along with EMD one day prior to opening of bid i.e. and scan copy the be upload on website of RISL downloaded bid document in the manner prescribed in bid document

TECHNICAL SPECIFICATION AND OTHER REQUIREMENT FOR 11KV, 400 AMP. ISOLATORS WITH POST INSULATORS WITHOUT EARTH BLADE ASSEMBLED AGAINST TN-1287

1.0 SCOPE:

This specification covers design, manufacture, assembly testing at manufacturer's works, packing and & delivery with accessories and auxiliary equipments at site(s).store(s) of 11 KV,400 AMP. Isolators without Earth Switch with Post Insulators required for installation at various 11KV Sub Stations in Jodhpur Discom. The manufacturer shall also provide one extra 24KV Post Insulator with each set as spare .The manufacturer shall also provide design, drawing and bill of material for supporting structures for installation of their Isolators without earth switch.

It is not the intent to specify completely herein all details of the design and construction of equipments. However, the equipment shall conform in all respects to high standards of engineering, design and workmanship and shall be capable of performing in continuous operation upto the supplier's guarantee acceptable to the Purchaser, who will interpret in a manner the meaning of drawings and specifications and shall have the power to reject any work or material which in his judgment is not in accordance herewith. The equipment offered shall be complete with all components necessary for its effective and trouble free operation along with associated equipments, interlocks, protection schemes etc. Such components shall be deemed to be within the scope of supply, irrespective of whether those are specifically brought out in this specification and/or the commercial order or not. All similar parts particularly movable ones shall be interchangeable.

2.0 STANDARDS:

Unless otherwise specified elsewhere in this specification, the rating as well as performance and testing of the isolators shall conform to the latest revisions and amendments of the following standards available at the time of placement of order.

| Sl. No. | Standard Title |
|---------|--|
| 1. | IS:9921 Alternating current isolators (disconnectors) and Earthing switches. |
| 2. | IEC:60129 -do- |
| 3. | IS:2544/1973 Insulators. |
| 4. | IS:5350 Outdoor cylindrical post (Pt.III/1971) insulators. |
| 5. | IS:2629/1985 Recommended practice for hot dip galvanising of iron and steel. |
| 6. | IS:4759/1996 Hot dip galvanisation coating on structural steel. |
| 7. | IS:2633/1986 Method of testing uniformity of coating on Zinc coated articles. |
| 8. | IS:1573/1986 Electroplated coatings of zinc on iron and steel. |
| 9. | IS:6735/994 Spring washers. |
| 10. | IS:2016/1967 Plain washers. |
| 11. | IS:5561/1970 Electrical power connectors. (Terminal connectors) |
| 12. | Indian Electricity Rules. |
| 13. | IS:9530/1980 Recommended practice for silver plating. |
| 14. | BS:2816/1964 Testing of silver plating thickness |
| 15. | IS:5925/1970 Recommended practice for silver plating for general engineering purposes. |

3.0 CLIMATIC CONDITIONS:

Equipment to be supplied against this specification shall be suitable for satisfactory continuous operation under the following tropical conditions:

| | | |
|-------|---|-------------------------------------|
| i) | Location | Anywhere in Rajasthan |
| ii) | Max. ambient air temp. in shade (deg.C) | 50 |
| iii) | Min. ambient air temp. (deg.C) | (-) 5 |
| iv) | Average daily ambient air temperature(Deg.C.) | 45 |
| v) | Max. yearly weighted ambient temp.(Deg.C.) | 35 |
| vi) | Max.Relative humidity (%) | 95 |
| vii) | Average annual rainfall (mm) | 100 to 1000mm (depending upon area) |
| viii) | No. of rainy days P.A. | 70 |
| ix) | Max. wind pressure (Kg/sq.m.) | 195 |
| x) | Max. altitude above mean sea level (metres) | 815 |
| xi) | Isoceraunic level (days/year). | 4 months (June to Sept.) |
| xii) | Seismic level (horizontal acceleration). | 0.08g |

Note: Moderately hot and humid tropical climate conducive to rust and fungus growth. The climatic conditions are also prone to wide variations in ambient conditions. Smoke is also present in the atmosphere. Heavy/lightning also occurs during June to October.

4.0 PRINCIPAL PARAMETERS:

4.1 The equipment covered in this specification shall meet the technical requirements listed below:

| S.NO. | Particulars | 11KV Isolator |
|---|---------------------------------|----------------------|
| A) PARTICULARS OF SYSTEM: | | |
| i) | Nominal system voltage :KV(rms) | 11 |
| ii) | Highest system voltage :KV(rms) | 12 |
| iii) | Rated Frequency. :Hz. | 50 |
| iv) | Number of phases. | 3 |
| v) | System Neutral Earthing | Effectively earthed |
| B) Service conditions | | As per clause No.4.0 |
| C) Characteristics of a disconnector | | |

or earthing switch:

The values of the Parameters/Particulars mentioned below shall not be less than the specified against each.

| S.NO. | Particulars | 11KV Isolator |
|-------|--|---|
| 1. | Number of poles. | 3 |
| 2. | Class - Indoor or Outdoor | Out door |
| 3. | Rated voltage :KV(rms) | 11 |
| 4. | Operating mechanism | Manual |
| 5. | Type of disconnecter.(AB) | Triple pole, gang operated double break, central post rotating. |
| 6. | Rated insulation level: _____ | |
| | a) 1.2/50 Micro Sec. lightning impulse withstand voltage. _____ | |
| | i) To earth & between poles: KV (Peak) | 75 |
| | ii) Across the isolating distance.KV(Peak) | 95 |
| | b) One minute P.F. withstand voltage. _____ | 28 |
| | i) To earth & between poles: KV (rms) | 28 |
| | ii) Across the isolating distance.KV(r.m.s.) | 32 |
| 7. | Rated normal current-A (rms) | 400 |
| 8) i) | Rated short time withstand current for three second. KA (rms) | 16 |
| | ii) Rated peak withstand current: KA(Peak) | 40 |

4.2 SPECIFIC TECHNICAL REQUIREMENTS :

| | |
|---|---|
| 1. Phase to Phase separation(min.) (Centre to Centre) | 760mm |
| 2. Minimum centre to centre distance between two poles of same phase. | 300mm |
| 3. Size of base channel on which insulators are to be mounted. | 100X50mm |
| 4. Size of vertical operating pipe(Down pipe) | |
| i) Length | 6m for equipment without earth blade |
| ii) Nominal bore. | 25 mm |
| 5. Minimum length of operating handle. | 500 mm |
| 6. Nominal bore of phase coupling pipe. | 20 mm |
| 7. Minimum cross-sectional area of terminal pad . | 50X50X4.5mm |
| 8.(a)Minimum cross-sectional area of fixed contacts. | 220sq.mm(Min.) (55sq.mmX4 Nos.) |
| (b)Minimum cross-sectional area of one finger | 55 sq.mm |
| 9. Minimum nos. of fingers in a fixed contact. | 2 pairs (4 fingers) |
| 10. Diameter of Arcing Horn (Rod). | 8 mm |
| 11. Size of flexible earthing connector : | |
| i) Minimum cross-sectional area. | -----160 sq.mm ----- |
| ii) Length. | -----150 mm ----- |
| iii) For operating handle | 50 Sq.mm.x 150 mm length |
| 12. Name of conductor for which Electric power connector shall be suitable. | RACCOON/ DOG (As per purchaser's choice) |
| 13. Min. size of stainless steel spring to be provided with fixed contact. | |
| i) Gauge | 16SWG |

| | |
|--|--------------------------|
| ii) Outer diameter | 15mm |
| iii) Minimum nos of turns per coil. | 6 nos. |
| iv) Min. total length. | 28 mm |
| 14. Minimum number of guides to be provided for down pipe. | 3/2 nos. |
| 15. Minimum size of bimetallic strip to be provided between Aluminium terminal connector and copper terminal pad. | 50X50X1 mm |
| 16. Top & bottom pitch circle diameter of post insulator (to be procured seperately) for which isolator hardware shall be suitable. | 76mm |
| 17. Numbers of minimum size of bolts to be provided for fixing terminal connector with terminal pad. | 4X1/4" dia |
| 18. Max. temperture rise allowed above ambient temperture of 50 degree centigrade | -----25 degree cen.----- |

5.0 GENERAL TECHNICAL REQUIREMENTS:

5.1 The Isolators shall be constructed out of best quality of material suitable for whether conditions prevailing in Rajasthan. The workmanship shall be of the highest grade and the entire manufacture shall be in accordance with the modern Engineering practices. All ferrous parts shall be given an anticorrosive finish and shall be hot dip galvanized. The other parts shall be substantially non corrosive. The bearings in the current path shall be shunted by flexible copper connectors of adequate cross section and the bearing housings shall be completely weather proof with arrangement to facilitate the lubrication of the bearings.

5.2 The Isolators shall be of tripple pole, gang operated, double break, three posts with central post rotating, banging type suitable for outdoor horizontal mounting The operating handle shall have arrangement for locking Isolators/earth switch in 'ON' and 'OFF' positions.

5.3 For reasons of safety, the switch isolator should be so designed that no dangerous leakage current can pass from the terminals of one side to any terminals of the other side of the switch Isolator.

5.4 The frame of each Isolator and earthing switch shall be provided with reliable earthing terminal for each phase for connection to an earthing conductor having a clamping bolt/screw of not less than 12mm diameter. The terminal shall be marked with 'Earth' symbol.

5.5 The isolators shall be provided with arcing horns of fixed type with make before and break after actual making and breaking of isolator main contacts. The arcing horn shall be made of G.I. Rod and their position shall remain unchanged after mechanical endurance test (slight welding is permitted for this fabrication purpose).

5.6 All similar materials and removable parts of similar equipment shall be interchangeable with each other.

5.7 The vertical operating pipe and phase coupling pipe shall be of galvanized mild steel tube (medium class) as per IS-1161.

5.8 Suitable arrangement shall be provided to padlock the operating handle of isolating switches and earth switch in 'ON' & 'OFF' positions.

5.9 All ferrous parts shall be hot dip galvanized and uniformity of zinc coating shall satisfy requirement of IS-2633. The pipes /tubes shall be galvanized in accordance with IS-4736.

