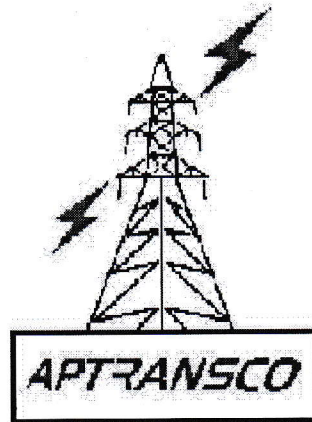


**TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED**



**STANDARD SCHEDULE OF RATES**

**FOR LABOUR ITEMS OF 220 KV & 132 KV  
TRANSMISSION LINES AND SUBSTATIONS  
WORKS AND FOR O&M WORKS OF  
TRANSMISSION SYSTEM**

**FOR THE YEAR 2015-16 TO 2018-19**

**(With effect from the date of issue of T.O.O. Ms. No.989 , dated.09.11.2018.)**

**TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED**  
VIDYUT SOUDHA :: HYDERABAD

APTRANSCO – Standard Schedule of Rates for labour items of 220 kV & 132 kV Transmission lines and substations works and rates for O&M works of Transmission system for the year 2015-16 to 2018-19– Communicated – Reg.

**T.O.O. No. CE (Construction) / Ms. No.989,**

**dt.09.11.2018**

Read the following:-

Ref:- T.O.O.(CE-Construction) MS. No.24, dated 27.08.2014

APTRANSCO is communicating Standard Schedule of rates for labour items of 220 kV & 132 kV Transmission lines and substations capital works including O&M works annually for adoption in preparation of estimates. The above reference is such orders for communicating the rates (labour portion) for the year 2014-15.

Similarly, the above SSR is updated duly enhancing to the extent of Inflation in labour charges as declared by Government of India for the year 2015-16 to 2018-19.

**ORDER**

Standard Schedule of Rates for labour items of 220 kV & 132 kV Transmission lines and substations works and rates for O&M works of Transmission system for the year 2015-16 to 2018-19 approved by Transmission Corporation of Andhra Pradesh is communicated herewith for adoption in preparation of estimates.

The standard scheduled of Rates for 2015-16 to 2018-19 will come into force from the date of issue of this T.O.O.

(BY ORDER AND IN THE NAME OF TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED)

Sd/- J.V.RAO  
**DIRECTOR (TECHNICAL)**

To

The Chief Engineer/Construction/VS/Vijayawada.

The Chief Engineer/Transmission/VS/ Vijayawada.

The Chief Engineer/LI,EA&Opn./VS/ Vijayawada.  
 The Chief Engineer/400kV construction/VS/ Vijayawada.  
 The Chief Engineer/IT&Telecom/VS/ Vijayawada.  
 The Chief Engineer/Civil/VS/ Vijayawada.  
 The Chief Engineer/Zone/Vijayawada

The Superintending Engineer/OMC/Vijayawada.  
 The Superintending Engineer/OMC/Guntur.  
 The Superintending Engineer/OMC/Nellore.  
 The Superintending Engineer/OMC/ Ongole.  
 The Superintending Engineer/OMC/ Anantapur.  
 The Superintending Engineer/OMC/Tirupathi  
 The Superintending Engineer/OMC/Visakhapatnam.  
 The Superintending Engineer/OMC/Vijayanagaram  
 The Superintending Engineer/OMC/Srikakulam.  
 The Superintending Engineer/OMC/Rajahmundry.  
 The Superintending Engineer/OMC/Eluru.

The Superintending Engineer/Construction/Kadapa  
 The Superintending Engineer/ O &M /Kadapa  
 The Superintending Engineer/Construction/Kurnool  
 The Superintending Engineer/TLC/LIS/Kurnool.  
 The Superintending Engineer/400kV/OMC/Vijayawada.  
 The Superintending Engineer/400kV/OMC/Kadapa.  
 The Superintending Engineer/400kV/ O &M/Visakhapatnam.  
 The Superintending Engineer/O&M/Kurnool

The Superintending Engineer/Telecom/Kadapa.  
 The Superintending Engineer/Telecom/Vijayawada.  
 The Superintending Engineer/Telecom/Vishakapatnam.  
 The Superintending Engineer/Civil/TLC/Vijayawada.  
 The Superintending Engineer /Civil/TLC/Kadapa.  
 The Superintending Engineer /Civil/TLC/Visakhapatnam

The Superintending Engineer/Construction /PM /VS/ Vijayawada  
 The Superintending Engineer/PM/400 KV /VS/ Vijayawada.  
 The Superintending Engineer/LIS /VS/ Vijayawada.  
 The Superintending Engineer/O&M/Lines/Transmission/VS/Vijayawada.  
 The Superintending Engineer/O&M/Substations/ Transmission /VS/ Vijayawada.

The Executive Engineer/Construction/Vijayawada.  
 The Executive Engineer/ Construction /Gunadala.  
 The Executive Engineer/ Construction /Guntur.  
 The Executive Engineer/ Construction /Nellore.  
 The Executive Engineer / Construction /Ongole.  
 The Executive Engineer/ Construction /Thirupathi.

The Executive Engineer/ Construction /Rajahmundry.  
 The Executive Engineer/ Construction /Vizag.  
 The Executive Engineer/ Construction /Kurnool  
 The Executive Engineer/TLC/LIS/Division-I/Kurnool.

The Executive Engineer/TLC/LIS/Division-2/Kurnool.  
The Executive Engineer/ Construction /Kadapa.

The Executive Engineer/Div-I/400kV L&SS/Vijayawada.  
The Executive Engineer/Div-I/400kV L&SS/Guntur.  
The Executive Engineer/Div-I/400kV L&SS/Krishnapatnam.  
The Executive Engineer/Div-I/400kV L&SS/Rajahmundry.

The Executive Engineer /O&M 400kV TL&SS / Vemagiri.  
The Executive Engineer /O&M 400kV TL&SS / Rajahmundry.  
The Executive Engineer /O&M 400kV TL&SS / Chittoor.  
The Executive Engineer /O&M 400kV TL&SS /Manubolu (Nellore district).  
The Executive Engineer /O&M 400kV TL&SS /Kalpaka (Visakhapatnam district).

The Executive Engineer/TLC/TRE/Kadapa  
The Executive Engineer/TL&SS / Nagarjunasagar  
The Executive Engineer/ MRT / EHT / TLC / Vijayawada  
The Executive Engineer/ MRT / EHT / TLC / Nellore  
The Executive Engineer/ TL&SS / Vijayawada  
The Executive Engineer/ TL&SS / Guntur  
The Executive Engineer/ MRT / TL&SS / Vijayawada  
The Executive Engineer/ MRT / TL&SS / Nellore  
The Executive Engineer/ TL&SS / Nellore  
The Executive Engineer/ TL&SS / Ongole  
The Executive Engineer/ TL&SS / Bommur  
The Executive Engineer/ TL&SS / Nidadavole  
The Executive Engineer/ HVDC / TL&SS Circle / Rajahmundry  
The Executive Engineer/ MRT / EHT / Rajahmundry  
The Executive Engineer/ TL&SS / Gazuwaka  
The Executive Engineer/ TL&SS / Garividi  
The Executive Engineer/ MRT / TL&SS / Vizag  
The Executive Engineer/ TL&SS / Kadapa  
The Executive Engineer/ TL&SS / Yerraguntla  
The Executive Engineer/ TL&SS / Tirupathi  
The Executive Engineer/ EHT / MRT / Kadapa  
The Executive Engineer/ MRT / TL&SS / Kurnool  
The Executive Engineer/ MRT / TL&SS / Ananthapur  
The Executive Engineer/ Windfarms / Ananthapur  
The Executive Engineer/ TL&SS / Kurnool  
The Executive Engineer/ TL&SS / Ananthapur  
The Executive Engineer/ O&M / 400 KV / Kurnool  
The Executive Engineer/ O&M / 400 KV Lines / Srisailam

The Executive Engineer/Civil/TLC/Rajahmundry.  
The Executive Engineer/Civil/TLC/Kadapa.

Executive Engineer-1/Construction/VS/Vijayawada.  
Executive Engineer-2/Construction/VS/Vijayawada.  
Executive Engineer-3/Construction/VS/Vijayawada.  
Executive Engineer/LIS/VS/ Vijayawada.  
Executive Engineer/Design/Construction/VS/Vijayawada.

Executive Engineer-1/PM/400kV Construction/VS/Vijayawada.  
Executive Engineer-2/PM/400kV Construction/VS/Vijayawada.  
Eme-1/Transmission/VS/Vijayawada.  
Eme-2/Transmission/VS/Vijayawada.  
Eme-3/Transmission/VS/Vijayawada.

PS to Chairperson Managing Director/APTransco/VS/ Vijayawada.  
PS to Joint Managing Director/ Vigilance & Security)(FAC)/APTransco/VS/Vijayawada.  
PS to Director /Projects/ APTransco/VS/Vijayawada.  
ADE/Tech to Director /Grid,Transmission& Management/ APTransco/VS/Vijayawada.  
PS to Director /Finance & Revenue/ APTransco/VS/ Vijayawada.  
The FA & CCA (Accounts)/APTransco/VS/Vijayawada.  
ADE/Tech to Chief Engineer/Construction/APTransco/VS/Vijayawada

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**PREAMBLE**

1. The Rates for the item of works (Line & Substations) involved under special conditions in the existing SSR 2015-16 to 2018-19 are as follows:

## (I) TRANSMISSION LINE WORKS:

| Sl. No. | Description of work   | % Over the basic labour rates |
|---------|---|-------------------------------|
| 1.      | River Crossing with JC type towers  | 100% extra                    |
| 2.      | 2 <sup>nd</sup> Circuit Stringing with 1 <sup>st</sup> Circuit lives.   | 75% extra                     |
| 3.      | <u>Works under shutdown:</u><br><br>This is applicable under the following conditions only.<br>i. Pre-programmed for interruption of line.<br>ii. Pre-arranged replacement / rectification of line materials. | 50% extra                     |
| 4.      | Dismantling works   | 75% of Normal Rate.           |
| 5.      | Emergency Works such as break down works.<br>This will not be applicable for pre-arranged shutdown works.   | 100% extra                    |
| 6.      | Stringing of railway crossings  | 100% extra                    |
| 7.      | National and State High way crossings   | 25% extra                     |
| 8.      | Tree cutting & Jungle Clearance in Tr. Line works as the works are in scattered areas.  | 100% extra                    |
| 9.      | DC Works under shutdown   | 100% extra                    |

## SUBSTATIONS AND OTHER WORKS:

| Sl. No. | Description of work  | % Over the Basic labour rates |
|---------|--|-------------------------------|
| 1.      | <u>Works under shutdown:</u><br><br>This is applicable under the following conditions only.<br>i. Pre-programmed for interruption of equipment.<br>ii. Pre-Programmed replacement of bus in Substation.<br>iii. Pre-arranged replacement / rectification of equipment. | 50% extra                     |

| Sl. No. | Description of work   | % Over the Basic labour rates   |
|---------|---|---|
| 2.      | Dismantling works   | 75% of Normal Rate.   |
| 3.      | <u>Emergency Works such as break down works.</u><br><u>This will not be applicable for pre-arranged shutdown works.</u> | 100% extra  |
| 4.      | Idle trip (No load) rate of the low-bedded trailer for movement of Power Transformers.                                  | 50% of basic labour rate of loaded trip. Shortest distance from / to the place of availability of low bedded trailer shall be considered. |

Note:- However if more than one special condition such as emergency, shutdown, 2<sup>nd</sup> circuit stringing with First circuit live and breakdown etc are applicable for a particular work item / situation, only one condition with maximum extra rate out of applicable special conditions can be allowed. Applying more than one special condition for any item is to be dispensed.

**2 For EHT Transmission line works, Keeping scattered in nature, some extra provisions are provide and are as follows**

a. 5% extra provision on the basic rates of APTRANSCO towards scattered area mobilization efforts in general areas

**Or**

b. 10% extra provision on the basic rates of APTRANSCO towards scattered area mobilization efforts in difficult areas. The concerned SE/TLC has to certify that entire line passes through difficult terrain / areas duly furnishing the justification.

Note:- If 10% extra toward mobilization efforts in difficult areas is applicable for a work, then the 5% extra towards mobilization effort in general areas is not applicable.

c. Transmission line erection works, Uniform area allowance minimum of 25% on basic labour charges for the entire state as recommended by Board of Chief Engineers will be allowed against weighted average of area allowance mentioned in Schedule of rates except in Greater Municipal corporation limits. If the entire line is with in the Greater Municipal Corporation limits, area allowance shall be considered as mentioned in Common SSR 2014-15. This uniform area allowance is applicable only for the Transmission line erection works. However area allowance shall be considered as adopted from Common SSR 2014-15 for the works other than transmission line works.

