

**JAIPUR VIDYUT VITARAN NIGAM LIMITED
OFFICE OF THE SUPERINTENDING ENGINEER (PROC)
OLD POWER HOUSE PREMISES, NEAR RAM MANDIR, BANIPARK, JAIPUR-6
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**SPECIFICATION FOR SUPPLY OF 33 KV PIN INSULATORS AGAINST TENDER NOTICE
NO. JPD/SE(Proc)/SPO.III/TN- 4328**

Last Date & time of receipt of tenders	08.03.2011 upto 2:30 PM
Date & time of opening of tenders	08.03.2011 at 3:00 PM
Cost of Specification	Rs. 2,500.00 (Rs. Two thousand Five Hundred only)
Validity	120 days from the next date of opening of techno-commercial bids.
Earnest Money	Rs. 2,00,000.00 (Rs. Two lac only) / Exemption Certificate / Vendor Registration Of Class " C" Category.
Tendered Quantity	78,273 Nos.

NOTE : The bidders are advised to go through the complete specification carefully before filing the bid in their own interest.

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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 JVVNL website www.jaipurdiscom.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 (Proc.), Jaipur Discom, Jaipur then the copy available with Superintending Engineer (Proc.), Jaipur Discom, Jaipur will be considered as final document for all purpose. The cost of Bid document as published in NIT shall be furnished along with downloaded bid document in the manner prescribed in bid document.

TECHNICAL SPECIFICATION AND OTHER REQUIREMENT FOR 33KV PIN INSULATORS

3.0 SCOPE :

This specification covers the design, manufacture, testing, supply and delivery of 33 KV Pin Insulators for use of 33 KV over head power lines in Rajasthan.

3.01 The 33 KV Pin Insulator shall be brown glazed porcelain and shall have minimum failing load of 10 KN.

3.02 The 33 KV Pin insulator shall comply in all respects with the IS:731/1971 (With latest amendments).

3.03 The insulator marked with ISI certification mark will be given preference.

3.04 GENERAL REQUIREMENT :

a) The porcelain should be sound, free from defects thoroughly vitrified and smoothly glazed.

b) The glaze of the insulators shall be brown in colour. The glaze shall cover all the porcelain parts of the insulators except those which serve as supports during fixing or are used for the purpose of assembly.

c) The design of the insulator shall be such that the stresses due to expansion and contraction in any part of the insulator shall not lead to deterioration. The porcelain shall not engage directly with hard metal.

d) Cement used in the construction of the insulator shall not cause fracture by expansion or loosening by contraction and proper care shall be taken to locate the individual parts correctly during cementing. The cement shall not give rise to chemical reaction with metal fitting and its thickness shall be uniform as possible.

3.05 THIMBLES :

The insulators shall suitably be provided with cemented in zinc or lead thimbles.

3.06 FAILING LOAD :

The 33 KV Pin Insulator shall have a minimum failing load of 10 KN.

3.07 CREEPAGE DISTANCE :

The 33 KV pin insulators must have a minimum creepage distance of 580 mm.

3.08 TEST VOLTAGE :

The test voltage for 33 KV Pin Insulators shall be as under :

	33 KV

a) Highest system voltage. (KV rms)	36
b) Wet power frequency withstand test. (KV rms)	75
c) Power frequency puncture withstand test. (KV rms)	180
d) Impulse voltage withstand test (KV peak).	170

3.09 THREADS :

The 33 KV Pin Insulators with cemented in thimbles shall have the threads suitable for use with large & small steel head galvanised M.S. Forged Pins covered under ISS:2486 (with its latest amendments if any).

3.10 MARKING :

Each insulators shall be legibly and indelibly marked to show the following :

- a) Name or trade mark of the manufacturer
- b) Month and year of manufacture.
- c) Minimum failing load in KNewton.

Marking on porcelain shall be originated and shall be applied before firing.

3.11 DRAWING:

The bidder shall submit detailed drawing showing design and dimensions. The type of material used for various parts shall be clearly specified on the drawing.

3.12 TESTS :

3.12.1 TESTS BEFORE DESPATCH :

The material shall be subjected at manufacturer's works before dispatch to the routine & acceptance tests given here-under as per IS:731/1971 (latest amended).