5.10 All contact surfaces shall be silver /nickel plated as per IEC:60129 and their temperature rise shall be maximum 25 degree centigrade. The current density shall be less than 2.5 Amps. per Sq.mm. in copper, or minimum cross sectional area shall be as specified.

5.11 The height of 1 x 24 KV pedestal post type (E-32) insulator (conforming to IS:5350 Part.III & IS:2544) stack to be used with 11 KV isolator hardware shall be 254 mm and Mechanical strength (Failing Load) shall be 9KN

5.12 BASE CHANNELS :

The channels shall be of sizes mentioned in clause No.4.0 "Principal parameters" of this specification and shall conform to IS- 808.

5.13 BEARINGS :

5.13.1 The bearing assembly for each rotating central post shall have one number taper thrust roller bearing at top & one number ball bearing at the bottom/other end of bearing housing. The entire mechanical load shall be suspended on thrust bearings. Cross sectional drawings of the bearings shall be furnished with the tender.

5.13.2 The vertical operating shaft shall be supported with taper thrust roller bearing on the top and at least two guides in between at uniform interval alongwith its length in order to ensure smooth and easy operation.

5.13.3 A galvanised MS Angle/channel of suitable length shall be provided for fixing of fourth bearing assembly. The holes provided shall be of movable type at equal distance to that of base channel holes.

5.14 OPERATING MECHANISM :

5.14.1 The operating mechanism shall be suitable for normal operations by one man without undue efforts. The mechanism shall be so designed that all the three blades are in positive continuous control throughout the entire cycle of operation. It shall not be possible after final adjustment have been made for any part of the mechanism to be displaced at any point in the travel so as to allow improper functioning of switch, whether the switch is in opened or in closed condition.

5.14.2 All G.I. Pipes used in operating mechanism of isolators and earth switches shall be of medium class as per IS-1161.

5.14.3 The Isolators with or without earthing switches complete with the operating mechanism should not come out of its own in open or closed position due to the effect of gravity, wind pressure, vibrations, reasonable shocks or accidental touching of operating rods. The arrangement made and stoppers provided to prevent over travel shall be clearly shown in the tender drawings.

5.14.4 The Isolators should also be capable of resisting in closed position, the dynamic and thermic effects of the maximum possible short circuit current at the installation point. Their construction should be such that it should not open under the influence of short circuit current.

5.14.5 The earthing of operating handle shall be made through flexible copper strip of size as per IS:9921(Pt.III)-1982, connected to the supporting metallic structure.

5.15 CONTACTS :

5.15.1 The fixed contacts shall be of spring loaded reverse loop type as detailed in Clause No.4.2 (8&9) . The minimum length of each finger should be 105 mm or equal to type tested isolator whichever is higher for 11KV 400 Amp. isolator.

The moving contacts shall be of solid hard drawn electrolytic copper of tubular sections.

5.15.2 The contacts and switches blades shall be of liberal cross section to withstand the rated continuous current. The copper contacts shall be silver/ nickel plated as per IEC:60129 and female contacts fingers shall be provided with spring of Phosphor Bronze or stainless steel. The spring shall be fixed in the finger contacts through taflon/nylon insert at both ends so that no transfer of current is possible through spring and direct electric heating of springs is avoided.

5.15.3 The contacts must be made of liberally rated electrolytic hard drawn copper suitably plated to withstand damage on account of weather conditions prevailing at site and accidental arcing. High pressure contact switch shall be designed with a contact pressure 1/2 (Half)Lb per Amp. of capacity. The tenderer shall specifically confirm that the material components and cross sectional areas of all current carrying parts shall be either exactly same or superior to that of isolator got type tested for short circuit test, temperature rise test and Mili volt drop test as per relevant standards.

5.15.4 Full details of the contacts and switch blades shall be given with cross sectional drawings to dimension. The temperature rise of the contacts shall not exceed 25 degree centigrade at an ambient temperature 50 Degree C.

5.15.5 The current density in current carrying parts shall not exceed 2.5A per sq.mm for copper and 1.0A per sq.mm for Aluminium considering with & without holes for overlapping for which supporting calculations must be submitted with offer.

5.16 TERMINAL PAD :

The terminal pad shall be made of electrolytic copper flat and should be liberally sized, so as to receive terminal connectors through minimum 4 Nos. of nuts and bolts of suitable size.

5.17 ELECTRIC POWER CONNECTORS (TERMINAL CONNECTORS) :

5.17.1 The isolators shall be provided with 6 Nos of bimetallic rigid type universal terminal connectors of aluminium alloy suitable for conductors as per clause No.4.2. The size of terminal connector should match with terminal pad size. The terminal connector shall also be suitable for horizontal and vertical take off arrangement.

5.17.2 Thickness of bimetallic strip between terminal pad and aluminium terminal connector shall be atleast 1 mm. The current density in terminal connectors shall be less than 1.0 Amps. per Sq.mm. The connectors shall conform to all the test requirement of IS-5561 with latest amendments.

5.18 BOLTS, NUTS & WASHERS:

5.18.1 All bolts, nuts & washers required for assembling the equipment and for fixing them on to the structure shall be galvanized and shall be supplied with the equipment at no extra cost.

5.18.2 Bolts & nuts shall also be provided with lock washers and lock nuts required for fixing post insulators/post insulator stacks on base plate/base channel.

5.19 ACCESSORIES AND FITTINGS :

The following accessories and fittings shall be provided with the isolators.

- i) Handle suitable for pad locking in 'ON' & 'OFF' position.
- ii) Three earthing terminals having clamping bolts of atleast 12mm diameter.
- iii) Name Plate shall be provided on the equipment as per IS/9921.
- iv) Galvanised arcing horns of liberally rated renewable rod type with make before and break after arrangement.
- v) Mechanical interlock for earthing swithes.
- vi) Base Channels.
- vii) Electric power connectors (Terminal connectors)

5.20 CLEARANCES :

The isolators shall have clearances conforming to relevant IS and should meet the requirements of the impulse voltage tests as specified therein.

5.20.1 The equipment covered by this specification shall be used outdoor and maximum temperature attained by any part of the equipment in service at site conditions and full load current shall not exceed the permissible limits mentioned in IS:9921 at an ambient temperature of 50 Degree C. Tenderers are required to mention specific degree of maximum temp. rise in GTPs.

5.20.2 The temperature rise test after fitting terminal connectors shall also be carried out as routine test on one switch isolator out of each lot offered for inspection. The limit shall not exceed those specified under this specification.

5.20.3 Where **Porcelain Insulators** are offered they shall be made of homogeneous and vitreous porcelain of high mechanical and die-electric strength. It shall have sufficient mechanical strength to sustain electrical and mechanical loading on account of wind load, short circuit forces etc., Glazing of the porcelain shall be of uniform brown or dark brown colour with a smooth surface arranged to shed away rain water. The porcelain shall be free from laminations and other flaws or imperfections that might affect the mechanical or dielectric quality. It shall be thoroughly vitrified, tough and impervious to moisture. The porcelain and metal parts shall be assembled in such a manner and with such material that any thermal differential expansion between the metal and porcelain parts throughout the range of temperature specified in this specification shall not loose the parts or create undue internal stresses which may affect the mechanical or electrical strength or rigidity of the unit as a whole or stack of two units. The assembly shall not have excessive concentration of electrical stresses in any section or across leakage surfaces. Cement used in the construction of post insulators shall not cause fracture by expansion or loosening by construction and proper care shall be taken to locate correctly the individual parts during cementing. The cement used shall not give rise to chemical reaction with metal fittings and its thickness shall be uniform. The insulator shall be suitable for water washing by rain or artificial means in service condition. Profile of the insulator shall also conform to the relevant IS.

5.20.4 Cap to be provided on top of the insulator shall be of high grade cast iron or malleable steel casting. It shall be machine faced and hot dip galvanised. The cap of 24KV Post Insulators shall have four numbers of tapped holes spaced on a pitch circle diameter of 76mm . The threads of the tapped holes in the post insulator metal fittings shall be cut after giving anti corrosion protection and shall be protected against rust by greasing or other similar means, all other threads shall be cut before giving anticorrosion protection and shall conform to IS: 4218 with latest version thereof The tapped holes shall be suitable for bolts with threads having anticorrosive protection.

The effective depth of threads shall not be less than the nominal diameter of the bolt. The cap shall be so designed that it shall be free from visible corona.

5.20.5 The casting shall be free from blow holes, cracks and such other defects.

5.20.6 All the ferrous metal parts shall be given an anticorrosive finish and shall be hot dip galvanised smoothly as per IS:3638 (as amended upto date), IS:2611 or any other equivalent authoritative standard. The other parts shall be substantially non corrosive. The material shall be galvanised only after shop operations upon it have been completed. The metal parts before galvanising should be thoroughly cleaned of any paint, grease, rust, scales or alkali or any foreign deposit which are likely to come in the way of galvanising process. The coating on the metal parts shall withstand minimum four one minute dips in copper sulphate solution as per the relevant IS.

5.20.7 The insulator unit shall be assembled in a suitable jig to ensure correct positioning of the top and bottom metal fittings relative to one another. The faces of the metal fittings shall be parallel and at right angles to the axis of the insulator and the corresponding holes in the top and the bottom metal fittings shall be in a vertical plane containing the axis of the insulator.

5.20.8 It shall be the sole responsibility of the Supplier to carry out thorough inspection and quality checks on the insulators at the insulator supplier's works, before offering the isolators for Purchaser's inspection.

5.20.9 The porcelain and hardware surface coming in contact with cement shall be coated with bituminous paint for cushioning to relieve mechanical stress caused by temperature variation and cement expansion.

5.20.10 The post insulators shall conform to IS:5350. The total creepage distance of 24KV post insulator as individual unit shall be minimum 430mm .