- 3(a) 10% extra to the rate of earth flat (material) is allowed towards wastage, cleats and overlap etc., while preparing the estimate as the billing for this item is on Running Meters basis and after laying of earth mat.
- 3(b) For stringing of conductor for small modification works, if the length of the line is less than 0.5 KM, 0.5KM is considered and if the length of the line is greater than 0.5 KM and less than 1 KM, 1KM is considered, in the preparation of estimate.
- 3(c) For survey of small length of lines, if the length of line is less than 1KM, then 1KM is considered for survey of small length of lines in the preparation of estimate.
- 3(d) The rates for tree cutting and jungle clearance may be followed as per Common SSR of Govt of Andhra Pradesh.

#### **4. AREA ALLOWANCES:**

##### **A) CORPORATIONS & MUNICIPALITIES:**

- a) (i) 25% extra over the rates on labour component of works is allowed in all Municipal Corporation Limits of Andhra Pradesh except Greater Hyderabad, Greater Visakhapatnam and Vijayawada municipal Corporations ( up to a belt of 12 Kms. from Municipal Corporation limits ) and other corporations as notified by the Government from time to time.
- (ii) 40% extra over the rates on labour component of works for Greater Hyderabad, Greater Visakhapatnam and Vijayawada Municipal Corporation (up to a belt of 12 Kms. from Municipal Corporation limits).
- b) Allow 20% extra over basic rates on labour component of works in all District Headquarters and the remaining Municipal limits (up to a belt of 12 Kms. from Municipal limits).
- c) For works at Tirumala Hills in Chittoor District, 40% extra over the basic rates of labour component is allowed.
- d) For works at Horsely hills in Chittoor District, 30% extra over the basic rates of labour component is allowed.
- e) 20% extra over the basic rates of labour component for Tirupathi Municipal Corporation is allowed.

**B) JAIL COMPOUNDS:**

15% extra is allowed over basic labour rates for the work in the Jail compounds. Only equivalent number of Man Mazdoor shall be provided in the Jail premises and no women Mazdoor are allowed inside.

**C) INDUSTRIAL AREA:**

20% over basic rates on labour component works allowed for works situated within 10 Kms belt of Industrial area of Ibrahimpatnam, Vuyyuru, Jaggaiahpeta in Krishna District, Macherla, Gurajala, Challapalli in Guntur District Garividi in Vijayanagaram District, Renigunta in Chittoor District and Yerraguntla & Mangampet in Kadapa District, Hindupur, Tadipatri, Anantapur, Guntakal, Rayalcheruvu, Yadiki of Anantapur District and Adoni, Dhone, Cement Nagar, Nandyal, Kurnool, Yemmiganur & Bethamcherla of Kurnool District ,Anakapally of Vishakhapatnam District.

**D) AGENCY / TRIBAL AREAS:**

- a) 25% extra is allowed for the works located with in the interior Agency / Tribal limits, i.e. for the works located with in & upto 16 KMs from any all weather route inside Agency / Tribal.
- b) 40% extra is allowed for the works located with in the interior Agency / Tribal limits, i.e. for the works located beyond 16 KMs from any all weather routes inside Agency / Tribal. The extra percentage under Agency / Tribal areas allowance may be allowed on the labour component and on the labour charges in the rates for conveyance of materials.

**E) GHAT ROADS:**

For Ghat Roads steeper than 1 in 20, the length of the road may be taken as 1.5 times the existing length of the road for the purpose of leads only for conveyance of materials based on the certificate for the Ghat Road given by the Superintending Engineer concerned. Under compelling circumstances, the concerned Chief Engineer can adopt the equivalent length of road as 2 ½ times of actual length.

**Note:** If more than one area allowance ( such as those ) for (1) Municipalities (2) Agency / Tribal areas (3) Industrial areas are applicable for a particular situation, only the maximum out of the allowable percentages is to be allowed.

5. 13.615% on basic labour rates towards for contractor's overheads and profit including labour importation is applicable only from SSR 2018-19 for Turnkey projects (New substations, Lines, 33kV features & Bay extension works) of more than 1 Crore and not applicable to O&M works and other than turnkey works.

Contractor's over heads and profit including Labour importation 13.615% is allowed on basic labour rates.

The overhead charges include the following:

- Site accommodation, setting up plant, access road, water supply, electricity and general site arrangements.
- Office furniture, equipment and communications.
- Expenditure on:
  - Corporate office of contractor.
  - Site supervision.
  - Documentation and "as built" drawings.
  - Mobilization / de-mobilization of resources.
  - Labour camps with minimum amenities and transportation to work sites.
  - Light vehicles for site supervision including administrative and managerial requirements.
  - Laboratory equipment and quality control including field and laboratory testing.
  - Minor T&P and survey instruments and setting outworks, including verification of line, dimensions, trial pits and bore holes, where require.
  - Watch and ward.
  - Traffic management during construction
  - Expenditure on safe guarding environment.
  - Sundries
  - Financing Expenditure.
  - Sales / Turn over tax.
  - Work Insurance / compensation.
  - AutoCAD Tower /Structure drawings of required sets.
  - AutoCAD shop drawings of Towers /Structures of required sets.
  - AutoCAD Substation layout.
  - Testing and commissioning of the equipment.

6. (i) The area allowances, COP's and Mobilization charges are not applicable on Fabrication charges and Galvanization Charges.
- (ii) The area allowance shall be applicable for O&M and RMI works also on par with construction works.
- (iii) The mobilization charges shall be applicable for O&M & RMI works of lines also on par with construction works.

The area allowances are applicable for electrical works (labour), where the value of work is more than Rs.20.00 lakhs (electrical & civil). But this (APTRANSCO SSR) is not applicable for only Civil works.

7. (a) **TREE CUTTING AND CLEARING OF JUNGLE**

Please refer Common SSR of Board of Chief Engineers for the year 2017-18.

7 (b) **THE (LEAD) CONVEYANCE CHARGES FOR TRANSPORTATION OF EQUIPMENT / MATERIALS.**

Please refer Common SSR of Board of Chief Engineers for the year 2017-18.

8. **Erection of Power Transformers and Oil filtration Works**

The rates communicated by CE/Transmission vide letter No.CTO/121/F. Erection RC/D.No.333/15,dt.31.03.2015 and subsequent Amendment No.I, dt. 31.03.2017 and Amendment No.II, dt. 22.01.2018 on rate contract basis for erection, dismantling, transportation and oil filtration of power transformers through private agency with GST are valid up to 31.03.2019.

Area Allowances, Special provisions and any other allowances are not applicable on the rates of rate contract.

The rates mentioned under the rate contract include all taxes & duties, allowances and all extra provisions including Transport etc. excluding service tax.

In the case of the works of Handling, Erection and Filtration of power Transformers will be carried out by the department, in such cases, area allowances, special provisions other than shutdown charges, taxes and duties are not applicable.

**Note:**

- (i) Shutdown charges are applicable only for the works carried out during shutdown period. The same has to be certified by the concerned Superintending Engineer.
- (ii) Whenever double boom crane is utilized for PTR works of 80 MVA & above capacity, 50% extra over the existing crane charges are applicable. However, the same has to be certified by concerned Superintending Engineer.

9. **Civil Engineering Works in Transmission lines & Substations:**

For Civil items works of Transmission Lines and Substations the common SSR 2018-19 for engineering departments shall be followed in Toto. Some provisions made in T.O.O.CE (Civil) Ms No.148, dated.21.10.2009 are also applicable for civil works. But the APTRANSCO SSR 2015-16 to 2018-19 is not applicable for Civil Works.

10. In respect of Cement and Steel rods the procedure indicated in Common SSR for all Engineering Departments shall be adopted for updating of estimates at the time of finalization of tenders.
11. All statutory levies such as GST, Cess for labour welfare if any, are based on the prevailing notified rate, shall have to be added in the estimate
12. The S.S.R will come into force with immediate effect until further orders.

Sd/- J.V.RAO  
DIRECTOR (TECHNICAL)

//FORWARDED BY ORDER//

*J. Jyothi*

EXECUTIVE ENGINEER-3  
O/o Chief Engineer (Construction)  
APTRANSCO  
Vidyut Soudha, Vijayawada

8

ANNEXURE - I  
ERECTION OF 220kV & 132 kV TRANSMISSION LINES

| Sl. No. | Item No. | Description of Item   | Unit | SS Rate for 2015-16 (Rs.) | SS Rate for 2016-17 (Rs.) | SS Rate for 2017-18 (Rs.) | SS Rate for 2018-19 (Rs.) |
|---------|----------|---|------|---------------------------|---------------------------|---------------------------|---------------------------|
| CL1     | 1        | Check Survey, peg marking the tower positions on ground, conforming to the approved Profile and tower schedules using GPS, Total stations, Digital theodolites etc.<br>"the rate is also applicable for re-check survey if any done due to ROW problems"  | kM   | 4027.04                   | 4263.02                   | 4357.23                   | 4530.21                   |
| CL2     | 2        | Conducting reconnoitery and preliminary survey along bee line with three alternative routes and furnishing report for selecting the best proposal for approval, including cost & conveyance of all materials, hire charges of equipment, tools and plant, preparation of drawings and reports, labour charges, complete for finished item of work as per the directions of Engineer-in-charge at site. <i>(With Theodolite / With GPS equipment ( As per Clause 4.9 of survey) /With total station equipment).</i>  | RKM  | 3657.87                   | 3872.22                   | 3957.80                   | 4114.92                   |
|         | 3        | Conducting detailed survey by taking the levels along the route to a corridor of 15 mtrs. width on either side of alignment, at every 20 mtrs. interval and wherever there is a steep increase/decrease in ground profile duly indicating the chainage between angle points, river crossings, railway crossing and major highway crossings and plotting the profiles and preparation of vicinity maps to the standard scales. The survey includes clearing of bushes, branches of tree, crops and shrubs wherever encountered for detailed survey for viewing, for fixing anchor towers and also taking levels etc. required for conducting detailed surveys. |      |                           |                           |                           |                           |
|         |          | <i>This work can be done with Theodolite or with GPS equipment (As per clause no.4.9 of survey) or with total station equipment. This work involves the following items.</i>  |      |                           |                           |                           |                           |
| CL3     | i)       | Tower schedules as per tower spotting requirements plotted on reproducible tracing of profile original with one extra copy shall be given . <i>Towers Schedules should be submitted with GPS Co-ordinates. Identification of wind zones, collection of Hydraulic data of rivers / drains from competent authority.</i>  | RKM  | 12558.20                  | 13294.11                  | 13587.91                  | 14127.35                  |
| CL4     | ii)      | Taking earth resistivity at an interval of 1 Km by electrical resistivity method (4 point method) or by ERM method.   | Loc  | 913.94                    | 967.50                    | 988.88                    | 1028.14                   |
|         | iii)     | Preparing of PTCC questionnaire, topo sheets extracts with marking of the proposed line. Soil resistivity report, tower sketch, station single line diagram etc. (30 copies/sets)   |      |                           |                           |                           |                           |
| CL5     | 3 iii) a | up to 25KM  | Job  | 4876.46                   | 5162.22                   | 5276.31                   | 5485.78                   |
| CL6     | 3 iii) b | Above 25KM  | Job  | 8939.47                   | 9463.32                   | 9672.46                   | 10056.46                  |

| Sl. No. | Item No. | Description of Item  | Unit          | SS Rate for 2015-16 (Rs.) | SS Rate for 2016-17 (Rs.) | SS Rate for 2017-18 (Rs.) | SS Rate for 2018-19 (Rs.) |
|---------|----------|--|---------------|---------------------------|---------------------------|---------------------------|---------------------------|
| CL7     | 3 v)     | Enumeration and numbering of trees, & marking on tree with white letters on yellow paint measuring girth and height of the trees and plotting in the profile. The trees enumerated shall be shown in profile on either side of centre line clearly, <u>up to required corridor for 132kV Line -27 Metres &amp; 220kV Line -35 Meters</u> indicating name of tree, girth & height. Separate tree schedule should be submitted along with the profile for arriving tree compensation amount. | Each          | 17.98                     | 19.03                     | 19.45                     | 20.22                     |
| CL8     | 3 (vi)   | Preparation of ground profiles for Railway crossing, River crossing and EHV power line crossing separately wherever required.  | Each crossing | 2721.72                   | 2881.21                   | 2944.88                   | 3061.79                   |
|         |          | The above rates shall include cost and conveyance of all materials hire charges of equipment tools & plant, preparation of profile drawing, painting of trees, labour charges, preparation of report etc., complete for finished item of work as per instructions of Engineer-in-charge.   |               |                           |                           |                           |                           |
| CL9     | 4        | Excavation of trial pits of standard dimensions of 1 mtr X 1 mtr. width upto 3 mtrs. depth at 1 KM interval or wherever there is abnormal change in topography and taking observation of soil strata for classification of foundation and position of existing ground water table/depth of water in the existing open wells if any and back filling the trial pits after vetting by Departmental officials.  | Each          | 1506.31                   | 1594.58                   | 1629.82                   | 1694.52                   |
|         | 5        | <u>Setting of stubs with stub-setting template</u> : Erection of stubs, stub template, fixing of jacks for supporting template, alignment and levelling for exact location of stubs of stubsetting template, dismantling of template after completion of initial curing of C.C., movement of template from one location to other location (A minimum lead of 1 KM is adopted).   |               |                           |                           |                           |                           |
| CL10    | (a)      | 132 KV P, R & S-Type Towers  | Loc.          | 7187.75                   | 7608.95                   | 7777.11                   | 8085.86                   |
| CL11    | (b)      | 220 KV A, B, C & D-Type Towers   | Loc.          | 10474.34                  | 11088.14                  | 11333.19                  | 11783.12                  |
| CL12    | (c)      | 132 KV Multi circuit Towers  | Loc.          | 8984.95                   | 9511.47                   | 9721.67                   | 10107.62                  |
| CL13    | (d)      | 220 KV Multi circuit Towers  | Loc.          | 13091.33                  | 13858.48                  | 14164.75                  | 14727.09                  |
| CL14    | (e)      | 132kV Narrow based Multi Circuit Towers.   | Single pit    | 8261.42                   | 8745.54                   | 8938.82                   | 9293.69                   |
| CL15    | (f)      | 220kV Narrow based Multi Circuit Towers.   | Single pit    | 12053.63                  | 12759.97                  | 13041.97                  | 13559.74                  |
| CL16    | (g)      | Pole/structure for termination of 220/132kV cables   | Loc.          | 8085.82                   | 8559.65                   | 8748.82                   | 9096.15                   |
| CL17    | (h)      | 220 /132 kV Narrow based tower   | Loc.          | 11782.83                  | 12473.30                  | 12748.96                  | 13255.09                  |
| CL18    | 6(a)     | Erection of tower structures, including all types of extensions except JC type towers (stub template erection and dismantling are not to be included) (including 3 mtr., 6 mtr. , 9 mtr., & 12 mtr. extensions)  | MT            | 4757.98                   | 5036.80                   | 5148.11                   | 5352.49                   |
| CL19    | 6(b)     | Erection of all types of narrow based towers / multi circuit tower structures / <u>narrow based multi circuit towers structures</u> , including all types of extensions except JC type towers (stub template erection and dismantling are not to be included) (including 3 mtr., 6 mtr. , 9 mtr., & 12 mtr. extensions)  | MT            | 6666.26                   | 7056.90                   | 7212.86                   | 7499.21                   |