3.12.2 ROUTINE TESTS :

These tests are to be carried out to check various requirements of Pin insulators which are likely to vary during production. The following tests shall be conducted / carried out on each insulator by the bidder at his works as per relevant IS:731/1971 (Latest amended) and he should furnish certificate / record thereof during pre-dispatch inspection:-

- i) Visual Examination (clause 10.13)
- ii) Electrical Routine Test (clause 10.15)

3.12.3 ACCEPTANCE TESTS :

These tests shall be carried out on the samples taken from the lot for the purpose of the acceptance of lot which are to be conducted as per relevant IS:731/1971 (latest amended) :

- i) Verification of dimensions (Clause 10.5)
- ii) Temperature Cycle test (Clause 10.6)
- iii) Mechanical Failing Load test (Clause 10.8)
- iv) Puncture test (Clause 10.10)
- v) Porosity Test (Clause 10.11)

3.12.4 Additional acceptance test- Insulation resistance test

In addition to acceptance test as per clause no.3.13.3, insulation resistance test shall also be conducted on the samples. For carrying out test, the sampling procedure given in appendix C of IS:731/1971 (2nd revision) shall be followed.

The procedure for carrying out this test shall be as under:

- (a) Clean insulator and dry properly, then meggar the insulator with 2.5 KV/ 5 KV meggar.
- (b) IR value so measured should not be less than 1000 (one thousand) mega ohms. The testing and criteria for conformity shall be as applicable to puncture test.

3.13 TYPE TESTS:- The type tests to be conducted on each type of insulator as per relevant IS:731/1971 (latest amended). The following tests shall constitute the type tests:

- a) Visual examination.(Cl.10.13)
- b) Verification of dimensions.(Cl.10.5)
- c) Visible discharge test.(Cl.10.2)
- d) Impulse voltage withstand test.(Cl.10.3)
- e) Wet power frequency voltage withstand test.(Cl.10.4)
- f) Temperature cycle test.(Cl.10.6)
- g) Mechanical failing load test.(Cl.10.8)
- h) Puncture test.(Cl.10.10)
- i) Porosity test.(Cl.10.11)

The above tests should be carried out on the samples in the order mentioned in relevant IS:731/1971 (latest amended).

3.14 TYPE TEST ON SAMPLES SELECTED FROM MATERIAL RECEIVED IN STORES FROM 1st OFFERED LOT :

3.14.1 The first lot offered shall not be less than 10 % of the ordered qty or 5000 Nos. 33 KV Pin Insulators whichever is less.

3.14.2 If the bidder has already got conducted the requisite type test from the first lot of material received in Nigam's store against any previous / earlier tender of JVVNL and such Type Test reports are valid i.e not older than 3 years on the date of opening of Techno-Commercial Bids, then the requirement of conducting Mandatory Type Test on the sample selected from 1st Lot of supply received in Nigam's store is **RELAXED**. For this purpose date of conducting type test will be considered.

ALTERNATIVELY

In case the bidder do not meet above requirement than two sample of 33 KV Pin Insulator from the 1st lot of received in purchaser's store shall be selected and sealed in the presence of representative of supplier for getting it Type Tested at Govt. / Govt. approved / Govt. recognized / NABL accredited Laboratory / ILAC Accredited.

However, suppliers own lab shall not be considered for the purpose of type test reports. The selected and sealed sample for type test shall be identified by providing **Polycarbonate seals**. The transportation charges of sample 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 of Test House. The name of the test house shall be intimated separately..

3.14.3 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.

3.14.4 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 .

3.15 SAMPLING :

The sampling procedure as laid down in IS:731/1971 with latest amended shall be followed for carrying out specified acceptance tests.

3.16 TOLERANCE ON DIMENSIONS / TEST RESULTS : As per IS:731/1971 (latest amended).

3.17 TESTS AT SITE :

The purchaser reserves the right to conduct all tests on each type of insulator after arrival at site and bidder shall guarantee test certificates figures under actual service conditions.

3.18 TESTING FACILITIES :

The bidder must indicate clearly about the various testing facilities for conducting various acceptance tests as well as routine tests as per relevant ISS as available at his works. In case no testing facilities are available at the bidder's works, particulars of the place where such testing is proposed to be conducted during course of inspection must be indicated.

3.19 INSPECTION :

3.19.1 All the routine /acceptance tests as mentioned above for pre-dispatch inspection shall be conducted at the place of manufacturer unless otherwise especially agreed upon by the bidder and purchaser at the time of purchase. The bidder 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.

3.19.2 The inspection may also be carried out by the purchaser at any stage of manufacture / before dispatch as per relevant standard.

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

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

3.19.5 The bidder shall give 15 days advance intimation to enable the purchaser to depute his representative for witnessing the acceptance and routine tests. The inspection charges would be to the purchaser's account.

3.20 PACKING :

All insulators shall be packed in suitable crates or boxes so as to withstand rough handling of packing. The packing details shall be given in schedule-V (GTP).

