

**SCHEDULE-III (i)****TECHNICAL SPECIFICATION FOR REPAIR OF 33 KV & 11 KV CT PT SETS  
AGAINST TN-2417**1. SCOPE:

This specification covers assessment and estimation for repairs involved in complete repairs, testing, delivery and safe custody of all standard ratings CT-PT from 2.5/5 to 400/5 Amp copper wound of various makes, types and capacities lying damaged at various sites/circles stores of the Jaipur Vidyut Vitran Nigam Limited on Rate Contract Basis.

Alternatively original manufacturer of the 33 KV & 11 KV CT PT Sets may quote the price for replacement of defective/damaged CT PT Set by new one clearly indicating the rebate in percentage of the cost of new Set (as per updated latest procured rate of Nigam) of any make but same ratio to be allowed against such replacement.

2. REPAIR WORK:

The repair work shall involve, opening of CT PT set's cover, draining of oil, detanking core and coil assembly, cleaning, washing of dust and dirt from all parts including core, tank etc., replacement of defective parts, assembly, retanking, filling fresh oil, oil filtration, marking and painting etc. and testing the repaired CTPT sets for all the routine tests and temp. rise test as per IS: 2705 & 3156 with latest amendments.

3. REPLACEMENT OF PARTS:

This will involve removal of damaged parts requiring replacement, supply of parts such as coils, bushing gaskets, oil drain , cover bolts, plug cap and screws, insulating oil etc, fittings, fixing and making connections complete in all respect for satisfactory operations after repairs in normal working conditions.

4. WINDINGS:

The damaged winding requiring replacement shall be replaced by windings identical to the original one in respect of cross section of conductor, No. of turns, diameter of coils, insulation material etc. and that all coil assemblies of identical voltage ratings shall be interchangeable so that field repairs of the winding can be made readily without special equipment. The coils shall be supported, between adjacent section by insulation spacers and the barriers, bracing and other insulation used in the assembly of the windings and shall be arranged to ensure free circulation of the oil and reduce hot spots in the windings.

- 4.2 The insulation of the coil shall be treated with suitable insulating compound under vacuum impregnation to develop the full electrical strength of the winding. All materials used in the insulation and assembly of the windings shall be insoluble, non catalytic and chemically inactive in the hot insulating oil and shall not soften or otherwise be adversely affected under the operating conditions.

- 4.3 The winding shall be compact and symmetrical about the center line of the core and shall be formed on suitable synthetic resin bonded paper sheets grade-I confirming to the requirement of IS-2705 and 3156 or any amendments thereof and the size of sheets shall be identical to those used in the original CTPT sets.
- 4.4 The conductor inner layer insulation shall be of suitable material confirming to relevant latest ISS (or BSS wherever ISS is not formulated) and shall be of such sizes and material as provided in the original CTPT sets. The leg coils shall be provided with oil ducts wherever required.
- 4.5 The number of coils, the resistance, number of turns and dimensions of complete coils shall be exactly the same as that of the coil of the original CTPT sets, so that electrical and mechanical characteristics of the repaired CT PT set shall remain same as that of the original CTPT sets.
- 4.6 All threaded connections shall be provided with suitable locking devices. All leads from the winding to the terminals and bushing shall be rigidly supported to prevent damage due to vibration/transportation. It would be preferable to use sleeves/SRBP tubes wherever practicable on the leads taken out from winding to terminals and bushings.
- 4.7 The winding shall be clamped securely and placed so that they will not be displaced or deformed during short circuits. The assembled core and winding shall be vacuum dried in vacuum chamber and suitably impregnated with insulating before removal from the treating tank. The tenderer will specifically indicate, if he has got facilities and equipment for vacuum impregnation. The conductors used in the coil structure shall be best suitable to the requirement and all permanent current carrying joints in the windings and the leads shall be brazed/welded preferably and rigidly clamped.

## **5. CORE LAMINATION:**

- 5.1 After clearing dust and dirt from the each leaf of laminations, the core shall be rigidly clamped and bolted to ensure adequate mechanical strength and to prevent vibrations during operation. The bolts used in the assembly of the core shall be suitably insulated and clamping structure shall be so constructed that eddy current will be minimum.
- 5.2 The core and the coil assemblies shall be so fitted in the tank that shifting may not occur and original clearance is maintained when the CTPT sets is moved/transported or during the short circuit conditions.

## **6.0 FREQUENCY:**

The required CT PT set shall be suitable for continuous operation with a frequency variation of plus minus 3% from normal frequency of 50 cycles per seconds without exceeding permissible temperature rise.

## **7.0 HIGHEST SYSTEM VOLAGE:**

The highest system voltage may be as high as 36 KV for 33 KV and 12 KV for 11 KV CT-PT Sets. The repaired CT PT set shall be suitable for conditions operation with this voltage.

## **8.0 INSULATING/ TRANSFORMER OIL:**

Normally the fresh CT PT sets oil for filling in the repaired CT PT set shall be made available by the Contractor and the quantity of new CTPT sets oil, as may be required to be filled in, shall be as per the quantity mentioned on the name plate of the CT PT set. Filling of the fresh oil in the CT PT set shall be done in the presence of Nigam's representative at the time of taking up final testing after repair at the works of contractor before dispatch to Nigam.

The contractor shall be authorized to use their own new insulating oil with the prior approval of SE (MM). The make of Lubricant oil shall be one of the APAR/ SAVITA/ RAJ LUBRICANTS/ LUBRICHEM, MUMBAI/ RAJ PETRO, MUMBAI/ PANAMA PETRO CHEM, ANKALESHWAR/ TANHKANT OIL, MUMBAI/ RTS, JAIPUR/ KESHRI, NEW DELHI or any other equivalent make approved by Nigam. The CTPT sets oil whenever provided by the contractor shall be tested oil and shall confirm to the various tests per table No. 2 of ISS: 1866/1983. In case the testing facilities are not available with the contractor the sample of oil taken out by Nigam's representative shall be got tested at any RRVPNL/ Discom laboratory without any testing charges.