5.20.11 Following makes of the Post Insulators shall be acceptable for the supply of 11 KV Isolators

- i) M/s.Jaipur Glass & Potteries, Jaipur.
- ii) M/s.India Potteries, Kolkata.
- iii) M/s.Bikaner Ceramices, Bikaner.
- iv) M/s.CJI Porcelain, Khurja.
- v) M/s.Vishal Melleable, Ankeleshwar.
- vi) M/s.Allied Ceramices Pvt. Ltd., Kolkata.
- vii) M/s.WSI, Chennai.
- viii) M/s.IEC, Bhopal.
- ix) M/s.MIL, Allahabad.
- x) M/s.Jay Shree Insulators, Vadodara.
- xi) M/s.Birla NGK Insulators Pvt. Ltd., Halol.
- xii) M/s.MIL, Abu Road.
- xiii) M/s.Sarvana Insulators Ltd., Kurinji Padi, Dist Cuddalore,
(Tamilnadu).

xiv) M/s BHEL

5.20.12 Besides above, the Post Insulators manufactured by the vendors approved by the Power Grid Corporation of India Ltd (PGCIL) and National Thermal Power Corporation (NTPC) shall also be acceptable.

6.0 TESTS :

6.1 TYPE TEST The following type tests is to be conducted on the dis-connector along with insulators and terminal connectors.

1. Short time withstand current test -

The test is to be carried out as per provisions of IS:9921 (Part.IV). As per clause No. 3.0.2 of (Part.IV). The test carried out on one type of disconnector will be applicable for different current and voltage ratings but with similar components i.e. reverse loop type fixed contacts, tubular moving contact, double break mechanism with similar post insulator. However as per clause No. 3.3.1.1 of IS:9921 (Part.IV) the isolator subjected to type tests shall be atleast favorable conditions of electro magnetic forces than offered isolator for which necessary calculations may be submitted along with offer.

2. High Voltage test –

The type tested isolator shall have lower or equal clearances than offered isolator i.e. for phase to phase clearance, phase to earth clearance and clearance for isolating distance.

- a) Lightning impulse voltage test.
- b) Power frequency voltage withstand test.

3. Temperature rise test.

4. D.C. voltage drop test or measurement of resistance of main circuit.

5. Short time withstand current test on terminal connectors either as per provisions of IS:5561 or tested along with isolator.

6. Mechanical endurance test.

7. Short time withstand current test on earth switch or the offered design should have same cross section area of contacts to main contacts.

TYPE TEST FOR POST INSULATORS:-

1. Visible discharge test.
2. Impulse voltage withstand test on post insulators.
3. Dry and wet power frequency voltage withstand test on post insulators.
4. Temperature cycle test.
5. Test for mechanical strength.
6. Puncture test
7. Porosity test.
8. Galvanizing test.

However, the purchaser reserves the right to demand repetition of some or all the type tests in presence of purchaser's representative. For this purpose, the tenderer should indicate unit rate for carrying out such type tests. These test charges shall not be taken into consideration for bid evaluation.

During type tests the disconnector shall be mounted on its own support structure or equivalent support structure and installed with its own operating mechanism to make the type tests representative.

6.2 The manufacturer is required to conduct following routine tests as per relevant IS on the Isolators complete with required Post Insulators at manufacturer's works .

ROUTINE TEST :

1. Routine mechanical test on post insulators.
2. Routine electrical tests on post insulators.
3. Tests as per IS:2633.

6.3(a) ACCEPTANCE TESTS :

The following tests shall be got conducted in presence of purchaser's representative as per relevant standards at the place of manufacturer before despatch without any extra charges. The tests at Sr. No.1 to 6 are to be carried out on completely assembled isolator as per IS:9921(Pt.IV). The sampling for the inspection of completely assembled isolators, offered for final inspection shall be on 10% of offered quantity(unless otherwise specified). The tests at Sr. No.7 to 12 are to be carried out on Post insulators as per IS:2544 and sampling will also be as per same IS, at original manufacturer's works.

1. Measurement of resistance of main circuit of Isolator as per IS:9921 (Part.IV).
2. Mechanical operating test on atleast one sample selected at random from each type & rating.
3. Mechanical endurance test shall be done as acceptance test on one Isolator of each type & rating from every lot. Mechanical endurance test shall be conducted on the main switch as well as earth switch of one disconnector of each type & rating. Bare contacts shall not be acceptable in any case.
4. Verifications of dimensions as per approved drawing on one Isolator set of each type & rating.
5. Temperature rise test on one set of Isolator of each rating from the offered lot.
6. Preece Test on one Isolator of each type and voltage rating as per relevant IS.
7. Verification of dimensions of post insulators.
8. Temperature Cycle Test on post insulators.
9. Mechanical strength Test on post insulators.
10. Puncture Test on post insulators.
11. Porosity Test on post insulators.
12. Galvanizing Test on post insulators.

6.3(b) TEST ON BOUGHT OUT ITEMS

Tests are not required to be performed on bought out equipments like terminal connectors etc. at the works of manufacturer except operational tests. Furnishing Test Certificate of Isolators and Post Insulators from the original equipment manufacturers shall be deemed to be satisfactory evidence. Inspection of the tests at Sub-contractors works will be arranged by the supplier whenever required.

6.4 TYPE TEST ON SAMPLES SELECTED FROM MATERIAL RECEIVED IN STORES FROM 1st OFFERED LOT (Applicable to Successful bidders, who have not furnished valid Type Test(s) with bid, but furnished B.G. in lieu of Type Test(s))

6.4.1 The first lot offered shall not be less than 10 % of the ordered qty.

6.4.2 One sample of each rating of Isolators along with Post Insulators from the 1st Lot received in purchaser's store shall be selected and sealed for getting it type tested at any Govt. approved/ Govt. recognized/ NABL accredited laboratory/ ILAC i.e. International Laboratory Accredited laboratory / ILAC i.e International Laboratory Accreditation Cooperation (In case of foreign laboratory). The transportation charges of sample(s) from store to test house shall be borne by NIGAM, whereas the charges incurred towards type test of the material at test house shall be borne by the Supplier. The testing charges should be remitted through D.D. in favour the Test House by the supplier with the 1st inspection offer. The name of test house shall be intimated to successful bidder after issue of Purchase order.

6.4.3 At the option of the purchaser, the material received in the stores may be utilized in the field after receipt of successful test reports from CTL, Jodhpur for the mandatory test checking on the samples selected from the material received at stores against first lot and subsequent lot(s) in anticipation of successful type test report(s).

The bidder shall have to deposit type test charge(s) immediately with the supply of 1st lot. If the type test charge(s) are not deposited then acceptance of 2nd offered lot shall be at the discretion of purchaser.

6.4.4 In case sample(s) from first lot fails in type tests then:

a) Supplier shall have to replace the full quantity of the respective inspected lot supplied to various stores which is lying unused.

b) For the quantity already utilized against the order in field, a deduction of 30% (thirty percent) of F.O.R. destination price of the material supplied shall be made.

c) Sample(s) from next lot shall be selected again for type test. All test charges Incurred towards type test of the material for second time shall be borne by the Supplier for which the testing charges should be remitted through D.D. in favour of the Test House by the supplier with the 2nd inspection offer.

6.4.5 In case sample again fails in the type test then:

a) The quantity supplied/received in stores and lying unused in stores shall stand rejected and shall be lifted back by the supplier.

b) For the quantity already utilized against the order in field, a deduction of 30% (thirty percent) of F.O.R. destination price of the material supplied shall be made.

c) Further supplies shall not be accepted and order shall stand cancelled.

The various type tests as per relevant standards shall be conducted on each type of Isolator.

6.5 TOLERANCE:

Tolerance shall be allowed as per respective /relevant Indian Standards unless otherwise specified.

However, no negative tolerance shall be allowed on current carrying parts.

Tolerance of $\pm 5\%$ in dimensions as well as in weight also be allowed except current carrying parts.

7.0 INSPECTION

All the tests (as mentioned at Clause No.7.3) and Inspection shall be made at the place of manufacturer unless otherwise especially agreed upon by the tenderer and purchaser at the time of purchase. The tenderer shall offer required numbers of post insulators for Purchaser's inspection and after clearance of insulator, he will offer assembled Isolators for purchaser's inspection. The tenderer shall afford the inspection officer(s) representing the purchaser all reasonable facilities without charges, to satisfy him that the material is being furnished in accordance with this specification. The purchaser has the right to have the tests carried out at his own cost by an independent agency whenever there is a dispute regarding the quality of supply.

The Inspection may be carried out by the purchaser at any stage of manufacture/ before despatch as per relevant standard.

Inspection and acceptance of any material under the specification by the purchaser, shall not relieve the tenderer of his obligation of furnishing material in accordance with the specification and shall not prevent subsequent rejection if the material is found to be sub-standard. The tenderer shall keep the purchaser informed in advance, about manufacturing programme so that arrangements can be made for inspection.

The purchaser reserves the right to insist for witnessing the acceptance/ routine testings of the bought out items.

8.0 TEST CHECKING OF MATERIAL AT STORES

The material received in the stores of the NIGAM shall be subjected to the test checking at stores before final acceptance of the material, the procedure for the same shall be as under:

8.1 SAMPLING

Two sample out of each sub-lot / lot consisting of following quantities or part thereof from each inspected lot received in stores shall be selected for test checking of material and shall be got tested. The selection of sample from the material received at stores shall be done as soon as material is received in stores without the presence of the representative of the supplier. However, testing of sample(s) at CTL shall be carried out in the presence of representative of the supplier after identification / confirmation by him that sample so selected belongs to them.

8.1(a) one extra sample of 24 KV post insulator for conducting Puncture test.

11 KV 400 Amp. Isolator with Post Insulator With out E.B. – 100 sets

Out of these two samples, one sample shall be sent to test laboratory of the Nigam i.e. at CTL for conducting tests as mentioned in clause no. 8.2 of the specification and in case of non availability of puncture test facility at CTL then the second sample shall be sent to CTL Jaipur Discom, Jaipur for conducting the puncture test only.

8.2 TESTS

The following tests shall be carried out on the above items:

- a) Visual examination, verification of dimensions, weight and marking as per PO/ GTP/ Approved drawing.
- b) Checking of current carrying parts as per approved drawings.
- c) Post Insulators :
 - i) Mechanical strength test.
 - ii) Porosity test

iii) Puncture Test

- d) All galvanized parts. - Uniformity of galvanization test.
- e) Measurement of resistance of contacts (IS: 9921, Part-II)

Only those test(s) shall be conducted for which facility is available at CTL.