| Sl. No. | Item No. | Description of Item  | Unit | SS Rate for 2015-16 (Rs.) | SS Rate for 2016-17 (Rs.) | SS Rate for 2017-18 (Rs.) | SS Rate for 2018-19 (Rs.) |
|---------|----------|--|------|---------------------------|---------------------------|---------------------------|---------------------------|
| CL20    | 6(c)     | Erection of all types of 'JC' Type tower structures, including all types of extensions (stub template erection and dismantling are not to be included) (including 'O' based, Extended and Truncated)   | MT   | 8569.24                   | 9071.40                   | 9271.88                   | 9639.97                   |
| CL22    | 6(d)     | Erection of pole/structure for 220/132 kV cable termination  | MT   | 5712.12                   | 6046.85                   | 6180.49                   | 6425.86                   |
|         | 7        | STRINGING OF POWER CONDUCTOR: Hoisting of tension insulators and Suspension insulators, paving out the conductor, rough sagging, Jointing, tensioning, clipping and fixing of preformed Armour rods and vibration dampers. measuring ground clearances wherever necessary. Which excludes the works involved in the crossing of LT, 11kV & 33kV power lines viz dismantling and restringing of conductor                                     |      |                           |                           |                           |                           |
| CL23    | (i)      | 3 Nos. Zebra conductors  | RKM  | 40579.32                  | 42957.27                  | 43906.63                  | 45649.72                  |
| CL24    | (ii)     | 6 Nos. Zebra conductors  | RKM  | 60866.87                  | 64433.67                  | 65857.65                  | 68472.20                  |
| CL25    | (iii)    | 2 Nos. Panther conductors  | RKM  | 21637.30                  | 22905.25                  | 23411.46                  | 24340.89                  |
| CL26    | (iv)     | 3 Nos. Panther conductors  | RKM  | 32459.65                  | 34361.79                  | 35121.19                  | 36515.50                  |
| CL27    | (v)      | 6 Nos. Panther conductors  | RKM  | 51398.50                  | 54410.45                  | 55612.92                  | 57820.75                  |
| CL28    | (vi)     | 2 Nos. Moose conductors  | RKM  | 34265.32                  | 36273.27                  | 37074.91                  | 38546.78                  |
| CL29    | (vii)    | 3 Nos. Moose conductors  | RKM  | 51398.50                  | 54410.45                  | 55612.92                  | 57820.75                  |
| CL30    | (viii)   | 6 Nos. Moose conductors  | RKM  | 81151.24                  | 85906.70                  | 87805.24                  | 91291.11                  |
| CL31    | (ix)     | 3 Nos. Bear conductors   | RKM  | 40579.32                  | 42957.27                  | 43906.63                  | 45649.72                  |
| CL32    | (x)      | 6 Nos. Bear conductors   | RKM  | 60866.87                  | 64433.67                  | 65857.65                  | 68472.20                  |
| CL33    | (xi)     | 3 Nos. Dog conductors  | RKM  | 24344.21                  | 25770.78                  | 26340.31                  | 27386.02                  |
| CL34    | (xii)    | 6 Nos. Dog conductors  | RKM  | 38547.29                  | 40806.16                  | 41707.98                  | 43363.79                  |
|         |          | STRINGING OF HTLS POWER CONDUCTOR using tension -puller machine: Hoisting of tension insulators and Suspension insulators, paving out the conductor, rough sagging, Jointing, tensioning, clipping and fixing of preformed Armour rods and vibration dampers. measuring ground clearances wherever necessary. Which excludes the works involved in the crossing of LT, 11kV & 33kV power lines viz dismantling and restringing of conductor. |      |                           |                           |                           |                           |
| CL35    | (i)      | 3 Nos Moose Conductors   | RKM  | 190404.00                 | 201561.67                 | 206016.18                 | 214195.02                 |
| CL36    | (ii)     | 6 Nos Moose Conductors   | RKM  | 285606.00                 | 302342.51                 | 309024.28                 | 321292.54                 |
| CL37    | (iii)    | 3 Nos Zebra Conductors   | RKM  | 179826.00                 | 190363.80                 | 194570.84                 | 202295.30                 |
| CL38    | (iv)     | 6 Nos Zebra Conductors   | RKM  | 269739.00                 | 285545.71                 | 291856.27                 | 303442.96                 |
| CL39    | (v)      | 3 Nos Panther Conductors   | RKM  | 169248.00                 | 179165.93                 | 183125.50                 | 190395.58                 |
| CL40    | (vi)     | 6 Nos Panther Conductors   | RKM  | 253872.00                 | 268748.90                 | 274688.25                 | 285593.37                 |
| CL41    | 8        | Stringing of Earthwire: Fixing hardware, paving out earth wire, jointing, tensioning, stringing and clamping of 7/3.15 mm high tensile galvanised steel wire.  | RKM  | 6494.89                   | 6875.49                   | 7027.44                   | 7306.43                   |
| CL42    | 9        | Earthing of towers including cost of Excavation, Back-filling, including cost of 25 mm dia 2.5 mm thick, class 'C' G.I. pipe of 3.00 Mtrs length with 50X6 mm G.I. Flat 4.05 Mtrs long, BH Coke, Salt etc., and measuring tower footing resistance.  | Nos. | 4129.65                   | 4371.65                   | 4468.26                   | 4645.65                   |

| Sl. No. | Item No. | Description of Item   | Unit          | SS Rate for 2015-16 (Rs.) | SS Rate for 2016-17 (Rs.) | SS Rate for 2017-18 (Rs.) | SS Rate for 2018-19 (Rs.) |
|---------|----------|---|---------------|---------------------------|---------------------------|---------------------------|---------------------------|
| CL43    | 10       | Slant Earthing of towers including cost of Excavation, Back-filling, including cost of 25 mm dia 2.5 mm thick, class 'C' G.I. pipe of 3.00 Mtrs length, with 50x6mm G.I. Flat of 4.05 Meters, BH Coke, Salt etc., and measuring tower footing resistance.                   | Nos.          | 4129.65                   | 4371.65                   | 4468.26                   | 4645.65                   |
| CL44    | 11       | Earthing of towers including cost of Excavation, Back-filling, including cost of 25 mm dia 2.5 mm thick, class 'C' G.I. pipe of 3.00 Mtrs length, <u>BH Coke</u> , Salt etc., and measuring tower footing resistance. (Without GI Flat ) for counter poise earthing.        | Nos.          | 3361.69                   | 3558.69                   | 3637.34                   | 3781.74                   |
| CL45    | 12       | Counterpoise earthing including clamping devices and terminal lugs, but excluding cost of steel wire.   | Rmts          | 37.02                     | 39.19                     | 40.06                     | 41.65                     |
| CL46    | 13       | Half round welding of G.I.bolts and nuts of towers in the section between ground level & upto bottom X-arm level including all bolts connecting the bracings at the bottom X-arm level and painting the welded portion with one coat of zinc rich paint.                    | Each          | 16.92                     | 17.91                     | 18.31                     | 19.04                     |
| CL47    | 14       | Half round welding of G.I.bolts and nuts of towers in the section between ground level & upto bottom X-arm level including all bolts connecting the bracings at the bottom X-arm level and painting the welded portion with one coat of zinc rich paint- For JC type towers | Each          | 25.39                     | 26.88                     | 27.47                     | 28.56                     |
| CL48    | 15       | Laying of 33 kV 400 sq.mm XLPE cable  | Rmts          | 276.09                    | 292.27                    | 298.73                    | 310.59                    |
| CL49    | 16       | Termination of 400 sq.mm XLPE cable   | Each          | 5020.32                   | 5314.51                   | 5431.96                   | 5647.61                   |
| CL50    | 17       | Dismantling & re stringing of 33 kV conductor (all types of conductors) for crossing of 33 kV line during stringing of EHT lines.   | Per conductor | 2623.34                   | 2777.07                   | 2838.44                   | 2951.13                   |
| CL51    | 18       | Dismantling & re stringing of 11 kV conductor (all types of conductors) for crossing of 11 kV line during stringing of EHT lines  | Per conductor | 1435.43                   | 1519.55                   | 1553.13                   | 1614.79                   |
| CL52    | 19       | Dismantling & re stringing of LT conductor/cables for crossing of LT line (all types) during stringing of EHT lines   | Per conductor | 903.36                    | 956.30                    | 977.43                    | 1016.23                   |

Sd/- J.V.RAO  
DIRECTOR(TECHNICAL)

// FORWARD BY ORDER //

*J. Jyothee*  
EXECUTIVE ENGINEER-3  
O/o Chief Engineer(Construction)  
APTRANSCO  
Vidyut Soudha, Vijayawada

ANNEXURE - II  
ERECTION OF 220kV, 132 kV & 33kV SUBSTATIONS

| Sl. No. | Item No. | Description of Item   | Unit               | Rate for 2015-16 (Rs.) | Rate for 2016-17 (Rs.) | Rate for 2017-18 (Rs.) | Rate for 2018-19 (Rs.) |
|---------|----------|---|--------------------|------------------------|------------------------|------------------------|------------------------|
| CS1     | 1        | Hoisting of Insulators and hardware, stretching the conductor and stringing of <b>220 kV bus</b> comprising of three phases with <b>Quadruple Moose</b> conductor to a tension of <b>900kgs for single moose conductor.</b> ( The maximum length or up to a length of bus section of <b>40m</b> )           | <b>Bus Section</b> | 21634.13               | 22901.89               | 23408.02               | 24337.32               |
| CS2     | 2        | Hoisting of Insulators and hardware, stretching the conductor and stringing of <b>220 kV bus</b> comprising of three phases with <b>single Zebra/Moose</b> conductor to a tension of <b>900kgs.</b> ( The maximum length or up to a length of bus section of <b>40m</b> )                                   | <b>Bus Section</b> | 5409.59                | 5726.59                | 5853.15                | 6085.52                |
| CS3     | 3        | Hoisting of Insulators and hardware, stretching the conductor and stringing of <b>220 kV bus</b> comprising of three phases with <b>Twin Zebra/Moose</b> conductor to a tension of <b>1800kgs</b> , including fixing of spacer clamps( The maximum length or up to a length of bus section of <b>40m</b> ). | <b>Bus Section</b> | 10821.29               | 11455.42               | 11708.58               | 12173.41               |
| CS4     | 4        | Hoisting of Insulators and hardware, stretching the conductor and stringing of <b>132 kV bus</b> comprising of three phases with <b>Single Zebra/Moose</b> conductor to a tension of <b>900kgs.</b> ( The maximum length or up to a length of bus section of <b>45m</b> ).                                  | <b>Bus Section</b> | 5409.59                | 5726.59                | 5853.15                | 6085.52                |
| CS5     | 5        | Hoisting of Insulators and hardware, stretching the conductor and stringing of <b>132 kV bus</b> comprising of three phases with <b>Twin Zebra/Moose</b> conductor to a tension of <b>1800kgs</b> including fixing of spacer clamps.( The maximum length or up to a length of bus section of <b>45m</b> ).  | <b>Bus Section</b> | 10821.29               | 11455.42               | 11708.58               | 12173.41               |
| CS6     | 6        | Hoisting of Insulators and hardware, stretching the conductor and stringing of <b>33 kV bus</b> comprising of three phases with <b>Single Zebra/Moose</b> conductor to a tension of <b>450kgs.</b> ( The maximum length or up to a length of bus section of <b>20m</b> ).                                   | <b>Bus Section</b> | 4058.78                | 4296.62                | 4391.58                | 4565.93                |
| CS7     | 7        | Hoisting of Insulators and hardware, stretching the conductor and stringing of <b>33 kV bus</b> comprising of three phases with <b>Twin Zebra/Moose</b> conductor to a tension of <b>900kgs</b> including fixing of spacer clamps.( The maximum length or up to a length of bus section of <b>20m</b> ).    | <b>Bus Section</b> | 6765.69                | 7162.16                | 7320.44                | 7611.06                |
| CS8     | 8        | Hoisting of Insulators and hardware, stretching the conductor and stringing of <b>132 kV bus</b> comprising of <b>two phases</b> with <b>Single Zebra/Moose</b> conductor to a tension of <b>900kgs.</b> ( The maximum length or up to a length of bus section of <b>45m</b> ).                             | <b>Bus Section</b> | 3604.98                | 3816.23                | 3900.57                | 4055.42                |
| CS9     | 9        | Fixing of spacers for Twin Moose conductor  | Each               | 106.84                 | 113.10                 | 115.60                 | 120.19                 |
| CS10    | 10       | Fixing of spacers for Quadruple Moose Conductor   | Each               | 148.09                 | 156.77                 | 160.23                 | 166.59                 |
| CS11    | 11       | Fixing of Hardware,stretching the ground wire and stringing of earth wire to a tension of 450kgs from pinnacle to pinnacle.   | Each               | 808.16                 | 855.52                 | 874.43                 | 909.14                 |
| CS12    | 12       | Fixing of Hardware,stretching the ground wire and stringing of earth wire to a tension of 450kgs from pinnacle to ground.   | RM                 | 55.01                  | 58.23                  | 59.52                  | 61.88                  |