**The Contractor shall furnish type and routine test reports for the oil before offering equipment for inspection.**

## **9.0 TESTS:**

- 9.1 All the repaired CT PT set shall be subjected to all the routine tests as per IS: 2705 & 3156 with latest amendment as detailed below:
- i) Verification of terminal marking :
    - a) Primary winding
    - b) Secondary winding
  - ii) Verification of polarity
  - iii) Power frequency dry withstand test on
    - a) Primary winding
    - b) Secondary winding
  - iv) Accuracy Test
  - v) Over voltage Inter-Turn Test on secondary winding for current CT PT sets(CTs)
  - vi) Induced over-voltage withstand test for Potential CT PT sets ( PT )
  - vii) Other tests as per relevant ISS.

- viii) Checking of repair work in confirmation to the joint inspection report and approved estimates.
- 9.2 The tenderers will mention clearly that they have got requisite testing facilities at their works for the aforesaid tests..
- 9.3 The fresh insulating oil filled in shall also be tested for its dielectric strength in accordance with ISS: 1866/1983 (amended up to date).
- 9.4 **If the test results and ratio of the repaired CT PT sets are beyond the limits, the CT PT sets will be declared un-economical. The CTPT sets found un-economical after testing shall be retained by the firm immediately after the testing is completed.**

The cost of copper coil, brass and steel scrap shall be fixed on the basis of price of copper wire scrap, brass scrap and turning boring steel scrap published in Economics Times on the date of joint estimation. Reduction of 15% in cost shall be allowed towards impurities in the rate of copper scrap for fixing the rate of copper scrap to be retained. The cost of scrap material shall be credited in the repaired bills to be preferred to the Sr. Accounts Officer (CPC) JVVNL, Jaipur.

However, no charges for repair of such CT PT sets will be payable except for the charges fixed for uneconomical CT-PT set.

- 9.5 If required by the Superintending Engineer (MM), Jaipur Discom, Jaipur one CT PT set at random will be got selected by the inspecting Officer to verify physically the size of the conductor, No. of turns, quantity & quality of oil and quantity of material used and workmanship etc. In case of finding reduce weight of coil/oil, the repair cost of CT PT set repaired in last one year or after the date of last physical verification (whichever period is less) against this specifications will be reduced accordingly in the same proportion and no extra payment towards loss will be paid to the contractor. In case there is no variation in the actual quantity and quantity of repair work in reference to the estimate of that CT PT set the following extra charges will be paid for opening of CT PT set at rate mentioned in the price schedule:

- i) Labour charges for reassembly
- ii) Charges for baking for CT/PT coils and/or new CT assemblies under vacuum impregnation along with filtration of oil.
- iii) Cost of 10 % oil towards wastages.
- iv) Cost of new coils in place of unwounded coils (the cost of unwounded coils will be reduced in the relevant bills)

- 9.6 The Nigam's reserves the right to inspect the work of the contractor during the process of repair for checking the repair work in confirmation to the joint inspection report and approved estimate and also for the quality of workmanship and material used in repair.

9.7 **Results of 33 KV and 11 KV CT PT Sets After Repair:**

- (A) **33KV and 11 KV Current Transformers:**

The 33 KV and 11 KV current transformers shall have the following technical characteristics/parameters after repairing.

S. No.	Particulars	Parameters for	
		33 KV Sets	11 KV Sets
1.	Nominal system voltage (KV rms)	33	11
2.	Highest system voltage (KV rms)	36	12
3.	Frequency	50 Hz	50 Hz
4.	Impulse withstand voltage (On assembled CT-PT set)	170 KV (Peak)	75 KV (Peak)
5. (i)	One minute power frequency dry withstand voltage (On assembled CT-PT set):		
a.	Primary	70 KV (r.m.s.)	28 KV (r.m.s.)
b.	Secondary	3 KV (r.m.s.)	3 KV (r.m.s.)
(ii)	One minute power frequency wet withstand voltage (on assembled CTPT set)	$\sqrt{2} \times 70$ KV (r.m.s)	$\sqrt{2} \times 28$ KV (r.m.s)
7.	Rated output (VA burden)	<b>15 VA</b>	<b>15 VA</b>
8.	Class of accuracy	<b>0.5S</b>	<b>0.5S</b>
9.	Rated continuous thermal current	1.2 times of rated primary current	1.2 times of rated primary current
10.	Short time thermal current rating for one second	6.4 KA upto 30/5A, 12.5 KA for 40/5A and 18 KA for 50/5A & above as per relevant IS.	3 KA for 5/5A, 7.5/5A & 10/5 A, 4 KA for 15/5A and 6 KA for 20/5A, 20/5A & 30/5 A as per relevant IS. 18 KA for 50/5 A and for all higher ratios.
11.	Rated dynamic current	2.5 times of short time thermal current rating.	2.5 times of short time thermal current rating.
12.	Number of cores	One	One
13.	Instrument security factor	Not more than 5	Not more than 5
14.	Max. ratio error	As per IS: 2705/1992	Within limit of IS: 2705/1992
15.	Max. phase angle error	As per IS: 2705/1992	Within limit of IS: 2705/1992
16.	Max. temp. rise over max. ambient temp. of 50 deg. C at rated continuous thermal current at rated frequency and with rated burden	As per IS: 2705/1992	Within limit of IS: 2705/1992

### B) 33 KV and 11 KV Voltage Transformers:

The 33 KV and 11 KV voltage transformers shall have the following ratings/technical parameters after repairing:

S. No.	Particulars	Parameters for	
		33 KV Sets	11 KV Sets
1.	Nominal system voltage (KV rms)	33	11
2.	Highest system voltage (KV rms)	36	12
3.	Nos. of phases	Three	Three
4.	Impulse withstand voltage (On assembled CT-PT set)	170 KV (Peak)	75 KV (Peak)
5 (i)	One minute power frequency dry		

	withstand voltage (On assembled CT-PT set):		
a.	Primary	70 KV (r.m.s.)	28 KV (r.m.s.)
b.	Secondary	3 KV (r.m.s.)	3 KV (r.m.s.)
ii)	One minute power frequency wet withstand voltage (On assembled CT-PT set)	$\sqrt{2} \times 70$ KV (r.m.s)	$\sqrt{2} \times 28$ KV (r.m.s)
	Frequency	50 Hz	50 Hz
6.	Transformation ratio (CT Ratio)	33KV/ 110 V	11KV/ 110 V
7.	Rated output (VA burden)	30 VA per phase	50 VA per phase
8.	Class of accuracy	0.5/0.5P as the case may be (As per IS: 3156/1992)	0.5/0.5P as the case may be (As per IS: 3156/1992)
	Winding connection	Star/Star	Star/Star
9.	Rated voltage factor and time	1.2 continuous & 1.9 for 30 seconds	1.2 continuous & 1.5 for 30 seconds
10.	Maximum ratio error	As per IS: 3156/1978	Within limit of IS: 3156/1978
11.	Maximum phase angle error	As per IS: 3156/1978	Within limit of IS: 3156/1978
12.	Maximum temperature rise over maximum ambient temperature	As per IS: 3156/1978	Within limit of IS: 3156/1978