For witnessing of the testing, clear 7 (seven) days notice shall be given to the supplier by fax/speed post stating date, time & place where the test is to be conducted. In case the supplier do not attend for witnessing the testing, the testing shall be proceeded and completed and action be taken as per the contract.

The Officer Incharge of Central Testing Lab (CTL) Jodhpur shall send copies of test reports to the purchaser, consignees and the supplier.

8.3 CRITERIA FOR ACCEPTANCE

a) Visual examination , verification of dimensions, weight and marking. As per Specification/GTP/Approved drawing.

b) Checking of current carrying parts as per approved drawings.

If the dimensions of the current carrying metal part are in conformity with approved drawings, the material shall be accepted. When the dimensions of above parts are less then those minimum specified in the approved drawings but upto a limit of 5%, the material contained in the Lot ./ Sub-lot to which the sample belong shall be accepted subject to the conditions that the current density in above part is inconformity with contract and deductions at the rate of 2% cost of above parts for every 1% or part thereof reduction in weight due to less dimensions. The deduction shall be made for weight of above parts calculated on the basis of dimensions observed and found less. The weight shall be compared with one calculated on the basis of the minimum dimensions for the parts approved in the drawings. The rates for reduction shall be taken from the relevant IEEMA circular applicable on the date two month prior to the date of supply. When the dimensions are less than more than 5% as compared to the dimensions as per approved drawings, the material contain in the lot/ sub-lot to which the sample belongs shall be rejected and shall have to be replaced by the supplier.

c) Post Insulators : i) Mechanical strength test. ii) Porosity test
iii) Puncture test.

In case of failure of any of samples in any of the above test , the material contained in the lot / sub lot received in the stores to which the sample(s) belong shall be rejected. The rejected material shall have to be replaced by the supplier free of cost.

d) All galvanized parts. - Uniformity of galvanization test.

i) The sample(s) shall be first tested for (n-2) number of dips where n is specified No. of dips in the contract. If the sample does not pass the uniformity of galvanization test for (n-2) dips, the material shall be rejected and the material relating to relevant sub-lot/ lot to which the sample(s) pertains shall have to be replaced by the supplier free of cost.

ii) If the sample has passed the uniformity of galvanization test for (n-2) dips, then it shall be tested for (n-1) dips. If the sample has not passed the uniformity of

galvanization test with (n-1) dips, the material pertaining to relevant lot/sub-lot shall be accepted with a deduction @ 4% of cost of galvanized material parts.

iii) If the sample passed the uniformity of galvanization test with (n-1) dips, then sample shall be tested for last one dip of one minute to complete the test for `n' dips. If the sample does not pass the uniformity of galvanization test with `n' dips, then the material pertaining to relevant lot/sub-lot shall be accepted with a deduction @ 2% of cost of galvanized material parts.

iv) If the sample(s) have passed the test with number of dips as specified in the contract (n), then material pertaining to relevant lot/sub-lot shall be accepted.

8.4 TEST CHARGES :

All test charges incurred towards test checking of the material received in our stores shall be borne by the NIGAM except that of personal expenses of the representative of the supplier for witnessing the tests.

8.5 PAYMENT: The payment shall be governed in accordance with the clause no. 1.42 of GCC with following modifications:-

A. For the bidders who have furnished valid type test reports with the bid:-

Payment shall be made only after receipt of successful test report from the CTL on the samples selected from the material received at the stores. However, the due dates for payment shall be considered from the date of submission of the bills along with receipted challans to Sr. Accounts Officer (Cash & CPC), JdVVNL, Jodhpur.

B. For the bidders who have not furnished valid type test reports with the bid:-

i) The 70% payment shall be released after receipt of successful test reports from CTL, Jodhpur for the mandatory test checking on the samples selected from the material received at stores against first lot and subsequent lot(s) in anticipation of successful type test reports.

ii) The balance 30% payment shall be released after receipt of successful type test reports on the samples selected from the material received in the stores.

iii) The due dates for payment shall be considered from the date of submission of the bills along with receipted challans to Sr. Accounts Officer (Cash & CPC), JdVVNL, Jodhpur

9.0 DRAWINGS:

9.1 The tenders shall submit with his tender the bill of material and fully dimensional drawing of the offered isolators clearly showing the full details of material components and cross section of moving blade, male and female contacts, details of terminal arrangement, terminal pad, terminal connectors, operating mechanism showing the number and type of bearings, nominal diameter and thickness of various G.I. pipes, earth connectors etc. to be supplied by them to enable the purchaser to examine the offer.

The tenderer shall also furnish drawings and bill of material for supporting structures required for Isolators, although supporting structures are not in the scope of supply.

9.2 The successful bidder will submit the full dimensional on A-3 size paper in triplicate for our approval before commencement of supply. If the successful bidder manufacture the equipment without obtaining approval of drawing, the purchaser will not be responsible if any part is not as per required dimensions. Approval of drawings/work by Purchaser shall not relieve the Supplier of his responsibility and liability for ensuring correctness and correct interpretation of the latest revision of applicable standards, rules and codes of practices.

10.0 OPERATIONS AND MAINTENANCE INSTRUCTION MANUALS:

The successful tenderers shall have to supply three sets of operations and maintenance instruction manuals per set of isolator along with the erection manual and requisite detailed drawings of the equipments covered by this specification.

11.0 NAME AND RATING PLATE:

All items of the equipments included in this specifications shall be provided with a weather and corrosion proof plate **of name/trade mark of manufacturer, rating and TN in according with the provision of the IS:9921. The name & rating plate should be riveted on base channel. Further there should be proper marking on the base channel for identifying RYB phase.**

12.0 PACKING AND MARKING:

12.1 The equipment shall be packed in crates suitable for vertical/horizontal transport, as the case may be and suitable to withstand handling during transport and outdoor storage during transit. The Supplier shall be responsible for any damage to the equipment during transit due to improper and inadequate packing.

The easily damageable material shall be carefully packed and marked with the appropriate caution symbols. Wherever necessary, proper arrangement or lifting, such as lifting hooks etc., shall be provided. Any material found short inside the packing cases shall be supplied by Supplier without any extra cost.

12.2 Each consignment shall be accompanied by a detailed packing list containing the following information:

- a) Name of the consignee.
- b) Details of consignment.
- c) Destination.
- d) Total weight of consignment.
- e) Handling and unpacking instructions.
- f) Bill of material indicating contents of each package.

13.0 PRICES & PRICE VARIATION :

a) The prices shall be quoted in Rs. per set on F.O.R. destination basis in the manner detailed in schedule of Prices(Schedule-IV-BOQ) indicating details of ex-works price, Excise Duty, Sales tax / VAT, freight & Insurance charges and Entry Tax, etc. for delivery at our stores.

b) The quoted price shall be variable as per Price Variation Formula as per **Schedule – II (A) and Schedule-II-B**), without any ceiling. The base date of price variation shall be first working day of month, one month prior to the actual date of opening of Techno-Commercial Bid of tender and shall be as per clause no. 1.10 of instruction to bidders. The offers in which prices have not been quoted in prescribed manner are liable to rejection.

c) If the price variation formula is changed, the same shall be applicable for the price variation. During the transit period when both old and new indices are being circulated, then the admissible Price Variation shall be applicable, which is advantageous to Nigam, and the period from which the old indices are discontinued then the P.V. shall be admissible with the new indices.

14.0 GUARANTEED TECHNICAL PARTICULARS:

Guaranteed technical particulars in Schedule-V shall be furnished along with the tender. Tenders not accompanied with Guaranteed technical particulars, type tests reports, detailed drawings and bill of material etc. are liable to be rejected.

15.0 COMPLETENESS OF EQUIPMENT:

All fittings, accessories or material which may have not been specifically mentioned in this specification, but which are usual or necessary for the equipment shall be deemed to have been included in this specification. All equipments shall be complete in all respect.

16.0 LATENT DEFECTS, ERRORS & OMISSIONS:

Any material/ equipments or part thereof that develops defects, errors or omissions in the apparatus, not disclosed prior to the final acceptance by the purchaser, but occur or are disclosed during the guarantee period, shall be corrected promptly. The equipment or part thereof shall be replaced by the supplier free of charges and all expenses for the transportation, handling, installation of such replacement or any other incidental charges shall be born by the supplier.

17.0 SPARES:

List of spare parts recommended for five years of operation shall be furnished by the tenderer. The tenderer shall also quote unit F.O.R. Destination price of these spare parts stating elements of freight and insurance.

18.0 QUANTITY TOLERANCE :

Quantity tolerance of plus minus 2% of ordered quantity shall be allowed in respect of each item for completion of supply.

19.0 DELIVERY SCHEDULE :

The bidder is required to quote monthly delivery. The delivery of quoted quantity should be completed in **6 months** period including commencement period of **maximum 30 days in equal monthly rate for each type of isolators**. In case ordered quantity is different than quoted quantity, then monthly delivery shall be adjusted proportionately. Tenders in which monthly delivery is not indicated shall be ignored.

The tenderers are required to indicate the delivery schedule in the schedule attached with the Specification.

20.0 The Tenderers are required to provide one extra 24 KV Post Insulator with per set.

SCHEDULE OF REQUIREMENT

The quantity to be purchase is as under:

| PARTICULARS OF ITEM | QUANTITY(NOS) |
|---|------------------|
| i) 11KV, 400 Amp. Isolators with Post Insulators without Earth Blade (assembled) conforming to IS:9921(Pt.1 to 5) and other relevant ISS with latest amendments, if any. | 9435Sets. |
| ii) 24KV Post Insulator one extra spare with each set | 9435 nos. |

The quantity indicated above is provisional and the purchaser reserves the right of revising the same at the time of placing the order.