| Sl. No. | Item No. | Description of Item  | Unit | Rate for 2015-16 (Rs.) | Rate for 2016-17 (Rs.) | Rate for 2017-18 (Rs.) | Rate for 2018-19 (Rs.) |
|---------|----------|--|------|------------------------|------------------------|------------------------|------------------------|
| CS13    | 13       | Connection of equipment to bus and or another equipment with <u>single zebra/Moose/Panther</u> conductor including measuring, cutting,clamping and hoisting of suspension insulator assembly to support the conductor wherever necessary.  | Each | 283.49                 | 300.10                 | 306.73                 | 318.91                 |
| CS14    | 14       | Connection of equipment to bus and or another equipment with <u>Twin zebra/Moose/Panther</u> conductor including measuring, cutting,clamping and hoisting of suspension insulator assembly to support the conductor wherever necessary.  | Each | 438.99                 | 464.71                 | 474.98                 | 493.84                 |
| CS15    | 15       | Connection of equipment to bus and or another equipment with <u>Quad zebra/Moose/Panther</u> conductor including measuring, cutting,clamping and hoisting of suspension insulator assembly to support the conductor wherever necessary.  | Each | 879.03                 | 930.54                 | 951.10                 | 988.86                 |
|         | 16       | Laying of earth mat including excavation of trenches, welding, connecting to equipment and connecting lightning shield to earth mat and earthing of fence posts, drilling and connecting earth rods including connecting cast iron pipes as per Drg. No.SET(P)/149/82 with the following sizes of MS Flats /GI Flats.(for 220kV & 132kV) including fabrication.  |      |                        |                        |                        |                        |
| CS16    | 16 a     | 100x16mm MS Flat / GI Flat.  | RM   | 83.57                  | 88.47                  | 90.43                  | 94.02                  |
| CS17    | 16 b     | 50x 8mm MS Flat / GI Flat.   | RM   | 65.58                  | 69.42                  | 70.95                  | 73.77                  |
| CS18    | 16 c     | 75x 8mm MS Flat / GI Flat.   | RM   | 75.10                  | 79.50                  | 81.26                  | 84.49                  |
| CS19    | 16 d     | For laying of earth flat in hard rock in substation / bays extension, an additional amount to the basic labour rate of SSR will be allowed as there is no provision in the rate of laying of earth flat for removal of hard rocks.   | RM   | 57.12                  | 60.47                  | 61.81                  | 64.26                  |
| CS20    | 17       | Excavation of earth pit, putting cast iron pipe with flange on one end (as per ISS7181/86) of nominal dia 125mm and 2.75 meters long in side the pit including supply and fixing RCC collars 0.75 meter dia (OD), 50mm thick and 0.60meters long in side the pit, backfill the pit in the 25mm size granules of BHcoke for full depth of the pit with alternate layers of BH coke and salt of 300mm thick around the earth pipe of 150mm on all the sides of the pipe including cost and conveyance of BH coke, salt, clamps, C.I.Pipes and RCC collars, labour charges for all operational and incidental items of work etc., complete. | Each | 12061.04               | 12767.82               | 13049.99               | 13568.07               |
| CS21    | 18       | Laying of control cables of all sizes (from 2 core. 2.5 / 4.0sqmm to 12 core, 2.5/4.0sqmm , both copper and alluminium in cable trenches including cost of suitable metallic cable glands with rubber lining. <b>Note:</b> This includes running of cables in control room where cables are run on cable racks in cable duct.  | RM   | 9.52                   | 10.08                  | 10.30                  | 10.71                  |
|         | 19       | Laying of power cables.  |      |                        |                        |                        |                        |
| CS22    | 19 a     | upto 50 sqmm   | RM   | 12.69                  | 13.43                  | 13.73                  | 14.28                  |
| CS23    | 19 b     | above 50 sqmm  | RM   | 16.92                  | 17.91                  | 18.31                  | 19.04                  |
|         | 20       | Cable terminations to the switchgear, Marshalling boxes / Panel terminal blocks/control & relay panels, LTAC panel including providng suitable ferrules and lugs as per specification (including cost of ferrules and lugs) (for 220kV & 132kV).   |      |                        |                        |                        |                        |

| Sl. No. | Item No. | Description of Item  | Unit | Rate for 2015-16 (Rs.) | Rate for 2016-17 (Rs.) | Rate for 2017-18 (Rs.) | Rate for 2018-19 (Rs.) |
|---------|----------|--|------|------------------------|------------------------|------------------------|------------------------|
| CS24    | 20 i     | 2.5 sqmm Copper with copper lugs each core at both ends.   | Nos. | 28.56                  | 30.23                  | 30.90                  | 32.13                  |
| CS25    | 20 ii    | 4.0 sqmm Aluminium with Aluminium lugs each core at both ends.   | Nos. | 30.68                  | 32.48                  | 33.20                  | 34.52                  |
| CS26    | 20 iii   | Up to 50 sqmm Power Cable with lugs each core at both ends.  | Nos. | 66.64                  | 70.55                  | 72.11                  | 74.97                  |
| CS27    | 20 iv    | Above 50 sqmm Power Cable with lugs each core at both ends.  | Nos. | 121.65                 | 128.78                 | 131.63                 | 136.86                 |
| CS28    | 21       | Instalation of lighting fixtures on switch yard structures including cabling and connections, labour charges etc., including 40mm dia G.I bent pipe of 0.75m length with suitable clamps for fixing to structures in complete shape (excluding cost of lighting fixtures)      | Each | 1083.19                | 1146.66                | 1172.00                | 1218.53                |
|         | 22       | Erection of the following equipment with Crane / Derrick at site including handling the material / equipment carefully at site including labour charges for all incidental and operational items of work. (excluding cost of transport charges from Dept. stores to the site). |      |                        |                        |                        |                        |
| CS29    | 22.1     | 220 kV Circuit breakers with support structure & marshalling boxes <u>including grouting of foundation bolts and wiring of cables from Ploe to Pole including terminations.</u>  | Each | 18936.74               | 20046.43               | 20489.46               | 21302.89               |
| CS30    | 22.2     | 132 kV Circuit breakers with support structure & marshalling boxes <u>including Ploe to Pole cable wiring and terminations.</u>  | Each | 13529.26               | 14322.07               | 14638.59               | 15219.74               |
| CS31    | 22.3     | 33 kV Circuit breakers including Ploe to Pole cable wiring and terminations.   | Each | 5451.90                | 5771.38                | 5898.93                | 6133.12                |
| CS32    | 22.4     | 2-pole 220 kV Circuit Breaker with support structure & marshalling boxes incl. grouting of foundation bolts & wiring of cables & terminations.   | Each | 16095.48               | 17038.68               | 17415.23               | 18106.61               |
| CS33    | 22.5     | 2-pole 132 kV Circuit Breaker with support structure & marshalling boxes incl. grouting of foundation bolts & wiring of cables & terminations.   | Each | 11499.34               | 12173.20               | 12442.23               | 12936.19               |
| CS34    | 22.6     | 220 kV Current Tranformers.  | Each | 4601.43                | 4871.07                | 4978.72                | 5176.38                |
| CS35    | 22.7     | 132 kV Current Tranformers.  | Each | 2975.59                | 3149.96                | 3219.57                | 3347.39                |
| CS36    | 22.8     | 33 kV Current Tranformers.   | Each | 919.23                 | 973.10                 | 994.61                 | 1034.10                |
| CS37    | 22.9     | 220 kV Potential Tranfomers.   | Each | 4601.43                | 4871.07                | 4978.72                | 5176.38                |
| CS38    | 22.10    | 132 kV Potential transformers.   | Each | 2975.59                | 3149.96                | 3219.57                | 3347.39                |
| CS39    | 22.11    | 33 kV Potential transformers.  | Each | 919.23                 | 973.10                 | 994.61                 | 1034.10                |
| CS40    | 22.12    | 220 kV Lightning Arrestors.  | Each | 2975.59                | 3149.96                | 3219.57                | 3347.39                |
| CS41    | 22.13    | 132 kV Lightning Arrestors.  | Each | 1404.76                | 1487.08                | 1519.94                | 1580.28                |
| CS42    | 22.14    | 33 kV Lightning Arrestors.   | Each | 549.00                 | 581.17                 | 594.01                 | 617.59                 |
| CS43    | 22.15    | 220 kV Capacitive Voltage Transformers.  | Each | 4329.58                | 4583.29                | 4684.58                | 4870.56                |
| CS44    | 22.16    | 132 kV Capacitive Voltage Transformers.  | Each | 2975.59                | 3149.96                | 3219.57                | 3347.39                |
| CS45    | 22.17    | 220 kV Isolators with earth swtich including solid core insulators erection, alignment in full shape for smooth operation by Electrical and manually.  | Each | 7305.17                | 7733.25                | 7904.15                | 8217.94                |
| CS46    | 22.18    | 132 kV Isolators with earth swtich including solid core insulators erection, alignment in full shape for smooth operation by manually.   | Each | 5409.59                | 5726.59                | 5853.15                | 6085.52                |
| CS47    | 22.19    | 220 kV Isolators without earth swtich including solid core insulators erection, alignment in full shape for smooth operation by Electrical and manually.   | Each | 6765.69                | 7162.16                | 7320.44                | 7611.06                |
| CS48    | 22.20    | 132 kV Isolators without earth swtich including solid core insulators erection, alignment in full shape for smooth operation by manually.  | Each | 4866.94                | 5152.14                | 5266.00                | 5475.06                |