### **MARKING AND PROVIDING YELLOW BAND ON REPAIRED CT PT SETS:**

- 10.1 The repairer shall provide a non-detachable steel plate on the body of the CT PT set, which should be properly welded. Riveted and/or Aluminium plates shall not be accepted at all. The following details on this nameplate should be deeply engraved by the repairer on the repaired and tested CT PT set. No CT PT set shall be accepted without proper fixing of repair plate "A" on the CT PT set as under.

#### "A"

1. Repaired by M/s.....
2. CRC No. JD.VVNL/SE/MM&C/JU TN 537/. /D..... Dt. ....
3. Ratio .....Amp. S. No. .... Make.....  
Store S. No.....WNP No..
4. Work order No. JVVNL/SE/O&M/SEC.6/F/CT PT /D..... dated.
5. Date of Delivery/ Dispatch. ....
6. Delivered at stores.....
7. Date of expiry of GP ..... Date of 1<sup>st</sup> Re-repair.....
8. Date of expiry of GP after 1<sup>st</sup> re-repair.....
9. Date of 2<sup>nd</sup> re-repair.....
10. Date of expiry of GP after 2<sup>nd</sup> re- repair.....
11. Date of 3<sup>rd</sup> re- repair.....

In order to find out the balance guarantee period of the CT PT set failed under guarantee period, the contractor shall be provided another new plate "B" and shall emboss the information as under:

#### "B"

1. Date of failure of CT PT set .....
2. Date of repair of CT PT set .....
3. Date of expiry of guarantee period after such repairs .....

- The original nameplate of CT PT set will remain fixed on the repaired CT PT set.
- 10.2 For the CT PT set "Without name plate" the SE/O&M /Jaipur Discom, \_\_\_\_\_ shall allot a serial No. to such CT PT set before delivery to the repairer firm.
  - 10.3 A 100 mm wide yellow Band of paint all around the CT PT set on all the CT PT sets repaired shall be provide invariable approximately at the middle of the tank of the CT PT set for identification of the repaired CT PT set easily. This paint will also be provided after proper treatment of the surface of the CT PT set, if the CT PT set is reported failed again after repairs, another 100 mm wide Yellow band will also be painted at 50 mm above the surface of the 1<sup>st</sup> paint so as to identified clearly the 2<sup>nd</sup> repair of the CT PT set. Similarly in case of further repairs each additional band in Yellow paint will be provided on subsequent repairs of the CT PT set. This Yellow band will be painted after final gray painting of the repaired CT PT set.
  - 10.4 Store S. No of the CT-PT set shall also be punched on the Main Tank body of the CT-PT set.

**CONDITIONS OF RATE CONTRACT FOR REPAIR OF CT PT SETS  
AGAINST TN- 2417.****1.0 INTRODUCTION:**

- 1.1 Copper wound CT PT set approximately **1000** in numbers of assorted makes, type and of capacities ranging 2.5/5 Amp to 400/5 Amp of 33 KV and 11 KV rating installed/spared from feeder metering/ consumer premises are to be repaired.
- 1.2 These CT PT set shall be made available through various stores/sub-stores of Jaipur Discom. After satisfactory repairs and testing, the CT PT set may be used anywhere in the jurisdiction of Jaipur Discom.

**2.0 SCOPE OF WORK:**

- 2.1 This specification provides for assessment and estimation of damaged CT PT set to be repaired at contractor's works involving opening of CT PT set draining of salvage oil, detanking of core and coil assembly, cleaning and washing of dust and dirt from all parts including core, tanks, retanking after assembly of all parts after replacement of repairing of the damaged parts, filling of required quantity of fresh oil, oil filtration and painting marking and testing as per ISS. **Along with to and fro transportation of defective and repaired CT-PT Sets from Nigam's Stores.**
- 2.2 This specification also provides for supply of parts requiring replacement such as coils, bushing gaskets, oil level gauge, fresh insulating oil, cover bolts, plugs, caps, screw and other sundry items necessary for complete repair of CT PT set.
- 2.3 After repairs the CT PT set shall be subjected to all the routine & acceptance tests as per IS: 2705 & 3156 with latest amendments and the insulating oil shall also be subjected to the tests as per IS: 335/1993 (with latest amendment). All the test shall be carried out in the presence of an authorized engineer/officer of the Nigam in order to ensure that the repairs have been carried out satisfactorily and new insulating oil of proper quality has been filled in and the CT PT set can be used for efficient performance under the various operating and atmospheric conditions detailed elsewhere in these specifications.
- 2.4 After satisfactory repairs and testing, the contractor shall have to deliver the CT PT set to the concerned stores of the Nigam.
- 2.5 The facilities for Labour, equipment etc. for loading/unloading and handling of CT PT set at the contractor's works for assessment of the repair work **either at the Nigam stores or at the contractor's works whichever the case may be** and at the time of dispatching CT PT set after satisfactory repair and testing shall be arranged by the contractor at his cost and no extra charges shall be paid for this job. The to and fro transportation from Nigam's Stores shall be arranged by the contractor.