IEEMA/PVC/INSL/2003

Effective from: 1st April, 03

PRICE VARIATION FORMULA FOR ISOLATORS (Hardware Parts)

The price quoted/confirmed is based on the cost of raw materials/components and labour cost as on the date of quotation and the same is deemed to be related to prices of raw materials/components and All India Average Consumer Price index for industrial workers as specified in the price variation clause given below. In case of any variation in these prices and Index numbers, the prices payment shall be subject to adjustment, up or down, in accordance with the following formula.

$$P = \frac{P_o}{100} \left(25 + \frac{IS}{IS_o} + 18 \frac{C}{C_o} + 10 \frac{Al}{Al_o} + 13 \frac{In}{In_o} + 17 \frac{W}{W_o} \right)$$

Wherein

P = Price payable as adjusted in accordance with the above formula.

P_o = Price quoted/confirmed.

IS_o = Whole sale price index for ferrous metals (Base : 2004-05 = 100) (refer notes).

C_o = Price of electrolytic copper wire bars (refer notes).

Al_o = Price of bus bar grade aluminium (refer notes).

In_o = Price of Phenolic Moulding powder for switchgear and control gear of medium / lower voltage (upto 650 Volts) or price of epoxy resin HT Switchgear (above 650 V) (refer notes).

W_o = All India average consumer price index number for industrial workers as published by Labour Bureau, Ministry of Labour, Govt. of India (Base1982 = 100).

NOTE:- The above and indices are as published by IEEMA vide circular reference No.EEMA(PVC)/SWGR --/-- of the month of Jan,2017

IS = Whole sale price index for ferrous metals (Base: 2004-05 = 100) (refer notes).

This index is as applicable on the first week ending Saturday of the month , four months prior to the date of delivery.

C = Price of electrolytic copper wire bars (refer notes). This price is as applicable on the first working day of the month, two month prior to the date of delivery.

Al = Price of bus bar grade aluminum (refer bites). This price is applicable on the first working day of the month, two months prior to the date of delivery.

In = Price of Phenolic Moulding powder for switchgear and control gear of medium / lower voltage (upto 650 Volts) or price of epoxy resin HT Switchgear (above 650 V) (refer notes). This price is as applicable on the first working day of the month, two month prior to the date of delivery.

W = All India average consumer price index number for industrial workers as published by Labour Bureau, Ministry of Labour, Govt. of India (Base1982 = 100).This index number is as applicable for the month, five months prior to the date of delivery.

This index number is as applicable for the month, five months prior to the date of delivery.

Base date: First working day of month, one month prior to the actual date of opening of Techno-Commercial Bid of tender.

The date of delivery (i.e. date of readiness of material) is to be considered as per clause no. 1.10 of Section – I (Instruction to bidders)

NOTE : a) All prices of raw materials are exclusive of modvat excise / CV duty amount and exclusive of any other central ,state or local taxes, octroi etc.

- b) All prices are as on first working day of the month.
- c) The details of prices are as under:

i) Wholesale Price index number for 'Iron & Steel' as published by the office of Economic Advisor, Ministry of Industry, Govt. of India, New Delhi, with base :1993-94=100. This wholesale price index is being published weekly on provisional basis. However, the same get finalized after eight weeks and are normally available after two months. Therefore, we are considering in our calculations this final indices published by Economic Advisor for the first Saturday of the Month, two month prior to the date of which the price of other raw materials such as C, Al and In are published for the corresponding month.

ii) The prices for electrolytic copper wire bars (in Rs./MT) is ex-godown price as quoted by the primary producer of copper.

iii) The prices of bus bar grade aluminum (in Rs./MT) is the average of ex-works price as quoted by the two primary producers for the bus bar size 152.4x6.35 mm flat approximately, of grade equivalent to E91E as per IS-5082-1981 (or the latest).

iv) The price of insulating material (in Rs./Kg) is the average price of phenolic moulding powder quoted by three manufacturers (for switchgear and control gear of medium / lower voltage upto 650 volts) or is the price of epoxy resin quoted by a resin manufacturer for their grade CT 5900 or its nearest equivalent (for HT switchgear above 650 volts).

PRICE VARIATION CLAUSE FOR POST INSULATORS (Of Isolator)

The price quoted/confirmed is based on the cost of raw materials /components and labour cost as on the date of quotation and the same is deemed to be related to prices of raw materials, index number for insulators and all India average consumer price index number for industrial workers as specified below. In case of any variation in these prices and Index numbers, the prices shall be subject to adjustment, up or down, in accordance with the following formula.

$$P = \frac{Po}{100} (15+5 \frac{Zn}{Zno} + 53 \frac{IN-INSLR}{Ino_INSLR} + 27 \frac{W}{Wo})$$

Wherein

P = Price payable as adjusted in accordance with the above formula.

Po = Price quoted/confirmed.

Zno = Price of electrolytic high grade zinc(refer notes).

Ino-INSLR = Index number for insulators based on relative prices and weightage (as given in brackets) of wholesale price index for fuel, power, light & lubricants (28), whole sale price index for basic metals, alloys & metal products (15), wholesale price index for wood & wood products(6) and Ball clay (4), calculated considering their values as on 1st January, 2003 as base equal to 100 (Refer Notes).

Wo = All India average consumer price index number for industrial workers (Base 2001=100) as published by the Labour Bureau, Ministry of Labour, Government of India.

NOTE:- The above and indices are as published by IEEMA vide circular reference No. IEEMA/(PVC) INSLR --/-- of the month of Jan, 2017.

Zn = Price for electrolytic high grade zinc (refer notes) . This price is as applicable on the first working day of the month , two months prior to the date of delivery.

IN - INSLR = Index number for insulators based on relative prices and weightages (as given in brackets) of whole-sale price index for fuel power, light and lubricants (28) wholesale price index for basic metals, alloys & metal products (15), wholesale price index for ball clay (4), wholesale price index for wood and wood products (6), calculated considering their values as on Ist January 2003 as base equal to 100 (Refer Notes). This index number is as applicable on the first working day of the month, two months prior to the date of delivery.

W = All India average consumer price index number for industrial workers (base 2001 = 100), as published by Labour Bureau, Ministry of Labour, Govt. of India. This index number is as applicable on the first working day of the month, four months prior to the date of delivery.

This index number is as applicable on the first working day of the month, four months prior to the date of delivery.

Base date: First working day of month, one month prior to the actual date of opening of Techno-Commercial Bid of tender.

The date of delivery (i.e. date of readiness of material) is to be considered as per clause no. 1.10 of Section – I (Instruction to bidders)

NOTES :

- a) All prices of raw material considered for arriving at the index number for insulators are exclusive of Modvatable excise duty and exclusive of any other central, state or local taxes, octroi etc.
- b) All prices as on 1st working day of calendar month.
- c) The details of the prices considered are as under :
 - 1) The prices of electrolytic high grade Zn (in Rs./MT) is ex-works price as quoted by primary producer of Zn.
 - 2) The prices of ball clay (in Rs./Kg) is the average price of "N-1" type ball clay as quoted by the two manufacturer.
 - 3) The wholesale price index for fuel, power, light & lubricants, basic metals, alloys and metal products and wood and wood products are as published by the office of the Economic Advisor, Ministry of Industry, Govt. of India, New Delhi with base 1993-94=100. These wholesale price indices are being published weekly on provisional basis. However, the same get finalized after eight weeks and are normally available after two months. Therefore, we are considering in our calculations these final indices published by Economical Advisor for the Saturday of the Month, two month prior to the date of which the price of ball clay and Zn is considered. For example for calculating index number for insulators on 1st working day of month of Oct., the basic price of Zn and ball clay are to be considered as on 1st working day of Oct., and the wholesale price indices for fuel, power, light and lubricant, basic metal, alloy and metal products and wood and wood products are to be considered as published by economic adviser for the first week ending Saturday of the month of August.

JODHPUR VIDYUT VITRAN NIGAM LIMITED**A Govt. of Rajasthan Undertaking****Prescribed technical specification for supply of**

(Name of Material/Equipment/Machinery/T&P etc.)

Unless otherwise specified elsewhere in this specification, the rating as well as performance and testing of the isolators shall conform to the latest revisions and amendments of the following standards available at the time of placement of order.

| S.No. | Technical specification which material/equipment/Machinery/T&P shall confirm | Name of IS/other standard specification to which material should confirm | Other particulars if any. |
|-------|--|--|---------------------------|
| 1. | Alternating current isolators (disconnectors) and Earthing switches. | IS:9921 /1985 | |
| 2. | -do- | IEC: 60129, 62271-102of 2003 | |
| 3. | Insulators. | IS: 2544/1973 | |
| 4. | Outdoor cylindrical post (Pt.III/1971) insulators | IS: 5350 | |
| 5. | Recommended practice for hot dip galvanizing of iron and steel. | IS:2629/1985 | |
| 6. | Hot dip galvanization coating on structural steel. | IS:4759/1996 | |
| 7. | Method of testing uniformity of coating on Zinc coated articles. | IS: 2633/1986 | |
| 8. | Electroplated coatings of zinc on iron and steel. | IS: 1573/1986 | |
| 9. | Spring washers. | IS: 6735/994 | |
| 10. | Plain washers. | IS: 2016/1967 | |
| 11. | Electrical power connectors. (Terminal connectors) | IS: 5561/1970 | |
| 12. | Indian Electricity Rules. | IS: 5561/1970 | |
| 13. | Recommended practice for silver plating. | IS: 9530/1980 | |
| 14. | Testing of silver plating thickness | BS: 2816/1964 | |
| 15. | Recommended practice for silver plating for general engineering purposes. | IS: 5925/1970 | |

Certified that we agree to all the aforesaid technical specification except at S.No..... for which our technical specification shall be as under:-

| S.No. which material/equipment/ Machinery/T&P shall confirm confirm | Technical specification | Name of IS/other standard specification to which material should confirm | Other particulars to if any. |
|--|-------------------------|---|---------------------------------|
|--|-------------------------|---|---------------------------------|

(Signature)
Name & Designation
with seal of the bidder.

TN-1287

ITEM: 11 KV, 400 Amp Isolators with Post Insulator without Earth Blade**PRE-QUALIFICATION REQUIREMENT**

The bidder should fulfill following qualification requirements for successful participating in the bid along with relevant documentary evidence supporting each qualifying requirement without which the offer shall be considered non responsive & rejected.