| Sl. No. | Item No. | Description of Item   | Unit | Rate for 2015-16 (Rs.) | Rate for 2016-17 (Rs.) | Rate for 2017-18 (Rs.) | Rate for 2018-19 (Rs.) |
|---------|----------|---|------|------------------------|------------------------|------------------------|------------------------|
| CS49    | 22.21    | 2-pole, 220 kV Isolators without earth switch including solid core insulators erection, alignment in full shape for smooth operation by Electrical and manually.  | Each | 5750.20                | 6087.16                | 6221.69                | 6468.69                |
| CS50    | 22.22    | 2-pole, 132 kV Isolators without earth switch including solid core insulators erection, alignment in full shape for smooth operation by Electrical and manually.  | Each | 4137.06                | 4379.49                | 4476.28                | 4653.99                |
| CS51    | 22.23    | 33 kV Isolators including solid core insulators erection, alignment in full shape for smooth operation.   | Each | 1758.06                | 1861.08                | 1902.21                | 1977.73                |
| CS52    | 22.24    | 220 kV Bus Post Type Insulators.  | Each | 382.92                 | 405.36                 | 414.32                 | 430.77                 |
| CS53    | 22.25    | 132 kV Bus Post Type Insulators.  | Each | 288.78                 | 305.70                 | 312.46                 | 324.86                 |
| CS54    | 22.26    | 33 kV Solid Core Insulators   | Each | 193.58                 | 204.92                 | 209.45                 | 217.77                 |
| CS55    | 23       | 33 kV /400 V Station Transformer including all necessary connections on HV & LV side including cost of lugs (But excluding cost of transformer and HG fuse set)   | Each | 6110.91                | 6469.01                | 6611.98                | 6874.48                |
| CS56    | 24       | Erection of Control / Relay panels, LTAC panels, annunciation, PTDB panels etc.,in the control room duly mounting them on channels and grouting them with foundation bolts excluding cost of channels & foundation bolts (for 220kV & 132kV), including man power support to MRT wing for commissioning.  | Each | 2403.32                | 2544.15                | 2600.38                | 2703.62                |
| CS57    | 25       | Erection of 220 V, 200 Ah/ 80 Ah Lead Acid battery in complete shape fit for charging.  | Set  | 9418.65                | 9970.58                | 10190.93               | 10595.51               |
| CS58    | 26       | Erection of 220 V, 200 Ah/ 80 Ah maintenance free battery in complete shape fit for charging .  | Set  | 3044.35                | 3222.75                | 3293.97                | 3424.74                |
| CS59    | 27       | Erection of 220 V, 200 Ah / 80Ah battery charger.   | Set  | 3130.03                | 3313.45                | 3386.68                | 3521.13                |
| CS60    | 28       | Erection of Capacitor Bank including series reactor of 7.5 MVAR Capacity  | Each | 4851.07                | 5135.34                | 5248.83                | 5457.21                |
| CS61    | 29       | Erection of Marshalling kiosk   | Each | 808.16                 | 855.52                 | 874.43                 | 909.14                 |
| CS62    | 30       | Erection of Marshalling boxes   | Each | 392.44                 | 415.44                 | 424.62                 | 441.48                 |
| CS63    | 31       | Erection of Lighting pillar box in switchyard on foundation laid (Excluding pillar box). (for 220kV & 132kV )   | Each | 1082.13                | 1145.54                | 1170.86                | 1217.34                |
| CS64    | 32       | Fabrication of Main and Auxiliary structures, stub setting templates, foundation bolts, 'U' bolts etc.,using raw steel such as M.S.Angles, Plates, Channels, R.S.Joists, M.S.rounds, excluding cost of Mild Steel and transport charges to site.  | MT   | 8852.73                | 9371.50                | 9578.61                | 9958.88                |
| CS65    | 33       | Galvanization of Main and Auxiliary structures, stub setting templates, foundation bolts, 'U' bolts etc.,using raw steel such as M.S.Angles, Plates, Channels, R.S.Joists, M.S.rounds, excluding cost of zinc and transport charges to substation site.(Cost of zinc should be followed as per IEEMA rates.).The average quantity of Zinc required for all angles of tower parts is 60 Kgs. | MT   | 5183.22                | 5486.96                | 5608.22                | 5830.87                |
|         | 34       | Setting of stubs with stub setting template for sub-station structure:Erection of stub template, fixing of jacks for supporting the template, alignment and leveling of exact location of stubs of stubsetting template, dismantling of template after completion of initial curing of CC   |      |                        |                        |                        |                        |
| CS66    | 34.1     | 220kV Towers  | Set  | 3492.86                | 3697.54                | 3779.26                | 3929.30                |
| CS67    | 34.2     | 132kV Towers  | Set  | 2508.04                | 2655.01                | 2713.69                | 2821.42                |
| CS68    | 34.3     | 33kV Towers & CPL's   | Set  | 626.22                 | 662.92                 | 677.57                 | 704.47                 |
| CS69    | 34.4     | 220kV Isolator  | Set  | 2620.17                | 2773.71                | 2835.01                | 2947.56                |
| CS70    | 34.5     | 132kV Isolator  | Set  | 1880.77                | 1990.98                | 2034.98                | 2115.77                |

| Sl. No. | Item No. | Description of Item   | Unit | Rate for 2015-16 (Rs.) | Rate for 2016-17 (Rs.) | Rate for 2017-18 (Rs.) | Rate for 2018-19 (Rs.) |
|---------|----------|---|------|------------------------|------------------------|------------------------|------------------------|
| CS71    | 34.6     | 220 kV Breaker  | Set  | 2265.81                | 2398.59                | 2451.60                | 2548.93                |
| CS72    | 34.7     | 132 kV Breaker  | Set  | 1698.83                | 1798.38                | 1838.12                | 1911.09                |
| CS73    | 34.8     | 33 kV Breaker   | Set  | 1132.90                | 1199.29                | 1225.79                | 1274.45                |
| CS74    | 35       | Erection of the main and auxiliary structures etc., using bolts and nuts.   | MT   | 2705.85                | 2864.41                | 2927.71                | 3043.94                |
| CS75    | 36       | Fixing of 90lb rail poles over the transformer plinths.   | RM   | 538.42                 | 569.97                 | 582.57                 | 605.70                 |
| CS76    | 37       | Fixing of 105lb rail poles over the transformer plinths.  | RM   | 629.39                 | 666.27                 | 680.99                 | 708.03                 |
| CS77    | 38       | Erection of 33kV HG Fuse set  | Each | 653.72                 | 692.03                 | 707.32                 | 735.40                 |
| CS78    | 39       | Erection of 33kV PT Distribution Box  | Each | 393.50                 | 416.56                 | 425.77                 | 442.67                 |
| CS79    | 40       | Laying and Terminations of 11kV, XLPE 1000 Sqmm Cable   | RM   | 137.51                 | 145.57                 | 148.79                 | 154.70                 |
| CS80    | 41       | Erection of 11kV VCB outdoor type Kisok (within built Breaker, CTs, PTs, Surge Arrestors & Relays).   | Each | 2794.71                | 2958.48                | 3023.86                | 3143.91                |
|         |          | Marking as per approved layout with the help of surveyor  |      |                        |                        |                        |                        |
| CS81    | 42       | 220 kV sub-station  | Each | 33980.77               | 35972.04               | 36767.02               | 38226.67               |
| CS82    | 43       | 132 kV sub-station  | Each | 22653.84               | 23981.36               | 24511.35               | 25484.45               |
| CS83    | 44       | Bay / Bays in one sub-station   | Each | 11326.92               | 11990.68               | 12255.67               | 12742.22               |
|         | 45       | Auto-CADD drawing with 12 copies indicate complete land with dimensions, plan of SS with equipments, location of control room, equipments, roads, duct routes, earth mat of 100X16mm & 50X 8mm flat earth pits,yard lighting fixtures etc., |      |                        |                        |                        |                        |
| CS84    | i        | 132kV SS layout drawing   | Job  | 5754.43                | 6091.64                | 6226.27                | 6473.45                |
| CS85    | ii       | 220kV SS layout drawing   | Job  | 7060.82                | 7474.58                | 7639.77                | 7943.07                |
| CS86    | 46       | Writing of letters in control room panels of lettering on panels marshalling boxes.   | Line | 81.45                  | 86.22                  | 88.13                  | 91.63                  |
| CS87    | 47       | Supply and installation of Key - Board of size 1.5'x2' of Eco Wood Board with Glass covering with lock and key arrangements for providing all the keys of equipment and SS.   | Each | 4527.38                | 4792.68                | 4898.60                | 5093.07                |

Note:

- i. Bore earthing in estimations as per field conditions will be considered
- ii. 25% excess over CS64 is allowed for JC tower fabrication charges.

Sd/- J.V.RAO  
DIRECTOR(TECHNICAL)

// FORWARD BY ORDER //

*J. Jyothie*

EXECUTIVE ENGINEER-3  
O/o Chief Engineer(Construction)  
APTRANSCO  
Vidyut Soudha, Vijayawada

## ANNEXURE - III

## I Loading / Unloading of materials from departmental / Private vehicles in to the stores yard and stacking and vice-versa

| Sl. No. | Item No. | Description of Item   | Unit        | SS Rate for 2015-16 (Rs.) |            | SS Rate for 2016-17 (Rs.) |            | SS Rate for 2017-18 (Rs.) |            | SS Rate for 2018-19 (Rs.) |            |
|---------|----------|---|-------------|---------------------------|------------|---------------------------|------------|---------------------------|------------|---------------------------|------------|
|         |          |   |             | Loading                   | Un Loading | Loading                   | Un Loading | Loading                   | Un Loading | Loading                   | Un Loading |
| ST1     | 1        | Cement  | MT          | 97.21                     | 113.29     | 102.91                    | 119.93     | 105.18                    | 122.58     | 109.36                    | 127.45     |
|         | 2        | All other materials   |             |                           |            |                           |            |                           |            |                           |            |
| ST2     | (i)      | Steel   | MT          | 220.66                    | 220.66     | 233.59                    | 233.59     | 238.75                    | 238.75     | 248.23                    | 248.23     |
| ST3     | (ii)     | Tower parts   | MT          | 220.66                    | 220.66     | 233.59                    | 233.59     | 238.75                    | 238.75     | 248.23                    | 248.23     |
| ST4     | (iii)    | RS Joists and rail poles and MS Sheets pf various sizes.                              | MT          | 220.66                    | 220.66     | 233.59                    | 233.59     | 238.75                    | 238.75     | 248.23                    | 248.23     |
|         | 3        | Cable / Conductor drums (for loading / un loading )                                   |             |                           |            |                           |            |                           |            |                           |            |
| ST5     | a        | Panther ACSR  | Each        | 242.77                    | 242.77     | 257.00                    | 257.00     | 262.68                    | 262.68     | 273.11                    | 273.11     |
| ST6     | b        | Zebra ACSR  | Each        | 339.77                    | 339.77     | 359.68                    | 359.68     | 367.63                    | 367.63     | 382.22                    | 382.22     |
| ST7     | c        | Moose ACSR  | Each        | 339.77                    | 339.77     | 359.68                    | 359.68     | 367.63                    | 367.63     | 382.22                    | 382.22     |
| ST8     | d        | Moose ACSR (Huge Drums of 1.75KM and above)   | Each Drum   | 499.49                    | 499.49     | 528.76                    | 528.76     | 540.45                    | 540.45     | 561.91                    | 561.91     |
| ST9     | e        | Earth wire  | Each        | 145.55                    | 145.55     | 154.08                    | 154.08     | 157.49                    | 157.49     | 163.74                    | 163.74     |
| ST10    | f        | Control cables up to 6 Core   | Each        | 145.55                    | 145.55     | 154.08                    | 154.08     | 157.49                    | 157.49     | 163.74                    | 163.74     |
| ST11    | g        | Control cables above 6 Core   | Each        | 194.11                    | 194.11     | 205.48                    | 205.48     | 210.02                    | 210.02     | 218.36                    | 218.36     |
| ST12    | h        | 3 1/2 Core LTAC cable drum (up to 500 meters).  | Each Drum   | 194.11                    | 194.11     | 205.48                    | 205.48     | 210.02                    | 210.02     | 218.36                    | 218.36     |
| ST13    | i        | 3 1/2 Core LTAC cable drum (above 500 meters).  | Each Drum   | 242.77                    | 242.77     | 257.00                    | 257.00     | 262.68                    | 262.68     | 273.11                    | 273.11     |
|         | 4        | Other materials received in cases.  |             |                           |            |                           |            |                           |            |                           |            |
| ST14    | (i)      | Case weighing not more than 100kgs.   | Each case   | 127.99                    | 127.99     | 135.49                    | 135.49     | 138.48                    | 138.48     | 143.98                    | 143.98     |
| ST15    | (ii)     | Case weighing from 101kgs to 500kgs.  | Each case   | 241.28                    | 241.28     | 255.42                    | 255.42     | 261.06                    | 261.06     | 271.42                    | 271.42     |
| ST16    | (iii)    | Case containing fragile items and weighing more than 501kgs and up to 1MT             | Each case   | 482.67                    | 385.46     | 510.95                    | 408.05     | 522.24                    | 417.07     | 542.97                    | 433.63     |
| ST17    | (iv)     | for LTAC panel  | Each        | 322.10                    | 322.10     | 340.98                    | 340.98     | 348.52                    | 348.52     | 362.36                    | 362.36     |
| ST18    | v(a)     | 70KN Normal disc insulator  | Each        | 1.27                      | 1.27       | 1.34                      | 1.34       | 1.37                      | 1.37       | 1.42                      | 1.42       |
| ST19    | v(b)     | 120KN Normal disc insulator   | Each        | 1.59                      | 1.59       | 1.68                      | 1.68       | 1.72                      | 1.72       | 1.79                      | 1.79       |
| ST20    | v(c)     | 160KN Normal disc insulator   | Each        | 1.90                      | 1.90       | 2.01                      | 2.01       | 2.05                      | 2.05       | 2.13                      | 2.13       |
| ST21    | vi(a)    | 70KN Anti-fog disc insulator  | Each        | 1.59                      | 1.59       | 1.68                      | 1.68       | 1.72                      | 1.72       | 1.79                      | 1.79       |
| ST22    | vi(b)    | 120KN Anti-fog disc insulator   | Each        | 1.90                      | 1.90       | 2.01                      | 2.01       | 2.05                      | 2.05       | 2.13                      | 2.13       |
| ST23    | vi(c)    | 160KN Anti-fog disc insulator   | Each        | 2.54                      | 2.54       | 2.69                      | 2.69       | 2.75                      | 2.75       | 2.86                      | 2.86       |
|         | (vii)    | Loading / Un loading and stacking charges for 70KN /120KN SRC insulators.             |             |                           |            |                           |            |                           |            |                           |            |
| ST24    | (a)      | 132kV   | Each        | 2.54                      | 2.54       | 2.69                      | 2.69       | 2.75                      | 2.75       | 2.86                      | 2.86       |
| ST25    | (b)      | 220kV   | Each        | 3.17                      | 3.17       | 3.36                      | 3.36       | 3.43                      | 3.43       | 3.57                      | 3.57       |
| ST26    | (viii)   | Loading / Un loading and stacking charges for 120KN /160KN SRC insulators for 400kV . | Each string | 3.70                      | 3.70       | 3.92                      | 3.92       | 4.01                      | 4.01       | 4.17                      | 4.17       |
|         | 5        | Cases containing Control & Relay Panels   |             |                           |            |                           |            |                           |            |                           |            |
| ST27    | (a)      | 33kV  | Each        | 322.10                    | 322.10     | 340.98                    | 340.98     | 348.52                    | 348.52     | 362.36                    | 362.36     |
| ST28    | (b)      | 132kV and 220kV   | Each        | 401.54                    | 401.54     | 425.07                    | 425.07     | 434.46                    | 434.46     | 451.71                    | 451.71     |
|         | 6        | Cases containing CTs, PTs, CVTs   |             |                           |            |                           |            |                           |            |                           |            |
| ST29    | (i)      | 11kV to 33kV Rating   | Each case   | 97.21                     | 97.21      | 102.91                    | 102.91     | 105.18                    | 105.18     | 109.36                    | 109.36     |
| ST30    | (ii)     | Above 33kV and up to 132kV  | Each case   | 485.32                    | 485.32     | 513.76                    | 513.76     | 525.11                    | 525.11     | 545.96                    | 545.96     |
| ST31    | (iii)    | 220kV Rating  | Each case   | 723.75                    | 723.75     | 766.16                    | 766.16     | 783.09                    | 783.09     | 814.18                    | 814.18     |
|         | 7        | Cases containing LAs  |             |                           |            |                           |            |                           |            |                           |            |