### 3.0 PRICES:

- 3.1 The tenderers are required to quote their prices as per price schedule appended hereto for copper wound CT PT set. The prices for items I, II, III, IV, V, VI, VII & VIII of price schedule shall include assessment and estimation, labour and all other charges involved in repair, testing handling, loading, unloading storage marking and giving safe delivery of the CT PT set at the stores after satisfactory repairs and testing painting of CT PT set, filtration of insulating oil etc. The total repair charges of each rating of CT PT set will form the basis of rate contract for repair work. The rate contract shall not be for part of the repair works. However, the rates shall be operative for individual items of repair work as may be assessed at the time of estimation.
- 3.2 The rates for the items I, III-1, III-2 & III-11 of "Price Schedule" should be quoted variable as per formula enclosed at Schedule III-A, without ceiling, based on prices of HCL sales price of copper wire rods) insulating oil, CT PT sets and labour index as on first day of preceding month of tender opening published in IEEMA circulars and for the rest of items of the price schedule unit rate quoted shall be on firm price basis and no price variation shall be allowed. For claiming payment of labour charges, coils, current CT PT sets and insulating oil, the contractor shall certify that there is no negative price variation on the items I, III (1), III (2) & III (11).
- 3.3 (a) (i) Goods and Service Tax: Goods and Service Tax and any other government levy on spare parts (components/ oil & other accessories) for the CT PT set repaired, which if legally applicable shall be paid extra at actual on production of necessary documents.

The prices shall be quoted by the tenderer after accounting for the benefits of Input Tax Credit scheme and any other type of benefit as may be availed by them, in future due to any modification/ insertion of new financial rules by the government shall be passed on to the Nigam.

- (ii) However, tenderer must specify clearly the present rate of GST to be charged by them on the price mentioned in their quotations. In case it is not applicable at present to the tenderer, a clear mention to this effect should be made in the tender offer. The limit of contract value may also be mentioned to the extent up to which duties will not be charged.
- 3.4 **Formula for Claiming Price Variation:** - The price variation of copper wound HT and LT coils, labour charges and transformer oil shall be regulated as per formula given below:

Price of particulars	:	Price of items as	:	Price or raw material as per IEEMA
items to be paid to	:	per price schedule	:	"E" series circulars prevailing on the
the contractor for	:	of rate contract	:	1 <sup>st</sup> day of the month preceding the
the CT PT Sets	:	order.	:	month of the actual delivery
to delivered after	:	delivery whichever is lower (.)	:	Base price of raw material as repairs the
stores or the schedule	:		:	per IEEMA circular prevailing
			:	on 1 <sup>st</sup> day of preceding month of date of
				tender opening.

- A) For working out price variation of copper wound HT and LT coils shall be as per indices for copper wire rods of Item 'Insulated cables' in IEEMA circulars. The basis of prices for copper scrap shall be "for increase/decrease by Rs 1.00 as per aforesaid IEEMA indices of copper wire rods, the rate of HV & LV copper coils is to be increased/decreased shall be by Rs 1.10 per kg".
- B) The price variation of transformer oil shall also be regulated on the basis of above formula. The base prices of transformer oil shall be as per IEEMA circulars for transformer oil. No variation shall be allowed on account of variation in the prices of steel drums.
- C) **The price variation of labour charges shall also be regulated on the basis of labour index (Base 2001) as mentioned in IEEMA circulars prevailing on first day of the preceding month of the date of tender opening. The labour charges shall be calculated on percentage basis for each month with the formula  $((A - 133)/A)$ , where 'A' is IEEMA indices of respective month.**

#### 4.0 DELIVERY:

The joint inspection for preparation of estimates shall be arranged within a week's time from the delivery of the damaged CT PT set at the works of the firm and estimate shall be furnished within a week there after. The CT PT set shall be repaired and offered for inspection/testing within **30 days** from the date of issue of the work order by concerned Superintending Engineers (O&M) or within 10 days from the date of filling of insulating oil if oil is supplied by the Nigam whichever is later. **The date of delivery of the repaired CT PT set to the respective consignee shall be treated as date of receipt for the purpose of penalty as CT PT set after repair are to be Delivered by the contractor through his own transport facilities.**

#### 5.0 DELAY IN DELIVERY:

The repair work shall be completed within stipulated delivery period. If the contractor fails to repair and deliver the CT PT set after due repair within the specified delivery dates, the Superintending Engineer (O&M), shall be entitled to recover the penalty (for the CT PT set the repair of which have been delayed/ not repaired) "Rate of penalty for the late execution work shall be ¼% per week for first four weeks and ½% per week thereafter up to a maximum of 5%."The Nigam will also have right to cancel the order and forfeit the security deposit/safe custody amount and get the repair work done by some other contractor at the cost, risk and responsibility of the defaulting contractor or to recover max. Penalty levied along with the to & fro risk & responsibility of the defaulting contractor or transportation cost, if applicable, in case of delay in repairs/ non repairs of the CT PT sets beyond one month.

#### 6. SECURITY DEPOSIT:

The successful tenderer shall have to deposit security amount or to furnish a Bank guarantee @ 2% of the ordered value or Rs. 25,000.00 whichever is higher

towards security deposit for faithful execution of rate contract. Alternately the contractors may get themselves registered in "A" class under vendor's registration for supply of CT PT sets as per clause 1.5.3 of General Conditions of Contract.

#### 7.0 **SECURITY DEPOSIT FOR SAFE CUSTODY OF CT PT SETS:**

- 7.1 The successful tenderers shall be required to deposit Rs 1.0 lac towards charges for safe custody or to furnish Bank Guarantee for Equivalent amount towards safe custody of every 40 Nos. of damaged CT PT set of assorted rating in favour of SE (MM), Jaipur Discom, Jaipur. The BG shall be from any schedule bank & shall be furnished on the Rajasthan Govt. non-judicial stamp paper of worth Rs. 100/- on the prescribed Performa. At the initial stage the bank guarantee shall be valid for a period of minimum two years with 6 months grace period.
- 7.2 The contractor shall not be allowed to commence work of the repair and testing of damaged CT PT set at site or his factory premises till such time he deposits security towards safe custody of CT PT set.

#### 8.0 REPAIRS GUARANTEE:

The contractor shall guarantee satisfactory performance of CT PT set for a period of 12 months from the date of receipt of repaired CT PT set at Nigam stores. The defects noticed during the period of guarantee shall be attended on priority and the CT PT set shall be repaired free of cost within a period of **45** days after receiving the CT PT set at their works without any liability on the Nigam. Any delay beyond the **45** days in repair/rectification of the CT PT set shall be subjected to penalty as applicable for delay in delivery. Subsequent repair of such CT PT set shall carry a further guarantee of **six** months form the date of receipt of CT PT set, after such repairs or balance guarantee period whichever is later. The to and fro transportation of the CT PT set which fail in guarantee period will also be arranged by the contractor from Nigam stores to the contractor's works.