1.0 Status of bidder:

a) The bidder should be manufacturer of offered item. The offers from authorized dealer/ sole selling agent/sole distributor shall not be entertained.

b) Old / new Suppliers:- Any bidder located within or outside the state of Rajasthan has participated for the first time in a particular Discom & meeting minimum qualification requirement and has supplied the tendered material/or of higher rating in other utility shall be treated as an old supplier. Rajasthan's firms although supplied in past but not meeting minimum quantity supplied criterion including altogether new units which have not supplied any quantity but having adequate & required manufacturing and testing facility and technical know-how of the tendered material shall be considered as new firms and would be eligible for trial order only. In case of supply made to the licensed power utility outside India, the C.A. certificate furnished by firm shall be considered.

2.0 Past supply and performance criteria:

The bidder shall meet both past supply and performance criteria as detailed below for opening of bids.

2.01) PAST SUPPLY

2.01.1 The bidder is required to quote for minimum **10%** of tendered quantity failing which their offer may be considered Non-Responsive.

2.01.2 The bidder should have designed, manufactured / fabricated, tested and supplied to utility / Discoms / Govt. Departments at least 2 X QQ (QQ being the quoted quantity) of similar item / higher rating of tendered material / equipment in last 3 financial years from the date of opening of technical-commercial bid.

Note: Requirement of quantity manufactured, minimum quantity to be offered and amount of Bank Guarantee to be furnished in absence of test certificate shall be reduced to 25% for Rajasthan based units.

2.01.3 In support of fulfillment of the past supply criteria, the bidder shall furnish documentary evidence in the form of certificate from Chartered Accountant in the enclosed prescribed proforma only. This prescribed proforma should be furnished either in original or copy duly attested by Notary. The bidder shall also sign and affix seal on the C.A. Certificate. The certificate should have membership number with the name & address of the chartered accountant. Certificate should clearly indicate the quantity supplied, period of supply, voltage Class, Rating of the Transformer etc. in the format prescribed, any deviation to format or information diverted format, will not be considered and rejected.

Note:-The material supplied and accepted for same/higher rating for Turnkey projects to a licensed power utility/Govt. shall be considered for the purpose of evaluating criteria. The certificate given by C.A. shall indicate above quantity separately.

3. PERFORMANCE CRITERIA

- (i) If a bidder could supply upto 50% of ordered quantity in previous bid upto date of opening of subsequent bid and scheduled delivery period expired, the bid of such bidder will not be opened in the Discom for that item.
- (ii) However, if the supplies have been completed for a quantity more than 50% but not completed upto date of opening of subsequent bid and scheduled delivery period expired, then quantity equal to the quantity pending in previous bid for that item shall be reduced from the subsequent bid quantity to be allocated to the bidder.

4. TYPE TEST CRITERIA

- a) The bidder shall furnish valid and authenticated type test certificate from a Govt. approved/ a Govt. recognized/ NABL accredited laboratory/ ILAC i.e. International Laboratory Accredited laboratory / ILAC i.e International Laboratory Accrediation Corporation (In case of foreign laboratory) of similar rating and design of tendered material. **The bid of the bidders be also considered for meeting the Type Test criterion if the bidder have the requisite type test conducted successfully on the samples selected from the 1st Lot supplied to JdVVNL against previous tenders and its report are available with the Nigam & furnish certified copy of such Type Test Reports with the bid or reference of order / tender be mentioned in Bid document for verification purpose .** Such type test certificates should not be older than **Five years** as on the date of bid opening. For this purpose date of conducting type tests will be considered.
- b) The type test certificates by in house laboratory of bidding firm even if it is a Govt approved/ Govt recognized/ NABL accredited Laboratory / ILAC accredited, shall not be accepted, in case of their own bid. This will not apply if bidding firm is Govt. Company/ Public Sector Undertaking.
- c) The bidder should furnish documentary evidence in support of the laboratory whose type test have been furnished, that the said laboratory is a Govt. / a Govt. approved / a Govt. recognized / NABL accredited laboratory / ILAC accredited (in case of foreign laboratory).
- d) The type test certificates shall be furnished either in original or duly attested by notary.
- e) The bids of only those bidders shall be considered to be meeting the type test criteria who furnishes complete type test certificates with the bid as per above provision.
- f) However, in following cases the Bidder is not in a position to furnish Type Test Certificate as mentioned above, the bid of the bidder may be considered meeting the type test criteria if the bidder furnishes an undertaking stating that valid type test certificate from a Govt. approved / Govt. recognized / NABL Accredited laboratory / ILAC Accredited laboratory shall be furnished from first lot received in Nigam store (without asking any delivery extension) along with bank guarantee with the technical bid from a Nationalized / Scheduled Bank in prescribed proforma at Schedule-III C or DD / Pay Order amounting to Rs. 5,00,000/- (Five Lac Only) . The initial validity of bank guarantee shall be nine months with claim period of three months in addition**
- i) **Where a new Rajasthan based firm is participating & is technically competent.**
- ii) **Where one or more type test(s) is/ are older than 5 years.**
- iii) **Where Rajasthan/out side Rajasthan firm furnishes requisite type test report of higher rating material.**

5. POOR RECORD OF PERFORMANCE AND DELIVERY

The bidders who have been black listed or with whom business relations have been severed in any of the State Discom shall not be considered. Severment of business relations will be done in case of following circumstances for the period and with the recovery mentioned against each.

| | |
|--|--|
| (i) When vendor does not accept order awarded on its accepted prices and terms and conditions and does not comply with contractual formalities | Forfeiture of EMD/cancellation of vendor registration to recover amount of EMD along with severment of business relations for three years from the date of issue of order. |
| When vendor complies with contractual formalities but does not commence supplies | Levy of maximum recovery on account of delay in delivery along with severment of relation for a period of two years from the date of issue of order or in next two bids whichever is later along with forfeiture of EMD/cancellation of vendor registration. |

6. BLACK LISTING

After having given Show Cause Notice of 30 days, and having established & cogent reasons for blacklisting of the firm as given below, the firm should immediately be blacklisted for a period of 5 years indicating reasons of doing so, in the letter itself, and a copy of such blacklisting should be given to the firm, with the approval of CLPC:-

(i) There are sufficient and strong reasons to believe that the supplier or his employee has been guilty of malpractices such as manhandling/misbehavior with Government official by supplier or his partner/employee, bribery, corruption or abatement of such a offence in a position where he could corrupt Nigam’s official, fraud, vitiating fair tender process including substitution of or interpolation in tender, mis-representation, pilfer-aging or unauthorized use or disposal of Nigam’s material issued for specific work etc.

(ii) Where a supplier or his partner or his representative has been convicted by a court of Law for offences involving moral turpitude in relation to the business dealing or where security considerations including suspected disloyalty to the Nigam/state so warrant the blacklisting.

(iii) If the State Bureau of Investigation or any other authorized investigating agency recommends for blacklisting after completing the investigation.

Note: - 1 If a supplier after having tendered for a supply or after negotiations gives application voluntarily vitiating the fair tendering process, it shall also tantamount to malpractice.

Note:- 2 A register containing the reasons for blacklisting the supplier as also the names of all the partner of the suppliers and the allied concerns coming within the effective influence of the blacklisted supplier will be maintained.

Note: - 3 A register of black listed supplier will be maintained which will not only include suppliers enlisted with the Enlisting Authority but also black listed suppliers in Nigam.

Note :-4 A Black listed supplier (i) shall not be entitled for registration in any of the Discom (ii) shall not be awarded any supply order in future in any Discom during the notified period.(iii) his registration if any shall stand cancelled immediately and his registration security /EMD/S.D. shall stand forfeited. (iv) In case of blacklisting of the firm by any one of Discom for the cogent prescribed reason(s) as stipulated above, the same shall be applicable to all the three Discoms and as a consequence of blacklisting, all the pending orders to that firm, will be cancelled in all three

(3) Discoms with immediate effect. However in respect of completed/executed contract G.P. obligations as well as other liabilities shall be fulfilled by the supplier.

(B) Severment of Business relation:

(a) After having given Show Cause Notice of 30 days, and having established & cogent reasons for Severment of business relation as given below, the firm should immediately be severed the business relations for a period of 2 to 3 years indicating reasons of doing so, in the letter itself, and a copy of such severment should be given to the firm, with the approval of CLPC:-

(i) The supplier continuously refuses to pay Nigam dues without showing adequate reasons and where the purchasing authority is satisfied that no reasonable dispute attracting reference to Settlement Committee or Court of Law exists for the supplier's action of non-supply.

(ii) When vendor does not accept LOI/detailed purchase order awarded on its accepted prices and terms & conditions or does not comply with the contractual formalities.

(iii) When vendor/supplier who otherwise completed contractual formalities but does not commence supplies on the date of opening of technical bid of the fresh tender/completion of schedule delivery period whichever is later.

Note-1-In case supplier does not deposit outstanding dues towards Nigam, even after completion of severment period, the period of severment will continue.

2. Severment done purely/ mainly on account of non-deposition of dues against the supplier/vendor/contractor could be lifted by CLPC, if the dues are deposited prior to the expiry of such severment period.

3. Severment done by one Discom for non-supply of material and /or corresponding non-recovery of dues will not be effective in other Discoms except in respect of common purchase cases of three Discom.

4. On severment of business, the EMD/SD/vendor registration security will be forfeited.

5. The orders in execution satisfactorily will not be cancelled other than the order on which severment have been done.

(C) DEBARMENT

Reasons on which Debarment can be made:-

(i) The competent authority may debar the supplier on account of his performance or other disabilities, if it is no longer considered fit to remain under vendor registration as per his obligation under vendor registration.

(ii) If at any subsequent stage of inspection of firms after award of contract, it is found that firm does not have sufficient tech. staff or required/necessary technical equipments, the purchasing authority can debar the firm for one year or next tenders whichever is later. The debarment will be lifted only on re-inspection of firm's works; the defects noticed earlier are fully rectified to the satisfaction of Nigam.

(iii) When contract agreement executed and supplies commenced but could supply only up to 50% of ordered quantity and scheduled delivery period expired, then the firm can be debarred for one year or next tender whichever is later in that Discom only for that particular item/rating/capacity/size etc.

(iv) The suppliers who have been awarded contract for supply of material is not adhering to the periodic delivery schedule, the contract awarding authority reserve the right to terminate the contract and may debar the firm in participating in tender for a period of 2 to 3 years.