|      |       |   |           |         |         |         |         |         |         |         |         |
|------|-------|---|-----------|---------|---------|---------|---------|---------|---------|---------|---------|
| ST32 | (i)   | 33kV  | Each case | 20.42   | 20.42   | 21.62   | 21.62   | 22.10   | 22.10   | 22.98   | 22.98   |
| ST33 | (ii)  | 132kV   | Each case | 241.28  | 241.28  | 255.42  | 255.42  | 261.06  | 261.06  | 271.42  | 271.42  |
| ST34 | (iii) | 220kV   | Each case | 322.10  | 322.10  | 340.98  | 340.98  | 348.52  | 348.52  | 362.36  | 362.36  |
|      | 8     | Loading / Un-Loading of   |           |         |         |         |         |         |         |         |         |
| ST35 | 1     | 33kV Breaker  | Each set  | 965.14  | 965.14  | 1021.70 | 1021.70 | 1044.28 | 1044.28 | 1085.74 | 1085.74 |
| ST36 | 2     | 132kV CB  | Each set  | 1928.79 | 1928.79 | 2041.82 | 2041.82 | 2086.94 | 2086.94 | 2169.79 | 2169.79 |
| ST37 | 3     | 220kV SF6 CB  | Each set  | 2409.77 | 2409.77 | 2550.98 | 2550.98 | 2607.36 | 2607.36 | 2710.87 | 2710.87 |
| ST38 | 4     | Station Transformer (100KVA)  | Each set  | 370.23  | 370.23  | 391.93  | 391.93  | 400.59  | 400.59  | 416.49  | 416.49  |
| ST39 | 5     | Station Transformer (250KVA)  | Each set  | 443.54  | 443.54  | 469.53  | 469.53  | 479.91  | 479.91  | 498.96  | 498.96  |
| ST40 | 6     | 220V 80AH Battery<br>(Conventional) (Lead Acid)   | Set       | 803.29  | 803.29  | 850.36  | 850.36  | 869.15  | 869.15  | 903.66  | 903.66  |
| ST41 | 7     | 220V 80AH Battery (VRLA)<br>(Maintenance Free)  | Set       | 563.38  | 563.38  | 596.39  | 596.39  | 609.57  | 609.57  | 633.77  | 633.77  |
| ST42 | 8     | 220V 200AH Battery<br>(Conventional) (Lead Acid)  | Set       | 882.73  | 882.73  | 934.46  | 934.46  | 955.11  | 955.11  | 993.03  | 993.03  |
| ST43 | 9     | 220V 400AH Battery  | Set       | 1285.86 | 1285.86 | 1361.21 | 1361.21 | 1391.29 | 1391.29 | 1446.52 | 1446.52 |
| ST44 | 10    | 220V Battery Charger with DC<br>distribution Board  | Set       | 482.67  | 482.67  | 510.95  | 510.95  | 522.24  | 522.24  | 542.97  | 542.97  |
| ST45 | 11    | DCDB for battery Charger.   | Each      | 160.36  | 160.36  | 169.76  | 169.76  | 173.51  | 173.51  | 180.40  | 180.40  |
| ST46 | 12    | 132kV Hardware single   | Set       | 11.32   | 11.32   | 11.98   | 11.98   | 12.24   | 12.24   | 12.73   | 12.73   |
| ST47 | 13    | 132 KV Hardware double  | Set       | 11.74   | 11.74   | 12.43   | 12.43   | 12.70   | 12.70   | 13.20   | 13.20   |
| ST48 | 14    | 220 kV Hardware single  | Set       | 15.97   | 15.97   | 16.91   | 16.91   | 17.28   | 17.28   | 17.97   | 17.97   |
| ST49 | 15    | 220 KV Hardware double  | Set       | 17.03   | 17.03   | 18.03   | 18.03   | 18.43   | 18.43   | 19.16   | 19.16   |
| ST50 | 16    | 220 KV Isolators, without<br>insulators including machanism<br>box  | Set       | 482.67  | 482.67  | 510.95  | 510.95  | 522.24  | 522.24  | 542.97  | 542.97  |
| ST51 | 17    | 220kV Solid core insulators   | Each      | 64.63   | 64.63   | 68.42   | 68.42   | 69.93   | 69.93   | 72.71   | 72.71   |
| ST52 | 18    | 132 KV Isolators (without soild<br>core insulators)   | Each      | 361.87  | 361.87  | 383.08  | 383.08  | 391.55  | 391.55  | 407.09  | 407.09  |
| ST53 | 19    | 132kV Solid core insulators   | Each      | 39.77   | 39.77   | 42.10   | 42.10   | 43.03   | 43.03   | 44.74   | 44.74   |
| ST54 | 20    | 33 KV Isolators (without soild core<br>insulators)  | Each      | 160.36  | 160.36  | 169.76  | 169.76  | 173.51  | 173.51  | 180.40  | 180.40  |
| ST55 | 21    | 33kV Solid core insulators  | Each      | 4.55    | 4.55    | 4.82    | 4.82    | 4.93    | 4.93    | 5.13    | 5.13    |
| ST56 | 22    | Vibration dampers, mid span<br>compression joints, repair sleeves,<br>clamps & connectors etc                                     | 100 Nos   | 160.36  | 160.36  | 169.76  | 169.76  | 173.51  | 173.51  | 180.40  | 180.40  |
|      | 23    | Capacitor Banks   |           |         |         |         |         |         |         |         |         |
| ST57 | a     | 5 MVAR  | Set       | 1285.86 | 1285.86 | 1361.21 | 1361.21 | 1391.29 | 1391.29 | 1446.52 | 1446.52 |
| ST58 | b     | Neutral C.T.  | Each      | 88.22   | 88.22   | 93.39   | 93.39   | 95.45   | 95.45   | 99.24   | 99.24   |
| ST59 | 24    | Scrap items like MS Scrap, GI<br>Scrap, Ferrous Scrap etc.,   | Per MT    | 241.28  | 241.28  | 255.42  | 255.42  | 261.06  | 261.06  | 271.42  | 271.42  |
| ST60 | 25    | Scrap items like Conductor scrap,<br>Earth wire Scrap, etc.,  | Per MT    | 322.10  | 322.10  | 340.98  | 340.98  | 348.52  | 348.52  | 362.36  | 362.36  |
| ST61 | 26    | Bolts & Nuts weighing 50 Kgs<br>bags including springs washers, flat<br>washers.  | Each bag  | 7.40    | 7.40    | 7.83    | 7.83    | 8.00    | 8.00    | 8.32    | 8.32    |
| ST62 | 27    | 3 1/2 Core LTAC Cable bits<br>(loose) by measuring and load /<br>unload (up to 500 Meters, limited<br>to Rs.142 per Bit (Maximum) | Mts       | 0.74    | 0.63    | 0.78    | 0.67    | 0.80    | 0.68    | 0.83    | 0.71    |
| ST63 | 28    | Cable bits (loose) up to 6 Core by<br>measuring and load / un load.( up<br>to 500 Meters, limited to Rs.106<br>per Bit (Maximum)  | Mts       | 0.63    | 0.63    | 0.67    | 0.67    | 0.68    | 0.68    | 0.71    | 0.71    |
| ST64 | 29    | Cable bits (loose) above 6 Core by<br>measuring and load / un load.(up to<br>500 Meters, limited to Rs.142 per<br>Bit (Maximum)   | Mts       | 1.06    | 1.06    | 1.12    | 1.12    | 1.14    | 1.14    | 1.19    | 1.19    |
| ST65 | 30    | Copper Scrap  | Per MT    | 192.63  | 192.63  | 203.92  | 203.92  | 208.43  | 208.43  | 216.70  | 216.70  |
| ST66 | 31    | Battery Scrap   | Per MT    | 201.51  | 201.51  | 213.32  | 213.32  | 218.03  | 218.03  | 226.69  | 226.69  |
| ST67 | 32    | Capacitor units Scrap   | Each      | 8.67    | 8.67    | 9.18    | 9.18    | 9.38    | 9.38    | 9.75    | 9.75    |
| ST68 | 33    | 33kV Breaker Limb   | Each      | 162.69  | 162.69  | 172.22  | 172.22  | 176.03  | 176.03  | 183.02  | 183.02  |

|      |    |   |        |        |        |        |        |        |        |        |        |
|------|----|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| ST69 | 34 | 132kV Breaker Limb                            | Each   | 401.54 | 401.54 | 425.07 | 425.07 | 434.46 | 434.46 | 451.71 | 451.71 |
| ST70 | 35 | 220kV Breaker Limb                            | Each   | 578.09 | 578.09 | 611.97 | 611.97 | 625.49 | 625.49 | 650.32 | 650.32 |
| ST71 | 36 | Tyres scrap of all sizes                      | Each   | 19.25  | 9.73   | 20.38  | 10.30  | 20.83  | 10.53  | 21.66  | 10.95  |
| ST72 | 37 | Empty oi drums                                | Barrel | 6.77   | 6.77   | 7.17   | 7.17   | 7.33   | 7.33   | 7.62   | 7.62   |
| ST73 | 38 | Full oil drums                                | Barrel | 40.20  | 40.20  | 42.56  | 42.56  | 43.50  | 43.50  | 45.23  | 45.23  |
| ST74 | 39 | 220V, 200AH Battery (VRLA) (Maintenance free) | Set    | 618.07 | 618.07 | 654.29 | 654.29 | 668.75 | 668.75 | 695.30 | 695.30 |
| ST75 | 40 | 220kV Bushing                                 | Each   | 249.75 | 249.75 | 264.39 | 264.39 | 270.23 | 270.23 | 280.96 | 280.96 |
| ST76 | 41 | 132kV Bushing                                 | Each   | 124.82 | 124.82 | 132.13 | 132.13 | 135.05 | 135.05 | 140.41 | 140.41 |
| ST77 | 42 | 33kV Bushing                                  | Each   | 31.31  | 24.96  | 33.14  | 26.42  | 33.87  | 27.00  | 35.21  | 28.07  |