#### 9.0 **PERFORMANCE GUARANTEE:**

The successful tenderer shall have to furnish to furnish performance security in the form of cash or in form of Bank guarantee @ 10% of the cost of repair of lot(s) for performance of repaired CT-PT Sets during guarantee period.

- i) The repairer shall obtain receipted challans from the concerned ACOS/Stores Superintendent in respect of repaired CTPT set delivered in stores and shall be furnished with the repair bills directly to Sr. Accounts Officer (CPC), JVVNL, Jaipur for payment.
- ii) In absence of furnishing of PBG by the contractor, 90% payment of repair cost of each lot of CT PT set shall be made on delivery of repaired CT PT sets. The balance 10% payment shall be released by Sr.Accounts Officer (CPC), JVVNL, Jaipur under intimation to Superintending Engineer (MM), Jaipur Discom, Jaipur and concerned Superintending Engineer (O&M) after receipt of a certificate about satisfactory performance of CT PT set for each lot delivered in a particular month after expiry of the performance guarantee period from concerned ACOS in the Performa given.

## 10.0 PRICE FALL CLAUSE:

The price charged for the works executed and spare parts supplied under the contract by the contractor shall in no event exceed the lowest price at which the contractor execute the works and sells spare parts of identical description to any other person/firm during the period of contract.

If at any time, during the said period, the contractor reduces the prices for such works or sells such spare parts to any other person at a price lower than the price chargeable under the contract he shall forthwith notify such reduction of price to the Nigam and the price payable under the contract for the works executed and spare parts supplied after the date of such reduction shall stand correspondingly reduced. The contractor shall furnish certificates in the following form to ensure compliance of provisions of clause :

"I/We certify that the works executed or spare parts supplied of description identical to the works executed or spares supplied to the Jaipur Distribution Nigam under the rate contract No. JPD/SE/ MM/TN-2417 have not been sold by me/us during the period of supply/during the period form.....to..... any other person at the price lower that the price charged from the Nigam under rate contract".

## 11. PARALLEL CONTRACTS:

The Nigam reserves the right for entering into parallel rate contracts with other firms and to assign and specify the areas of operation of rate contract.

## 12. PAYMENTS:

100% payment shall be arranged by Sr. Accounts Officer (CPC), JVVNL, Jaipur against presentation of bills for repair of CT PT sets, based on the joint inspection report and the estimate approved by the concerned Superintending Engineer ( ). The repair bill should be supported by receipted challan in token of receipt of repaired CT PT sets by the concerned Assistant Controller of Stores/Stores Superintendent and the documents as stated at clause 13. However, the contractor shall not get any payment in absence of completion of contractual formalities such as deposit security or furnishing of bank guarantees towards security deposit and safe custody and also execution of contract agreement etc. In the event of non-furnishing the performance bank guarantee @ Rs. 500/- per CT PT set. Alternatively 90 % payment shall be made on delivery of CT PT set and balance 10% will be released after expiry of total guarantee period of the CT PT sets.

The concerned Assistant Controller of Stores will furnish the satisfactory performance report to the Sr. Accounts Officer (CPC), JVVNL, Jaipur under intimation to the SE (O&M) /SE (MM), Jaipur for each lot of the CT PT set delivered in a particular month, after expiry of guarantee period and will certify that there is no CT PT set lying failed within guarantee period pending for repair. On the basis of such certificate from ACOS, the balance payment with held towards performance bank guarantee will be released by the Sr. Accounts Officer (CPC), JVVNL, Jaipur for that lot.

### 13. SUBMISSION OF BILLS:

The bills for repairs of CT PT set shall be supported by the following documents for arranging payments:

- a) Copy of joint inspection report.
- b) Approved estimate & work order of SE (O&M).
- c) Inspection, testing and dispatch clearance report of the Inspecting Officer.
- d) Receipted challans of the consignee for the receipt of repaired CT PT sets. But at the time of verifying the challans the concerned ACOS will annex details **and record a certificate that the contractor for the said lot has retained all the scrap/salvage etc. and CT PT sets declared uneconomical during joint inspection & further during final inspection or otherwise as the case may be.**
- e) Proof of payment of excise duty and sales tax as claimed extra in the bills.
- f) Certificates that material/spares mentioned in the bills have been actually fitted/used on the CT PT sets.
- g) Certificate regarding price fall as per clause No. 10.
- h) Certified that credit of Rs. ----- has been given to Nigam as adjustment of payment of scrap as per details given in the annexure in the bill enclosed. **In case the contractor retains the scrap of defective/uneconomical CT PT Sets.**

### 14. TRANSFORMER OIL:

#### 14.1 **INSULTING/TRANSFORMER OIL:**

- 14.1.1 The insulating oil will be drained out from the CT PT set before delivery to firm's works for repair, by the concerned consignee and In case it is not possible to be drain oil at stores, the same shall be got **drained and retained by the contractor at his works before joint inspection. Cost of the fresh oil shall be suitably discounted in lieu of this retention and it is to be considered/taken care of while quoting the price of fresh transformer oil.**
- 14.1.2 All the repaired CT PT set shall be filled in with fresh/ new insulating oil as detailed in the technical specification. The quantity of fresh insulating oil shall be filled in as per quantity mentioned on the nameplate of CT PT set of original manufacturer or the actual, whichever may be less. The repairer will furnish the documentary proof of using fresh/new transformer/insulating oil to the inspecting officer when required by him.
- 14.1.3 The fresh insulating oil, if available with the Nigam, may be supplied to the contractor as per the quantity mentioned on the nameplate of the original manufacturer. In that event only filtration charges as per item VI of schedule of prices shall be paid and **2.0%** extra insulating oil shall be supplied by the Nigam on account for losses during handling and processing.

#### 14.2 **TRANSPORTATION/CARRIAGE OF CT PT SETS:**

The contractor will make the arrangement for to and fro transportation of the CT PT set from Nigam stores to contractor's **works along with loading /unloading, handling, outer for joint inspections of the**

**defective/damaged CT-PT sets at Nigam's premises, In case joint estimation is carried out at Nigam stores.**

The Nigam will make arrangement for to & fro transportation of the CT PT set installed in field, which failed in the guarantee period after repair, up to stores. The contractor shall repair such CT PT set at their works free of cost. The unloading /loading and handling of CT PT set at the contractor's work at the time of receiving/dispatch and for other works shall be carried out by the contractor without any extra cost.