Note:-1. On debarment, the EMD/ SD/Vendor Registration security shall be forfeited.

Note:-. 2. If the firm is debarred in one Discom for any reasons then the same should not be applicable in other Discom subject to exception that in case of common Discoms purchases such debarment of a firm would be applicable to all three Discoms for that particular item and rating/capacity/size etc.

6.0 APPEALS AND APPLICATIONS:-

Appeal against the order of blacklisting, severment and debarment can be filed before BOD within a period of 3 months from the date of intimation. The letter of appeal will be addressed to the order placing authority. Who will process the case for placing the matter in B.O.D. with in a period 60 days. The BOD may reduce or waive the penalty, if sufficient reasons/supporting documents are furnished by the supplier.

GENERAL CONDITIONS : - (ALL CONDITIONS BE DULY SIGNED & SEALED)

- I) The bidder shall clearly indicate the deviations such as `Technical Deviation & Commercial Deviations' in the prescribed proforma only. The deviations indicated elsewhere in the bid shall not be accepted.
- II) The bidder must clearly fill up each and every particular of guaranteed technical particulars annexed with Technical Specifications otherwise he will be responsible for Technical Non-responsiveness.
- III) All documents required in the prescribed format are to be furnished along with the bid itself only except an attested copy of BIS license (wherever it is required), failing which the bid will be summarily rejected.
- IV) However, a copy of BIS License may be submitted by the bidder up to the official working hours of one working day prior to the schedule / notified date of opening of price bid.

BANK GUARANTEE IN LIEU OF FURNISHING OF TYPE TEST CERTIFICATE

(On Rajasthan Non-Judicial Stamp Paper worth Rs. 100/-)

To,

The Superintending Engineer (MM&C),
Jodhpur Vidyut Vitran Nigam Limited,
Jodhpur.

Dear Sir,

Whereas Jodhpur Vidyut Vitran Nigam Limited, Jodhpur (hereinafter called the Purchaser) has issued a tender enquiry under TN_____for procurement of _____(name of material).

Whereas M/s _____(hereinafter called the bidder) has furnished a bid for supply of _____to the Superintending Engineer(MM&C), Jodhpur Vidyut Vitran Nigam Limited, Jodhpur.

Whereas in accordance with the provision of the specification of the aforesaid TN_____, the bidder can deposit a bank guarantee in lieu of the requirement of furnishing the type test certificates.

Whereas M/s_____(the bidder) have requested us (Name of the Bank) to furnish the bank guarantee, in lieu of the type test certificate, for an amount equivalent to Rs._____(in words also) only.

Under this Bank Guarantee, we (Name of the Bank) hereby undertake unconditionally and irrevocably to guarantee as primary obligator and not as Surety merely, the payment to the purchaser on his first demand without whatsoever right of objection on our part and without his first claim to the bidder, in the amount not exceeding (amount of guarantee in figures and words).

Payment pursuant to this undertaking will be demanded by the purchaser from the Bank and will be met by the Bank without question in the case in which the bidder, on receipt of the order and/or after the acceptance of this tender, makes default in furnishing the required type test certificates as to whether the occasion or ground has arisen for such demand the decision of the Superintending Engineer(MM&C), Jodhpur Vidyut Vitran Nigam Limited, Jodhpur shall be final.

The liability of the Bank shall not at any time exceed Rs._____(Rupees_____).

The undertaking will be determined on but will not withstanding such determination, continue to be in force till the expiry of 3 months from that date.

No indulgence or grant of time by the purchaser to the bidder without the acknowledgement of the Bank will discharge the liabilities of the Bank under this guarantee.

The guarantee herein contained shall not be affected by any change in the constitution of the bidder.

All disputes arising under the said guarantee between the Bank and the bidder or between the bidder and the purchaser pertaining to the guarantee shall be subject to the jurisdiction of Courts only at Jodhpur in Rajasthan.

The Bank further undertake not to revoke this guarantee during its currency except with the previous consent of the Superintending Engineer(MM&C), Jodhpur Vidyut Vitran Nigam Limited, Jodhpur.

Notwithstanding anything contained herein before, the Bank's liability under this guarantee i.e. restricted to Rs._____ (Rupees _____) and the guarantee shall remain in force within three months from that date, the Bank shall be released and discharged from all liabilities there under. However, the validity of the bank guarantee shall be extended as and when required by the purchaser.

IN WITNESS WHEREOF THE Bank has executed these presents the day ____ month ____ and year _____.

Yours faithfully,

(Bankers)
EXECUTANT

Witnesses:

- 1.
- 2.

TN-1287

ITEM- 11KV,400 AMP ISOLATORS WITH POST INSULATORS WITHOUT EARTH BLADE

Must be filled in by the tenderer and attached with Technical Bid (Part-I)

To,
The Superintending Engineer (MM&C),
Jodhpur Vidyut Vitran Nigam Limited,
Jodhpur.

Dear Sir,

With reference to your invitation to tender against specification No. JUD/SE/MM&C/TN-1287, we agree to supply the following quantity:

| S. No. | Particulars of Items | Tendered Quantity | Qty. Offered | Justification of quantity offered a per Qualifying Requirement | Status of Type Test Certificates |
|--------|--|-------------------|--------------|--|----------------------------------|
| 1. | 2. | 3. | 4. | 5. | 6. |
| 1 | 11KV, 400 Amp Isolators With Post Insulators Without E.B | 9435 Sets | | | |
| 2 | 24KV Post Insulator one extra spare with each set | 9435Nos | | | |

- The offer is valid for a period of 120 days after the date of opening of this tender.
- The prices are variable with base date as on first working day of month, one month prior to the date of opening of tender.
- It is noted that the quantity as mentioned in the specification are approximate and we agree to supply any quantity as per your requirement.
- The delivery shall strictly be in accordance with our delivery schedule as given in Schedule-VIII of this specification. In case we fail to deliver the materials as indicated in the clause No.1.23 of GCC (Schedule-II), we are liable to pay recovery for delay in delivery as per clause No.1.24 of this Schedule-II of this specification.
The material shall conform to your specification No. JUD/SE/MM&C/TN-1287 and as per relevant ISS in all respect.
- We conform that we agree to all the terms & conditions as well as the technical stipulation of your specification No. JUD/SE/MM&C/TN-1287 and there are no deviations other than as specified in the Schedule-VI (A & B).

Yours faithfully,

**Signature of tenderer with stamp
Dated.**

JODHPUR VIDYUT VITRAN NIGAM LIMITED

A Govt. of Rajasthan Undertaking

Statement of guaranteed technical particulars and other performance data for supply of
..... (Name of material) against specification
no.....

S.No. Particulars of technical & other performance data guaranteed.

Certified that we agree to all the aforesaid technical particulars and other performance data except following :-

| S.No. | Particulars of technical & other Performance data | Reasons for deviations/departure. |
|-------|---|-----------------------------------|
|-------|---|-----------------------------------|

(Signature)
Name & Designation
with seal of the bidder

GUARANTEED TECHNICAL PARTICULARS FOR 11KV, 400 AMP ISOLATORS WITH POST INSULATORS WITHOUT EARTH BLADE AGAINST TN-1287

(Strike out which is not applicable)

| S.No. | Particulars | 11KV ISOLATORS |
|-------|--|----------------|
| 1 | Manufacturer's Type/Designation/Installation | |
| 2 | Manufacturer's Name and Country of Manufacture | |
| 3 | Standard(s) according to which the isolators are manufactured | |
| 4 | Maximum design voltage at which the isolator can operate (kV) | |
| 5 | Rated Frequency (Hz) | |
| 6 | Rated Voltage (KV) | |
| 7 | Max. current that can be safely interrupted by the isolator | |
| | i) Inductive (A & % PF) | |
| | ii) Capacitive (A & % PF) | |
| 8 | Continuous current rating | |
| | i) Nominal (Amps) | |
| | ii) Under site conditions (Amps) | |
| 9 | Rated short time withstand current | |
| | i) For 3 seconds (KA rms) | |
| | ii) For 1 second (KA rms) | |
| | iii) Rated peak withstand current (kAp) | |
| 10 | Mile Volt drop test voltage between : | |
| | i) Contacts | |
| | ii) Terminals of each phase | |
| 11 | Current density at the minimum cross-section of: | |
| | a) Moving blade (Amps/Sq.mm.) | |
| | b) Terminal pad (Amps/sq.mm.) | |
| | c) Male Contacts (Amps/sq.mm.) | |
| | d) Female Contacts (Amps/sq.mm.) | |
| | e) Terminal Connector (Amp/sq.mm) | |

| S.No. | Particulars | 11KV ISOLATORS |
|-------|---|----------------|
| 12 | Max. temp. rise of following current carrying parts when carrying rated current continuously (deg.C) over an ambient of 50 deg.C instead of 40 deg.C mentioned in relevant IS. | |
| | i) Moving blades | |
| | ii) Contacts with silver plating | |
| | iii) Terminal pad. | |
| | iv) Bi-metallic terminal connector | |
| | v) Springs | |
| 13 | Class (outdoor or indoor) | |
| 14 | Derating factor for specified site conditions | |
| 15 | 15) Insulation levels | |
| | i) Lightning Impulse withstand voltage (kV peak) | |
| | a) Phases to Earth | |
| | b) Isolating Distance | |
| | ii) Power frequency withstand voltage (kVrms) | |
| | a) Phases to Earth | |
| | b) Isolating Distance | |
| 16 | Minimum clearance in air (mm): | |
| | i) When switch is closed: | |
| | a) Between adjacent poles of different phases (centre to centre) | |
| | b) Between live parts and earth | |
| | ii) When switch is open: | |
| | a) Between poles of same phase (centre to centre) | |
| | b) Between adjacent poles of different phases (centre to centre) | |
| 17 | Design and Construction | |
| | i) No. of insulators per pole | |
| | ii) No. of breaks per pole | |
| | iii) Type of closing/opening mechanism (Horizontal/Vertical break straight etc.) | |
| | iv) Contacts (Male): | |
| | a) Material and grade | |
| | b) Dimensions & Cross-sectional area in sq.mm. | |
| | v) Contacts(Female): | |
| | a) Material and grade | |
| | b) Dimensions & Cross-sectional area in sq.mm. | |
| | vi) Moving Blades: | |
| | a) Material and grade | |
| | b) Dimensions & Cross-sectional area in sq.mm. | |