|         | Note:    | - If loading / Un loading is done with Crane, 1/3 rd Charges are to be paid towards labour charges and remaining amount is towards crane hire charges. Example: Loading charges of 100 kVA Station Transformer is Rs. 416.49 and in case is loaded by using a crane then labour charges would be Rs.138.83 & crane hire charges would be Rs.277.66. |          |                       |          |                       |          |                       |          |                       |  |
|---------|----------|---|----------|-----------------------|----------|-----------------------|----------|-----------------------|----------|-----------------------|--|
|         | II.      | <b>Loading and Un loading and counting at Stores for check measuring and Stock Verificaiton Purpose</b>   |          |                       |          |                       |          |                       |          |                       |  |
| Sl. No. | Item No. | Description of Item   | Unit     | SSR for 2015-16 (Rs.) | Unit     | SSR for 2016-17 (Rs.) | Unit     | SSR for 2017-18 (Rs.) | Unit     | SSR for 2018-19 (Rs.) |  |
| ST78    | 43       | Tower parts counting on part wise and restocking at stores yard ( for stock verification purpose)   | Per MT   | 80.92                 | Per MT   | 85.66                 | Per MT   | 87.55                 | Per MT   | 91.03                 |  |
| ST79    | 44       | Labour charges for weighing and restocking of GI Tower Parts or Bolts & Nuts, Washers (for stock verification purpose)  | Per MT   | 322.10                | Per MT   | 340.98                | Per MT   | 348.52                | Per MT   | 362.36                |  |
| ST80    | 45       | Labour charges for loading and unloading of ACSR, AAA Conductor & Earth wire bits for weighment (for stock verification purpose).   | Per MT   | 322.10                | Per MT   | 340.98                | Per MT   | 348.52                | Per MT   | 362.36                |  |
| ST81    | 46       | Counting and Restocking of Hardware (Iron parts, Al jumper cones, Al Tension cones, PA rods, Arcing horns, Al grippers etc) (for stock verification purpose)  | Each set | 4.87                  | Each set | 5.16                  | Each set | 5.27                  | Each set | 5.48                  |  |
| ST82    | 47       | Counting and Restocking of 220kV & 132kV Line accessories like Dampers, MSC Joints, Repair sleeves, PA rods, D- Shackles Links, Earthing sets, Hangers, Counter Poise Earthing Clamps etc (for stock verification purpose)  | Each set | 1.59                  | Each set | 1.68                  | Each set | 1.72                  | Each set | 1.79                  |  |
| ST83    | 48       | Counting and restocking of insulators of various capacities (for stock verification purpose).   | Each     | 1.59                  | Each     | 1.68                  | Each     | 1.72                  | Each     | 1.79                  |  |
| ST84    | 49       | Loading of Assorted tower parts from different places by observing part wise and loading in to lorry at stores.   | Per MT   | 241.28                | Per MT   | 255.42                | Per MT   | 261.06                | Per MT   | 271.42                |  |
| ST85    | 50       | For Opening and Repacking of Packing of Panels for check measuring purpose  | Each     | 48.45                 | Each     | 51.29                 | Each     | 52.42                 | Each     | 54.50                 |  |
|         | 51       | For Opening and Repacking of Packing of Breakers for check measuring purpose  |          |                       |          |                       |          |                       |          |                       |  |
| ST86    | (a)      | 220 kV  | Each     | 160.36                | Each     | 169.76                | Each     | 173.51                | Each     | 180.40                |  |
| ST87    | (b)      | 132 kV  | Each     | 113.29                | Each     | 119.93                | Each     | 122.58                | Each     | 127.45                |  |
| ST88    | (c)      | 33 kV   | Each     | 48.45                 | Each     | 51.29                 | Each     | 52.42                 | Each     | 54.50                 |  |
| ST89    | 52       | For Opening and Repacking of Packing of Fragile Materials, and Small Packages like wooden, Cartoon Boxes etc., for check measuring purposes.  | Each     | 24.12                 | Each     | 25.53                 | Each     | 26.09                 | Each     | 27.13                 |  |
|         | III      | <b>Crane Hire charges:(for departmental works at the premises)</b>  |          |                       |          |                       |          |                       |          |                       |  |
| Sl. No. | Item No. | Description of Item   | Unit     | SSR for 2015-16       | Unit     | SSR for 2016-17       | Unit     | SSR for 2017-18       | Unit     | SSR for 2017-18       |  |
|         | 53       | For 2 to 8 Tonne Capacity crane   |          |                       |          |                       |          |                       |          |                       |  |
| ST90    |          | i.For 1st hour  | Hour     | 2387.78               | Hour     | 2527.70               | Hour     | 2583.56               | Hour     | 2686.13               |  |

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|                |                 |   |                    |                        |                      |                        |                      |                        |                      |                        |
|----------------|-----------------|---|--------------------|------------------------|----------------------|------------------------|----------------------|------------------------|----------------------|------------------------|
| ST91           |                 | ii.For every hour or part thereof after 1st hour  | Hour               | 1084.61                | Hour                 | 1148.17                | Hour                 | 1173.54                | Hour                 | 1220.13                |
|                | 54              | For 8 to 20 Tonne Capacity crane  |                    |                        |                      |                        |                      |                        |                      |                        |
| ST92           |                 | i.For 1st hour  | Hour               | 3723.92                | Hour                 | 3942.14                | Hour                 | 4029.26                | Hour                 | 4189.22                |
| ST93           |                 | ii.For every hour or part thereof after 1st hour  | Hour               | 1241.27                | Hour                 | 1314.01                | Hour                 | 1343.05                | Hour                 | 1396.37                |
|                | 55              | For above 20 Tonne Capacity crane   |                    |                        |                      |                        |                      |                        |                      |                        |
| ST94           |                 | i.For 1st hour  | Hour               | 5742.70                | Hour                 | 6079.22                | Hour                 | 6213.57                | Hour                 | 6460.25                |
| ST95           |                 | ii.For every hour or part thereof after 1st hour  | Hour               | 2018.78                | Hour                 | 2137.08                | Hour                 | 2184.31                | Hour                 | 2271.03                |
|                |                 | <b>IV Sparing of Departmental vehicle to the contractor:</b>  |                    |                        |                      |                        |                      |                        |                      |                        |
| <b>Sl. No.</b> | <b>Item No.</b> | <b>Description of Item</b>  | <b>Unit</b>        | <b>SSR for 2015-16</b> | <b>Unit</b>          | <b>SSR for 2016-17</b> | <b>Unit</b>          | <b>SSR for 2017-18</b> | <b>Unit</b>          | <b>SSR for 2018-19</b> |
| ST96           | 56              | Sparing of Departmental vehicle(Lorry) to the contractor is under emergency only. When departmental lorry is engaged to the Contractor on a particular day an amount per day or part there of should be recovered for a total KM run up to 100KM on that day plus for every additional KM rate, which ever is higher. The run to be worked out taking initial reading at starting point and closing reading after returning the same starting point duly completing the transport work. | Per day            | 3129.84                | Per day              | 3313.25                | Per day              | 3386.47                | Per day              | 3520.91                |
|                |                 |   | Plus additional KM | 26.02                  | Plus additional 1 KM | 27.54                  | Plus additional 1 KM | 28.15                  | Plus additional 1 KM | 29.27                  |
| ST97           | 57              | Providing Transportation to Officers  | Rs./km             | 5.00                   | Rs./km               | 5.00                   | Rs./km               | 5.00                   | Rs./km               | 6.50                   |

Note:

- 1 When the departmental lorry is used for transport of fragile and costly equipment, they have to be insured by the contractor in first place before transport and the same will be claimed in the respective work bill.
- 2 If the crane is given on hire to other than APTRANSCO works, the rate is a minimum of Rs. 29283.12 (Rs.1220.13-per hr X 24Hrs) + (Fuel cost & lubricants) per day or part thereof and the time is to be reckoned from the time of leaving department premises till reaching back.

Sd/- J.V.RAO  
DIRECTOR(TECHNICAL)

// FORWARD BY ORDER //



EXECUTIVE ENGINEER-3  
O/o Chief Engineer(Construction)  
APTRANSCO  
Vidyut Soudha, Vijayawada

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## ANNEXURE -IV

## TRANSPORT OF EQUIPMENTS / MATERIALS

| Sl.No. | Item No. | Description of Item   | Per Load<br>SSR<br>2015-16 | Per Load<br>SSR<br>2016-17 | Per Load<br>SSR<br>2017-18 | Per Load<br>SSR<br>2018-19 |
|--------|----------|---|----------------------------|----------------------------|----------------------------|----------------------------|
|        |          | The following are the minimum materials / equipment, for each load. One Load = 9.0 MT   |                            |                            |                            |                            |
|        | <b>1</b> | <b>CTs, PTs, &amp; CVTs:</b>  |                            |                            |                            |                            |
| T.1    | 1.a      | 220 kV  | 2 Nos.                     | 2 Nos.                     | 2 Nos.                     | 2 Nos.                     |
| T.2    | 1.b      | 132 kV  | 3 Nos.                     | 3 Nos.                     | 3 Nos.                     | 3 Nos.                     |
| T.3    | 1.c      | 33 kV   | 12 Nos.                    | 12 Nos.                    | 12 Nos.                    | 12 Nos.                    |
|        |          | NOTE: For transport of 220kV CTs, PTs & CVTs extra provision may be added for each load towards labour for clearing the obstructions like electrically and telephone lines as the equipment are very tall.(In Rupees) | 190.40                     | 201.56                     | 206.01                     | 214.19                     |
|        | <b>2</b> | <b>SF6 Circuit Breakers:</b>  |                            |                            |                            |                            |
| T.4    | 2.a      | 220 kV  | 1/2 sets                   | 1/2 sets                   | 1/2 sets                   | 1/2 sets                   |
| T.5    | 2.b      | 132 kV  | 2/3 sets                   | 2/3 sets                   | 2/3 sets                   | 2/3 sets                   |
| T.6    | 2.c      | 33 kV   | 2 Nos.                     | 2 Nos.                     | 2 Nos.                     | 2 Nos.                     |
|        | <b>3</b> | <b>Isolators with or without Earth switch including post type insulators:</b>   |                            |                            |                            |                            |
| T.7    | 3.a      | 220 kV  | 1 set.                     | 1 set.                     | 1 set.                     | 1 set.                     |
| T.8    | 3.b      | 132 kV  | 2 Sets                     | 2 Sets                     | 2 Sets                     | 2 Sets                     |
| T.9    | 3.c      | 33 kV   | 8 Nos.                     | 8 Nos.                     | 8 Nos.                     | 8 Nos.                     |
|        | <b>4</b> | <b>Lighting Arrestors:</b>  |                            |                            |                            |                            |
| T.10   | 4.a      | 220 kV  | 6 Nos.                     | 6 Nos.                     | 6 Nos.                     | 6 Nos.                     |
| T.11   | 4.b      | 132 kV  | 6 Nos.                     | 6 Nos.                     | 6 Nos.                     | 6 Nos.                     |
| T.12   | 4.c      | 33 kV   | 24 Nos.                    | 24 Nos.                    | 24 Nos.                    | 24 Nos.                    |
|        | <b>5</b> | <b>Control &amp; Relay panels:</b>  |                            |                            |                            |                            |
|        |          |   | 6 Nos.                     | 6 Nos.                     | 6 Nos.                     | 6 Nos.                     |
|        | <b>6</b> | <b>ACSR Conductor and Earth wire drums:</b>   |                            |                            |                            |                            |
| T.13   | 6.a      | ACSR moose  | 3Nos.                      | 3Nos.                      | 3Nos.                      | 3Nos.                      |
| T.14   | 6.b      | ACSR Zebra  | 4Nos.                      | 4Nos.                      | 4Nos.                      | 4Nos.                      |
| T.15   | 6.c      | ACSR Panther  | 6Nos.                      | 6Nos.                      | 6Nos.                      | 6Nos.                      |
| T.16   | 6.d      | Earth wire of 2 km per each drum  | 8Nos.                      | 8Nos.                      | 8Nos.                      | 8Nos.                      |
| T.17   | 6.e      | Earth wire of 3 km per each drum  | 6 Nos.                     | 6 Nos.                     | 6 Nos.                     | 6 Nos.                     |
| T.18   | 6.f      | CABLE DRUMS   | 10Nos.                     | 10Nos.                     | 10Nos.                     | 10Nos.                     |
|        | <b>7</b> | <b>Disc Insulators</b>  |                            |                            |                            |                            |
| T.19   | 7.a      | 70 KN   | 1000 Nos.                  | 1000 Nos.                  | 1000 Nos.                  | 1000 Nos.                  |
| T.20   | 7.b      | 120KN   | 800 Nos.                   | 800 Nos.                   | 800 Nos.                   | 800 Nos.                   |
|        | <b>8</b> | <b>Silicon Rubber Insulators</b>  |                            |                            |                            |                            |
| T.21   | 8.a      | 70 KN   | 275 Nos.                   | 275 Nos.                   | 275 Nos.                   | 275 Nos.                   |
| T.22   | 8.b      | 120KN   | 228 Nos.                   | 228 Nos.                   | 228 Nos.                   | 228 Nos.                   |
|        | <b>9</b> | <b>Wave Traps</b>   |                            |                            |                            |                            |
| T.23   | 9.a      | 220kV   | 6 Nos.                     | 6 Nos.                     | 6 Nos.                     | 6 Nos.                     |
| T.24   | 9.b      | 132kV   | 16 Nos.                    | 16 Nos.                    | 16 Nos.                    | 16 Nos.                    |

Sd/- J.V.RAO  
DIRECTOR(TECHNICAL)

// FORWARD BY ORDER //

*J. Jyothi*

EXECUTIVE ENGINEER-3  
O/o Chief Engineer(Construction)  
APTRANSCO  
Vidyut Soudha, Vijayawada