**15. ASSESSMENT / ESTIMATION OF REPAIRS:**

- 15.1 The joint inspection of the damaged CT PT set shall be carried out at the circle stores of Jaipur Discom by one of the Assistant/Executive Engineer nominated by the Circle Superintending Engineer (O&M),/Assistant Controller of Stores/ Store Superintendent and the authorized representative of the contractor to assess and work out the details of damaged parts to be replaced and repairs to be carried out on every individual CT PT set. In the event of any difficulty in Nigam's stores of Jaipur Discom, the Superintending Engineer (O&M) at his discretion can ask the contractor to arrange the joint inspection at their works. The joint inspection facilities for labour and handling etc. at the circle stores of Nigam shall also be provided by the contractor. Six copies of the estimate for the repair and testing for every damaged CT PT set in prescribed Performa indicating its rating, Sr. No., Make Original TN Number, Year of manufacturing & rating, PO No and date etc. shall be prepared after joint inspection.

To expedite repair work of CT PT set & smooth operation of Rate Contract. The firm shall retain the CT PT set declared un-economical at the time of joint inspection/during inspection by inspecting officer immediately after the joint inspection/testing is completed **in case joint estimation is carried out at contractor's works.** The cost of copper coil, brass and steel scrap shall be fixed on the basis of price of copper wire scrap, brass scrap and turning boring steel scrap published in Economics Times on the date of joint estimation. Reduction of 15% in cost shall be allowed towards impurities in the rate of copper scrap for fixing the rate of copper scrap to be retained. The cost of scrap material shall be credited in the repaired bills to be preferred to the Sr. Accounts Officer (CPC), JVVNL, Jaipur.

- 15.2 **All the six copies of the estimate shall be signed by the contractor's representative and officers of the Nigam. For joint inspection, the contractor at their works shall provide handling and testing facilities for labour and equipment free of charges.**
- 15.3 The joint inspection reports shall clearly indicate whether particular item being provided is against replacement of defective/ damaged missing parts.
- 15.4 In case of damage of any of the Primary Coil of CT PT sets, the contractor shall replace the **damaged Primary Coil(s)** of the defective CT PT sets by new primary coils of similar quality of material, insulation and cross section, number of turns etc. as utilized in damaged CT PT set.
- 15.5 **Secondary Coils:** - The **all three secondary coils** shall be replaced by new secondary coil(s) of similar quantity & quality of material, insulation and cross

section, number of turns etc. as utilized originally in the old coils taken out from the damaged CT PT set if any of the existing coils is found defective.

- 15.6 The weight of new coils (the new coils shall be identical to the old coils) to be charged in the estimate for repairs shall be same as that of the old healthy secondary coils taken out from the damaged CT PT set. Bills for repair of CT PT set shall be prepared accordingly for actual weight of new-finished coils only. No cost of variation in weight on positive side referred by contractor will be allowed. The contractor while offering for inspection shall furnish a list of actual weights of new coils of each CT PT set.

After joint inspection for estimation the contractor shall retain one sample of healthy primary & secondary coils of each damaged CT PT set, duly tagged with details such as make, type capacity, S.No. of CT PT set, weight of, name of circle etc. duly signed by the joint inspecting officer under their seal, till the time of inspection and testing by inspecting officer of Nigam for purpose of verification of the technical details of fresh coils used by the contractor in the repaired CT PT set.

- 15.7 The contractor shall also ensure that his Engineer is always made available when called for joint inspection and preparation of estimates in order to avoid unnecessary delay of repair works and detention of the Inspection Officer of the Nigam. Any delay in commencement of joint inspection after reaching the inspecting officer shall be towards the contractor's account.

## 16. **APPROVAL OF ESTIMATES:**

- 16.1 The joint inspection for preparation of estimate shall be arranged within a week time from the date of delivery of the CT PT set and the estimate in respect of the CT PT set which are within the prescribed economical limits of 32.5% of the stores issue rates of new CT PT set shall be prepared and furnished within one week thereafter and shall be approved by the concerning circle Superintending Engineer (O&M), before carrying out repairs by the firm.

- a) The estimate shall be vetted/ checked by the respective accounts authority attached with concerned SE (O&M) as per rates of Rate Contract and a certificate may be recorded.
- b) Also a certificate be recorded that:
  - i) The CT PT set found economical for repair as per latest store issue rates/**latest available issue rate if the item is not procured in recent time.**
  - ii) The PT sets of the lot are beyond G.P.
- c) Availability of budget provisions.
- d) The final penalty amount shall be calculated by the ACOS and be submitted to concern Superintending Engineer (O&M), who in turn will intimate to Sr.Accounts Officer (CPC), JVVNL, Jaipur after getting the same checked/ vetted by circle Accounts Officer.
- e) The Concerned ACOS will also intimate the penalty on account of delay in repair of GP failed CT PT sets to the Sr. Accounts Officer (CPC), JVVNL, Jaipur under intimation to this office.

This limit of 32.5% shall be exclusive of transportation charges and shall be arrived at after crediting the salvages value of the insulating oil, if available and damaged or healthy coils which are required to be replaced. **Additional**