3.21 GUARANTEED TECHNICAL AND OTHER PARTICULARS :

The full guaranteed technical and other particulars shall be given in the proforma given in Schedule-V. Any deviation from the specifications referred to above shall be supported by adequate justification.

3.22 PRICES & PRICE VARIATION :

a) The prices shall be quoted in Rs. per unit on F.O.R. destination basis in the manner detailed in schedule of Prices(Schedule-IV) 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 given in this specification at Schedule-II without any ceiling. The base date of price variation shall be 1.02.2011 and shall be governed as per clause No.1.10. of Instructions 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.

3.23 DELIVERY SCHEDULE

The delivery of quoted quantity should be completed in **Six months** period including commencement period of **maximum 30 days at equal monthly rate**. In case ordered quantity is different than quantity monthly delivery shall be adjusted proportionately. Bids in which monthly delivery schedule is not indicated shall be ignored.

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

3.24 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 :

3.24.1 SAMPLING

One sample out of each sub-lot / lot consisting of 1000 Nos. or part thereof from each inspected lot received in stores shall be selected from each store for test checking of material and shall be got tested.

The sample selection shall be done as soon as the material is received in stores, without calling the representative of supplier. However, testing at CTL or else where as arranged by NIGAM shall be done in the presence of representative of supplier after identification/ confirmation by the supplier's representative that sample(s) so selected belong to them.

3.24.2 TESTS

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

- a) Visual examination, verification of dimensions, creepage distance etc,
- b) Mechanical failing Load Test
- c) Porosity test
- d) Puncture Test

Testing of the material shall be got done at the test laboratory of the Nigam i.e. at CTL in the presence of the representative of the supplier. **Only those test shall be conducted at CTL for which facility with CTL is available.**

- i) For witnessing of the testing, clear 7 days notice shall be given to the supplier stating date, time & place where the test is to be conducted. The testing shall be started after identification / confirmation of sample by the representative of the supplier that sample selected for testing pertain from the lot supplied by them. In case the supplier does not attend for witnessing the testing, the testing shall be proceeded and completed and action be taken as per the contract.
- ii) The CTL shall send copies of test reports to the purchaser, consignees and the supplier.

3.24.3 CRITERIA FOR ACCEPTANCE

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

3.24.4 TEST CHARGES :

All test charges incurred towards test checking of the material received in our stores shall be borne by the NIGAM.

3.24.5 PAYMENT :

The Payment shall be governed in accordance with the clause No. 1.42 of GCC with the following modifications :-

A) If bidder have submitted valid type test reports with bid:

The 100% payment shall be released after receipt of successful test reports from CTL 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.

B) If bidder have not submitted valid type test reports with bid:

i) The 70% payment shall be released after receipt of successful test reports from CTL 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.

C) The due dates for payment shall be considered from the date of submission of the bills along with receipted challans to Sr. Accounts Officer (CPC) of respective Discoms.

3.25 PLANT, MACHINERY & TESTING EQUIPMENTS;

3.25.1 The bidder should have required plant, machinery and testing equipment for manufacturing & testing of 33 KV Pin insulators.

3.25.2 The bidder should have conveyor belt system at their works for conducting continuous and hundred percent routine test on 33 KV Pin Insulators . The bids of bidder not having such arrangement (infrastructure) may be ignored.

3.25.3 The bidders should furnish details of plant, machinery and testing equipment with the bids failing which bids may be ignored.

3.26 QUANTITY TOLERANCE :

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

3.27 CHALLENGE TESTING :

The other manufacturer can also request challenge testing for any test based on specification. The challenger would request for testing with testing fee. The challenge test fees are proposed at least three times the cost of testing. This is likely to deter unnecessary challenges. The challenger would have the opportunity to select the sample from the store of Nigam and any such challenge should be made within the guaranty period. The party challenged, challenger and the utility could witness the challenged testing. The challenged testing would cover all the type tests as per relevant IS.

The challenge test could be conducted at NABL accredited laboratory, like ERDA/ CPRI . If the values are within limit, the product gets confirmed, else not confirmed. If the product is not confirmed the manufacturer would pay the challenge fee and challenger would get the fee refunded. However, as a redressal system the challenger would be allowed to ask for fresh selection of two more samples from the store of Nigam and same be tested in a NABL laboratory (which shall be other than previously selected NABL accredited lab) at the cost of supplier, in presence of party challenged, challenger and the utility. If any one or both sample does not confirm the tests, then the product is said to have failed the tests. In such cases the manufacturer will be declared as unsuccessful manufacturer for the said product and balance supply shall not be availed and the order shall be cancelled with levy of maximum penalty.