| | | |
|--|--|--|
| | vii) Terminal pad: | |
| | a) Material and grade | |
| | b) Dimensions & Cross-sectional area in sq.mm. | |
| | viii) Arching horns : | |
| | a) Material and grade | |
| | b) Dimensions & Cross-sectional area in sq.mm. | |
| | ix Springs | |
| | a) Material and grade | |
| | b) Dimensions & Cross-sectional area in sq.mm. | |
| | x) Contact Support: | |
| | a) Material, size and length of plate | |
| | b) Material and size of plate | |
| | xi) Rain hood - Material grade and size | |
| | xii) Nuts and Bolts | |
| | a) Size, material and grade in live parts | |
| | b) Size, material and grade in other parts | |
| | xiii) Insulator base plate | |
| | Material and size & min. thickness of plate below insulators. | |
| | xiv) Bearings: | |
| | a) Make, Type and No. of bearings | |
| | for: | |
| | i) Rotating insulator base assembly | |
| | ii) Operating mechanism | |
| | iii) Whether lubricating nipple is provided | |
| | b) Make, and size of bearing housing | |
| | xv) Size of GI pipes (medium class) used for : | |
| | a) Down operating pipe (mm) | |

| | | |
|--|---|--|
| | b) Connecting pipe for same phase (mm) | |
| | c) Connecting Pipe for adjacent poles(mm) | |
| | xvii) Tandem pipe | |
| | a) Size class and No. of pipes | |
| | b) Size of shackle, screw | |
| | c) No. of bearings/bush and its material and size. | |
| | xvii) Type of interlock | |
| | xviii) Type of universal/swived joint | |
| | a) Between bearing and down pipe | |
| | b) Between down pipe and operating mechanism | |
| | xix) Insulators | |
| | a) Type. | |
| | b) No. of units per insulator | |
| | c) Rating of insulators(KV) | |
| | d) Height of each insulator stack (mm) | |
| | e) Bolt circle diameter(mm) | |
| | f) Tensile strength (kg). | |
| | g) Compressive strength(Kg.) | |
| | h) Torsional strength (kg.m.) | |
| | i) Cantilever strength upright | |
| | j) Power frequency dry flash- over voltage (KV) rms. | |
| | k) Power frequency wet flash-over voltage(KV) rms. | |
| | l) Impulse flash-over voltage(positive wave) (KV) peak. | |
| | m) Impulse withstand voltage (kv) peak | |
| | n) Power frequency puncture voltage (KV) rms. | |
| | o) Visual discharge voltage level (KV) rms. | |
| | p) Creepage distance : Total(mm) | |
| | Protected(mm) | |
| | q) Dry arcing distance (mm) | |
| | xx) Base: | |
| | a) Size ,Nos. & length of steel sections used | |
| | b) Overall size(mm) | |
| | c) Total weight (Kgs) | |
| | xxi) Terminal Connectors: | |
| | a) Clamp Body: | |
| | i) Alloy Composition | |
| | ii) Plating if any | |
| | iii) Dimension | |

| | | | |
|-------------|--|-----------|-----------------------------|
| | iv)Area at min. crosssection (mmsq) | | |
| | b) Bolts and nuts size | | |
| | i) Alloy composition | | |
| | ii) Tensile strength | | |
| | c) Type of washers used | | |
| | d) Materials of braids | | |
| | e) Temperature rise when carrying rated current at 50 deg.C ambient (deg.C) | | |
| | f) Weight of each type of clamp (Kg.) | | |
| 18 | Mass of isolator hardware in Kg. | | |
| | A) Without earth blade | | |
| 19 | Type of contacts | | |
| | | | |
| 20 | Nuts & Bolts | | |
| | a) Size, material & grade in live parts | | |
| | b) Terminal connectors. | | |
| | c) Other parts. | | |
| 21 | Locking arrangement of Isolators and earth switch operating mechanism | | |
| 22 | Whether isolator hardware is complete with all accessories | | |
| 23 | Details of type test reports furnished: | | |
| | Item | IS | Type Test report No. |
| | Testing authority & date | | |
| i) | Isolator | | |
| ii) | Terminal Connector | | |
| iii) | Degree of Protection | | |
| 24 | List of brought out items | | |
| 25 | List of drawing furnished | | |
| 26 | Marking | | |

Name of bidder:-
Signature & seal of bidder with designation

JODHPUR VIDYUT VITRAN NIGAM LIMITED
A Govt. of Rajasthan Undertaking
DEPARTURE/DEVIATION FROM TECHNICAL SPECIFICATION

The bidder shall state under this schedule the departure from the Purchaser's specification in respect of technical is as under:-

| S.No. | Main Deviations from Technical Specification. |
|-------|---|
|-------|---|

Certified that we agree to all the technical specification of the NIT except for the deviation to the extent indicated above.

(Signature)
Name & Designation
with seal of the bidder.

JODHPUR VIDYUT VITRAN NIGAM LIMITED

A Govt. of Rajasthan Undertaking

DEPARTURE FROM COMMERCIAL TERMS & CONDITIONS OF THE SPECIFICATION

The bidder shall state under this schedule the departure from the Purchaser's specification in respect of Commercial terms & conditions:-

| S.No. | Main Deviations from Specification. |
|-------|-------------------------------------|
|-------|-------------------------------------|

Certified that we agree to all the commercial terms & conditions as laid down in General Conditions of Contract to the specification except for the deviation to the extent indicated above.

(Signature)
Name & Designation
with seal of the bidder.

JODHPUR VIDYUT VITRAN NIGAM LIMITED**A Govt. of Rajasthan Undertaking****LIST OF PAST SUPPLIES**

The bidder shall state under this schedule whether material and equipments, similar to those offered in the tender have been previously supplied by him. A list shall be given of such orders executed by him together with information regarding the names of purchasing organizations, quantities supplied and when the supplies were effected. This list should be in form given below:-

| S.No. | Detailed particulars of items supplied | Qty in nos. | Order No. & Date | Name & details of purchasing authority | Date of Completion |
|-------|--|-------------|------------------|--|--------------------|
| 1 | 2 | 3 | 4 | 5 | 6 |

| If executed partially mentioned (M.T.) | whether still to be executed | Delivery stipulated in order | Remarks to be (Qty. in |
|--|------------------------------|------------------------------|------------------------|
| 7 | 8 | 9 | 10 |

Note: Separate schedules are to be furnished by the bidder for past supply to the JdVVNL, Jodhpur the State Electricity Boards and other Departments /Organisations.

(**Signature**)
Name & Designation
with seal of the bidder.

TO WHOMSOEVER IT MAY CONCERN

This is to certify that M/s. _____ (Complete with address) have manufactured and supplied the goods/ equipments/ material during the following financial year(s) to the Electrical Utilities/ Government Departments/ Discoms/ SEBs as detailed out below:

| S. No | Financial year in which material supplied | Detailed particulars of item(s) supplied | Name & particulars of purchasing authority | Order No. & Date against which item(s) supplied | Unit | Ordered | | Actual Supplied Up to | | Remarks |
|-------|---|--|--|---|------|---------|-------------|-----------------------|-------------|---------|
| | | | | | | Qty | Value (Rs.) | Qty | Value (Rs.) | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Signature

Signature of C.A.

Name & Designation
With Seal of the Bidder
Date _____
Place _____

Name:
Address

Membership No.

The above particulars are true and correct based on explanations, records and books of accounts produced before us. Further the above certificate issued on the request of the company.

CA Firm(_____)

JODHPUR VIDYUT VITRAN NIGAM LIMITED

A Govt. of Rajasthan Undertaking

DELIVERY SCHEDULE

PART-A

The delivery schedule of the material by the Purchase Officer is as mentioned hereunder:-

| S.No. | Particular of material | Commencement period | Rate of supply per month | Period for completion of delivery of entire material |
|--------------|--|---|---------------------------------|---|
| 1. | 11 KV 400 Amp. Isolators With Post Insulators Without E.B. | 30 days after receipt of Purchase order | | Five months after commencement Period |

PART-B

In case bidder deviates from the delivery schedule mentioned by the purchaser in Part-A then the delivery schedule shall be indicated/mentioned by the bidder as under:-

| S.No. | Particular of material | Commencement period | Rate of supply per month | Period for completion of delivery of entire material |
|--------------|-------------------------------|----------------------------|---------------------------------|---|
| | | | | |

- Note:** 1. During the commencement period the process of model assembly and submission of B.O.M. for approval shall be got completed.
2. During the commencement period the contractual formalities shall be got completed.

(Signature)
Name & Designation
with seal of the bidder.

Schedule – IX**JODHPUR VIDYUT VITRAN NIGAM LIMITED****A Govt. of Rajasthan Undertaking**

List of Equipments and Technical Hands Available with the Firm

(To be filled in by the bidders & enclosed with the bid)

Manufacturers and / or their authorized agents who are quoting against this bid are requested to furnish the following information along-with the bid. The Purchaser will have the discretion to ignore the bid without the under noted particulars and/or ignore the bid particulars.

1. Name and Address of Manufacturer.
2. Place where works exist.
3. Details of machinery particularly with B.H.P. of each item installed.
4. Details of staff employed in the works.
5. Date when started the manufacturing of item under reference.
6. List of items manufactured.
7. Literature and drawings of items manufactured showing their description, size, design and other important technical particulars.
8. Details of order so far, executed along with the names of organization to whom supplied.
9. Manufacturing capacity.
10. Is the workshop open for inspection by the representative of the board, if required?
11. Statement of financial resources and Banking Reference along with Balance-Sheet for previous two years.
12. Testing facilities available for the manufactured articles in the testing laboratory of works.
13. Whether the Firm is a small/medium/large scale industry.
14. Registration No. with :-
 - i. Small Scale, National/State.
 - ii. DGTD
 - iii. State Industries Department.

(Signature)Name & Designation
with seal of the bidder.