- cost of conversion of 3 phase 3 wire CT PT set in 3 phase 4 wire CT PT set along with spare parts required for such conversion shall not be considered for the purpose of economic limit calculations.** The estimate of the repairs after getting signed by the committee as above shall be submitted to the concerned circle SE (O&M) in 6 copies. Three copies of the estimate duly approved shall be forwarded to the contractor by the SE (O&M), to enable him to commence the repair work on the CT PT sets thereafter immediately.
- 16.2 Out of the 3 copies of the approved estimates received by the contractor, one copy shall be retained by him for his record and one copy along with the inspection clearance report shall be attached along with the bill(s) after satisfactory repairs and testing and shall be forwarded by the contractor to the consignee/ stores officer to facilitate the verification. The remaining spare copies of approved estimate along with a copy of joint inspection report shall be handed over to the Inspecting officer at the time of inspection and testing of the repaired CT PT set to facilitate checking and to ensure that the repairs have been done strictly in accordance with the approved estimates.
17. **SUNDRY ITEMS:**
- Miscellaneous items not specified in the price schedule but are required for repairs and satisfactory operation of the CT PT sets after repairs shall be provided by the contractor at the fixed rates given in the schedule of prices under title "SUNDRY ITEMS". These items may include Packing of bushing and rods; cover bolts, caps, screws, washers & insulation to be provided between primary and secondary coils and interchangeable coils. A Minor Repairs of tank and all other parts not specifically mentioned in price schedule including denting, welding etc. if required which are necessary for satisfactory operation of the CT PT sets after repairs.
18. **SALVAGES:**
- All the salvages of damaged CT PT sets and parts including the burnt coils/old healthy coils/ replaced components shall be **retained** by the firm **in case joint estimation is carried out at contractor's works**, immediately after the joint inspection is completed. The cost of copper coil, brass and steel scrap shall be fixed on the basis of price of copper wire scrap, brass scrap and turning boring steel scrap published in Economics Times on the date of joint estimation. Reduction of 15 % in cost shall be allowed towards impurities in the rate of copper scrap for fixing the rate of copper scrap to be retained. The cost of scrap material shall be credited to Nigam in the repair bills to be preferred to the Sr. Accounts Officer (CPC) JVVNL, Jaipur.
19. **TESTS AND TEST CERTIFICATES:**
- 19.1 All the CT PT sets after repairs shall be subjected to all the routine & acceptance tests specified in the relevant ISS detailed in clause No. 9 of the technical specification (Section-V (A)) appended herewith. The CT PT sets failed under guarantee period shall be repaired by the contractor free of cost and will be accepted only after inspection by the authorized representative of the Nigam.
- 19.2 The CT PT sets which have been repaired out of the healthy coils taken out from the CT PT sets of similar make, type and capacity shall also be subjected to all the routine & acceptance tests as in case of other repaired CT PT sets.



However, on testing, if the CT PT sets fails in any test due to old healthy coils, the same shall be replaced by the new ones but no extra labour charges shall be paid to the contractor for such CT PT sets.

19.3 If required by the Superintending Engineer (MM), Jaipur Discom, Jaipur one CT PT sets at random will be got selected by the Inspecting Officer to verify physically the size of the conductor, no of turns, quantity of oil and quality of material used and workmanship etc. However, a tolerance of minus 10% in quantity of the oil mentioned on the nameplate will be admissible. In case of finding reduced weights of coil/oil, the repair cost of CT PT sets offered in that lot will be reduced accordingly in the same proportion and no extra payment towards loss will be paid to the contractor. In case there is no variation in the actual quantity and quality of repair work in reference to the estimate of that CTPT sets, the following extra charges will be paid for opening of CT PT sets at rate mentioned in the price schedule:

- i) Labour charges for assembly
- ii) Charges for baking of CT PT coils and/ or new CT assemblies under vacuum impregnation along with filtration of oil.
- iii) Cost of 10 % oil towards wastages.
- iv) Cost of new coils in place of unwounded coils (the unwounded coils will be reduced in the relevant bill)

19.4 The contractor will ensure that the best quality ISI approved material is used as far as possible. The Jaipur Discom reserved the right to get conducted any test of reasonable nature at the contractors premises, or at site, in addition to the aforesaid tests and those included in the rate contract at the contractors expenses to satisfy himself that the spare parts supplied and repairs etc. carried out/ comply with specifications. The contractor shall be required to rectify the defects, if any found in such tests at his own cost.

19.5 The contractor shall send copies of test certificate duly approved by inspecting officer to the concerned consignee(s) and to the concerned Superintending Engineer (M&P) for such each and every CT PT sets.

## 20. **INSPECTIONS AND TESTING:**

20.1 The contractor shall give at least 7 days notice to the concerned SE(M&P) of Jaipur Discom for inspection of minimum lot of 20 Nos. or the total quantity of lot/work order whichever is less repaired CT PT sets so that Nigam may depute its representatives for inspection and testing of the same. The contractor shall dispatch no CT PT sets without inspection and testing clearance.

20.2 The contractor shall record the following certificate on the invoice/ packing list (challans) of each CT PT sets.

"Certified that the consignment (lot) of repaired CT PT sets inspected by Sh. .... Designation..... has been got tested and cleared. The test results were found to be within the values specified in the relevant ISS/contract as per true copy of test results enclosed."

Witness by Sh. .... Designation.....

**21. MATERIALS:**

- 21.1 All material used in the repairs/construction of the equipment forming the contract shall be of the best quality of its kind and except where modified by the specification, shall comply in all respect with the standard laid down by ISI or British Engineer Standard Association wherever the Indian Standards are not formulated.
- 21.2 The spares/equipments to be used in the repairs of the damaged equipment should comply with one consistence set of standards.
- 21.3 In order to avoid in consistencies in electrical characteristics of bushings, the broken/damaged bushing with metal parts shall be replaced by the bushing of the same class and make as those found one in that CT PT sets as far as possible, or the entire set of bushing may be changed by a new set of bushings as per IS specifications, if required.

**22. EXTRAS:**

When asked in writing by the Superintending Engineer (O&M) to perform such extra work and supply such extra material, not covered within the scope of this specification as specified under various clauses of same, such work and material which is of most necessity shall be got complied by the contractor and its charges shall be paid extra at the rate and terms to be mutually agreed upon. This shall however, not exceed the economic limits of repairs.

**23. ATMOSPHERIC CONDITIONS:**

- 23.1 The CT PT sets after satisfactory repairs testing shall be suitable for operation on tropical climate and shall be able to withstand a wide range of temperature and climatic variations experienced in Rajasthan.
- |                                 |   |            |
|---------------------------------|---|------------|
| i) Annual rain falls (Max.)     | : | 100 cms.   |
| ii) Max. Ambient temp. in shade | : | 50 Deg. C. |
| iii) Max. relative humidity     | : | 100%       |
| iv) Min. temp. of air in shade  | : | -5 Deg. C. |
| v) Min. relative humidity       | : | 10%        |
- 23.2 The repaired CT PT sets may be exposed to the direct sun and shall be suitable for satisfactory operations under erratic climatic conditions. The damaged porcelain bushings requiring replacement shall be replaced by such bushing keeping in view that these should have ample margin of safety as regards flash over in order to eliminate all troubles due to condensation under sudden varying atmospheric conditions and trouble from dust.

**24. PAINTING:**

- 24.1 All metallic surfaces exposed to the weather and requiring painting shall be given one suitable priming coat after de-rusting and two finishing coats of best paint of Grey Colour. The rates for one coat spray painting without primer etc. shall also be quoted separately. The Ratio of CT PT Set shall be marked on the body after painting; it should be visible from ground at site.
- 24.2 The inside of CT PT sets shall be given suitable priming coat after de-rusting and two coats of best paint of zinc chromate or any other paint which may not cause any deterioration properties of the insulating oil by chemical reaction etc

**25. DESPATCH INTIMATION:**

- 25.1 After satisfactory repairs and testing the contractor is required to send intimation to the consignee/stores officer under intimation to the concerned Superintending Engineer(O&M). The intimation will contain information regarding quantity and the amount of the bill.
- 25.2 In addition to above the contractor shall be required to send the monthly statement to concerned SE (O&M) and SE (MM), Jaipur Discom, Jaipur of quantities of the CT PT sets of various makes, types and capacities received from various consignees and delivered back by 7<sup>th</sup> of every next month.

**26. RESPONSIBILITY FOR SAFE CUSTODY OF TRANSFORMERS DURING THE REPAIR PERIOD:**

The contractor shall be entirely responsible for the safe custody of CT PT sets from the day damaged CT PT sets are received by him from the consignee/stores officer up to the time of delivery back and will be fully responsible against any loss caused due to damage/theft/fire/flood/unforeseen event etc.

**27. STATEMENT OF CT PT SETS REPAIRED AND DELIVERED TO CONSIGNEE:**

The contractor will be required to send the following details of the CT PT sets repaired by him to the concerned Superintending Engineer (O&M) and Superintending Engineer (MM), Jaipur Discom, Jaipur.

A copy of invoice pertaining to the particulars of CT PT sets repaired by him immediately after delivery of the same to the concerned indenting/demanding officer (s)

A statement of CT PT sets received, repaired and delivered in the preceding month should be furnished in the following Performa, so as to reach by 7<sup>th</sup> of following month.

S.No.	Name of Circle CT PT sets Stores/received Sub- Stores. during the month	Qty. of total No. of CT PT. recd. for repair for the reporting month	Progressive total No. of CT PT. recd. for repair up to the reporting month	No. of CT PT sets for which joint inspection was carried up to end of month under, report and estimate have been approved also.
1.	2.	3.	4.	4.

Number of CT PT set repaired during the month under report	Number of repaired CT PT sets for which inspection & testing is pending to be done	Progressive total of number CT PT sets delivered after satisfactory repairs and testing up to the month under report.
6.	7.	8.

Beside above fortnightly information about CT PT sets failed under guarantee period and send for repair, shall also be furnished by the repairing firms in the following Performa:

S. No.	Rating	Make	CT PT sets	Work order No.& date	Date of repair	Date of failure	Date of receipt of CT PT set.	Date of Re-repair	Programme of repair	Remark
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.

## 28. RESPONSIBILITY OF CONTRACTOR AND COMPLETENESS:

28.1 The contractor shall be entirely responsible for the satisfactory execution of this contract in accordance with the terms of the rate contract laid down herein.

28.2 **Approval of the contract/sub-contract, test certificates or of test carried out by the repairer or the representatives of the Nigam shall not relieve him from any of his obligations to meet out all the requirements of these specifications or form the responsibilities for the satisfactory repair and working of the CT PT sets for the guarantee period.**

29. INTERCHANGEABILITY:

All parts shall be made accurately to standard gauge as far as possible so as to facilitate the replacement and repairs. All corresponding parts of similar make, type and capacity of CT PT sets including the spare parts shall be interchangeable.

30. RATE CONTRACT WITHOUT PREJUDICE:

The rate contract shall be without prejudice to any of the term of specification or the purchase order of the Nigam or any rate contract(s) of DGS&D or purchase department of any other Govt./Semi Govt. undertaking or of the other rate contract of Nigam what so ever it might be.

31. NUMBER OF QUANTITY TO BE CONTRACTED FOR:

The approximate number of CT PT sets to be got repaired is around **1000 Nos.** of various ratios. The orders for the repair of damaged CT PT sets shall depend on their capacity, delivery quoted, performance workmanship, financial status of the contractor, pending order in hand, firm's performance in executing pending orders apart from the rates quoted for items as mentioned under schedule of prices.

The Nigam reserves the right to place order for any quantity of undertaking the repairs by the rate-contracting firms during the period of the contract. It also reserves the right of placing any supply order of articles or repairing the failed/damaged unit provided that is included in the contract. If the total amount of repairs is expected to exceed the estimated amount of the order at the time of taking job on actual repairs, this shall be intimated to the SE (O&M), in advance who as an exceptional case may convey approval but limited to the economical limit of repair. In case it is found that contractors are not in a position to supply/execute the specific quantities or number/works within the period in which repairs/supplies/works are required to be completed the job will be got lifted from the firm's premises and shall be got repaired departmentally or through any other firm after imposing the due penalties as per stipulations of clause No. 5 above. The contractor will make its own arrangement for procurement of raw material in time to deliver repaired CT PT sets within specified time.

32. PARTIES TO THE CONTRACTS:

Nigam and its demanding officer aforesaid shall be deemed to be parties to the contract. The Superintending Engineer (MM), Jaipur Discom, Jaipur shall award the rate contract to the successful tenderers on behalf of Jaipur Discom, Jaipur. All disputes pertaining to the supplies/works under the contract shall be referred to the concerned circle S.E of respective zone. **Parties having their works outside the jurisdiction of Jaipur Discom, shall not be considered for awarding Rate Contract.**

33. PERIOD OF RATE CONTRACT:

The rate contract shall be valid for a period of 2 years from the date of award of contract and can be extended further for a period of three months or part thereof on mutual consent. All orders placed within this period shall be got executed by the contractor even though the delivery of the repaired equipment or spares supply order falls beyond the expiry of the rate contract period.