## ANNEXURE - V

## RATES FOR HANDLING &amp; ERECTION OF POWER TRANSFORMERS

| Sl. No. | Item No. | Description of Item  | Unit | SSR rate for 2015-16 (Rs.) | SSR rate for 2016-17 (Rs.) | SSR rate for 2017-18 (Rs.) | SSR rate for 2018-19 (Rs.) |
|---------|----------|--|------|----------------------------|----------------------------|----------------------------|----------------------------|
|         | 1        | 2  | 3    | 4                          | 5                          | 6                          | 7                          |
|         | A)       | <b>HANDLING AS JOB WORK BY DEPARTMENT</b>  |      |                            |                            |                            |                            |
|         | 1        | <b>Loading/Unloading of T&amp;P such as wooden sleepers, winch jacks, packing pieces etc., required for handling the power transformers.</b>   |      |                            |                            |                            |                            |
| PT1     | a        | Up to 31.5 MVA transformers, one load of wooden sleepers and another load of T&P such as chain pulley block and rail poles etc (Maximum two loads)   | Load | 1060.97                    | 1123.14                    | 1147.96                    | 1193.53                    |
| PT2     | b        | For above 31.5 MVA and up to 100 MVA transformers, two loads of wooden sleepers and another load of T&P such as chain pulley block, winch and rail poles etc (Maximum three loads)   | Load | 1060.97                    | 1123.14                    | 1147.96                    | 1193.53                    |
| PT3     | c        | For the above 100 MVA and up to 160 MVA transformers, three loads of wooden sleepers and another load of T&P such as winch machine and rail poles etc (Maximum Four loads)   | Load | 1060.97                    | 1123.14                    | 1147.96                    | 1193.53                    |
|         | 2        | <b>Loading/Unloading of fragile material such as</b>   |      |                            |                            |                            |                            |
|         | a)       | LV bushing / Neutral bushing for 132 kV transformer  |      |                            |                            |                            |                            |
| PT4     | (i)      | Loading  | Each | 31.73                      | 33.59                      | 34.33                      | 35.69                      |
| PT5     | (ii)     | Unloading  | Each | 25.39                      | 26.88                      | 27.47                      | 28.56                      |
|         | b)       | 132kV Bushings   |      |                            |                            |                            |                            |
| PT6     | (i)      | Loading  | Each | 124.82                     | 132.13                     | 135.05                     | 140.41                     |
| PT7     | (ii)     | Unloading  | Each | 124.82                     | 132.13                     | 135.05                     | 140.41                     |
|         | c)       | 220kV Bushings   |      |                            |                            |                            |                            |
| PT8     | (i)      | Loading  | Each | 249.64                     | 264.27                     | 270.11                     | 280.83                     |
| PT9     | (ii)     | Unloading  | Each | 249.64                     | 264.27                     | 270.11                     | 280.83                     |
|         |          | <b>NOTE :If loading / Un loading is done with Crane, 1/3rd Charges are to be paid towards labour charges and remaining amount is towards crance hire charges.</b>  |      |                            |                            |                            |                            |
| PT10    | 3        | Loading/Unloading of accessories of transformer including raidator, pipe line, FCC & RTCC panels, conservator tank, turrets LA set frames and oil barrels 'A' frame and header etc., (For 50MVA and above 50 MVA PTRs without oil barrels)                           | Load | 1755.95                    | 1858.85                    | 1899.93                    | 1975.36                    |
|         | 4        | <b>Dragging of power transformer main tank duly arranging wooden sleeper platform providing packing pieces, jacking up the transformer, insertion of wooden sleeper, rail poles arrangement of pullies, steel ropes positioning of winch and anchoring of winch.</b> |      |                            |                            |                            |                            |
|         | a        | Transformers upto 16 MVA capacity  |      |                            |                            |                            |                            |
| PT11    |          | Up to 10 Mtrs.   | LS   | 2794.71                    | 2958.48                    | 3023.86                    | 3143.91                    |
| PT12    |          | Over and above 10 Mtrs.  | RM   | 278.20                     | 294.50                     | 301.01                     | 312.96                     |
|         | b        | Transformers above 16MVA and upto 31.5 MVA capacity  |      | 0.00                       | 0.00                       | 0.00                       | 0.00                       |
| PT13    |          | Up to 10 Mtrs.   | LS   | 5103.89                    | 5402.98                    | 5522.39                    | 5741.63                    |
| PT14    |          | Over and above 10 Mtrs.  | RM   | 510.92                     | 540.86                     | 552.81                     | 574.76                     |
|         | c        | Transformers above 31.5MVA and upto 50 MVA capacity  |      |                            |                            |                            |                            |
| PT15    |          | Up to 10 Mtrs.   | LS   | 5956.47                    | 6305.52                    | 6444.87                    | 6700.73                    |
| PT16    |          | Over and above 10 Mtrs.  | RM   | 595.54                     | 630.44                     | 644.37                     | 669.95                     |
|         | d        | Transformers above 50MVA and upto 100 MVA capacity   |      | 0.00                       | 0.00                       | 0.00                       | 0.00                       |
| PT17    |          | Up to 10 Mtrs.   | LS   | 7361.23                    | 7792.60                    | 7964.82                    | 8281.02                    |
| PT18    |          | Over and above 10 Mtrs.  | RM   | 735.17                     | 778.25                     | 795.45                     | 827.03                     |

| Sl. No. | Item No. | Description of Item   | Unit  | SSR rate for 2015-16 (Rs.) | SSR rate for 2016-17 (Rs.) | SSR rate for 2017-18 (Rs.) | SSR rate for 2018-19 (Rs.) |
|---------|----------|---|-------|----------------------------|----------------------------|----------------------------|----------------------------|
|         | e        | Transformers above 100MVA and upto 160 MVA capacity   |       | 0.00                       | 0.00                       | 0.00                       | 0.00                       |
| PT19    |          | Up to 10 Mtrs.  | LS    | 9470.48                    | 10025.45                   | 10247.01                   | 10653.82                   |
| PT20    |          | Over and above 10 Mtrs.   | RM    | 947.79                     | 1003.33                    | 1025.50                    | 1066.21                    |
|         | 5        | <b>Turning the transformer through 90 degrees including making arrangements as above.</b>   |       |                            |                            |                            |                            |
| PT21    | a        | Transformers upto 16 MVA capacity   | Each  | 2501.70                    | 2648.30                    | 2706.83                    | 2814.29                    |
| PT22    | b        | Transformers above 16MVA and upto 31.5 MVA capacity   | Each  | 3137.43                    | 3321.28                    | 3394.68                    | 3529.45                    |
| PT23    | c        | Transformers above 31.5MVA and upto 50 MVA capacity   | Each  | 3902.22                    | 4130.89                    | 4222.18                    | 4389.80                    |
| PT24    | d        | Transformers above 50MVA and upto 100 MVA capacity  | Each  | 4464.97                    | 4726.62                    | 4831.08                    | 5022.87                    |
| PT25    | e        | Transformers above 100MVA and upto 160 MVA capacity   | Each  | 5580.95                    | 5907.99                    | 6038.56                    | 6278.29                    |
|         | 6        | <b>Turning the transformer through 180 degrees including making arrangements as above.</b>  |       |                            |                            |                            |                            |
| PT26    | a        | Transformers upto 16 MVA capacity   | Each  | 4336.98                    | 4591.13                    | 4692.59                    | 4878.89                    |
| PT27    | b        | Transformers above 16MVA and upto 31.5 MVA capacity   | Each  | 5214.95                    | 5520.55                    | 5642.55                    | 5866.56                    |
| PT28    | c        | Transformers above 31.5MVA and upto 50 MVA capacity   | Each  | 6144.76                    | 6504.84                    | 6648.60                    | 6912.55                    |
| PT29    | d        | Transformers above 50MVA and upto 100 MVA capacity  | Each  | 6828.10                    | 7228.23                    | 7387.97                    | 7681.27                    |
| PT30    | e        | Transformers above 100MVA and upto 160 MVA capacity   | Each  | 8192.66                    | 8672.75                    | 8864.42                    | 9216.34                    |
| PT31    | 7(a)     | Anchoring of transformer including excavation of trench of 4 x 1x0. 5 mtrs for anchoring and burying 2 Nos. sleepers in it and removing the same after work is completed. | 1 Job | 1060.97                    | 1123.14                    | 1147.96                    | 1193.53                    |
| PT32    | 7(b)     | Movement of 10 MT winch for anchoring.  | 1 Job | 960.48                     | 1016.76                    | 1039.23                    | 1080.49                    |
|         | 8        | <b>Lifting/Lowering the transformer main tank to the required height of one sleeper using jacks and wooden sleepers packing pieces for loading onto /from the truck.</b>  |       |                            |                            |                            |                            |
| PT33    | a        | Transformers upto 16 MVA capacity   | Each  | 3035.89                    | 3213.79                    | 3284.81                    | 3415.22                    |
| PT34    | b        | Transformers above 16MVA and upto 31.5 MVA capacity   | Each  | 4678.65                    | 4952.82                    | 5062.28                    | 5263.25                    |
| PT35    | c        | Transformers above 31.5MVA and upto 50 MVA capacity   | Each  | 5825.30                    | 6166.66                    | 6302.94                    | 6553.17                    |
| PT36    | d        | Transformers above 50MVA and upto 100 MVA capacity  | Each  | 7765.31                    | 8220.36                    | 8402.03                    | 8735.59                    |
| PT37    | e        | Transformers above 100MVA and upto 160 MVA capacity   | Each  | 9935.92                    | 10518.16                   | 10750.61                   | 11177.41                   |
|         | 9        | <b>Pulling the transformer from platform to the truck for loading/ from truck to the platform for unloading</b>   |       |                            |                            |                            |                            |
| PT38    | a        | Transformers upto 16 MVA capacity   | Each  | 2553.53                    | 2703.17                    | 2762.91                    | 2872.60                    |
| PT39    | b        | Transformers above 16MVA and upto 31.5 MVA capacity   | Each  | 4464.97                    | 4726.62                    | 4831.08                    | 5022.87                    |
| PT40    | c        | Transformers above 31.5MVA and upto 50 MVA capacity   | Each  | 4962.14                    | 5252.92                    | 5369.01                    | 5582.16                    |
| PT41    | d        | Transformers above 50MVA and upto 100 MVA capacity  | Each  | 6205.05                    | 6568.67                    | 6713.84                    | 6980.38                    |
| PT42    | e        | Transformers above 100MVA and upto 160 MVA capacity   | Each  | 8386.24                    | 8877.67                    | 9073.87                    | 9434.10                    |
|         | 10       | <b>Fixing of transformer wheels to main tank including alignment of transformer etc.,</b>   |       |                            |                            |                            |                            |
| PT43    | a        | Transformers upto 16 MVA capacity   | Job   | 1180.50                    | 1249.68                    | 1277.30                    | 1328.01                    |
| PT44    | b        | Transformers above 16MVA and upto 31.5 MVA capacity   | Job   | 1393.12                    | 1474.76                    | 1507.35                    | 1567.19                    |
| PT45    | c        | Transformers above 31.5MVA and upto 50 MVA capacity   | Job   | 2028.86                    | 2147.75                    | 2195.22                    | 2282.37                    |

| Sl. No. | Item No. | Description of Item   | Unit | SSR rate for 2015-16 (Rs.) | SSR rate for 2016-17 (Rs.) | SSR rate for 2017-18 (Rs.) | SSR rate for 2018-19 (Rs.) |
|---------|----------|---|------|----------------------------|----------------------------|----------------------------|----------------------------|
| PT46    | d        | Transformers above 50MVA and upto 100 MVA capacity  | Job  | 2628.63                    | 2782.67                    | 2844.17                    | 2957.08                    |
| PT47    | e        | Transformers above 100MVA and upto 160 MVA capacity   | Job  | 3894.82                    | 4123.06                    | 4214.18                    | 4381.48                    |
| PT48    | 11       | Arranging gas cutter equipment at site including operator and helper to remove anchoring of transformer main tank on truck for loading and unloading (including cost of gas)  | Job  | 1934.72                    | 2048.09                    | 2093.35                    | 2176.46                    |
|         | 12       | <b>Removal of steel rope and turn buckles of transformer main tank on truck.</b>  |      |                            |                            |                            |                            |
| PT49    | (a)      | Up to 100MVA Capacity   | Job  | 532.07                     | 563.25                     | 575.70                     | 598.56                     |
| PT50    | (b)      | above 100MVA and up to 160MVA Capacity  | Job  | 796.52                     | 843.20                     | 861.83                     | 896.04                     |
|         | 13       | Tying the transformer main tank on to the truck with steel rope and turn buckles  |      |                            |                            |                            |                            |
| PT51    | (a)      | Up to 100MVA Capacity   | Job  | 684.40                     | 724.51                     | 740.52                     | 769.92                     |
| PT52    | (b)      | above 100MVA and up to 160MVA Capacity  | Job  | 1023.95                    | 1083.95                    | 1107.91                    | 1151.89                    |
|         | 14       | Assisting for lifting of overhead live lines, while transporting of transformers by truck.  |      |                            |                            |                            |                            |
| PT53    | (a)      | Up to 100MVA Capacity   | Job  | 1498.90                    | 1586.74                    | 1621.81                    | 1686.20                    |
| PT54    | (b)      | above 100MVA and up to 160MVA Capacity  | Job  | 2995.69                    | 3171.24                    | 3241.32                    | 3370.00                    |
|         | B)       | <b>ERECTION OF POWER TRANSFORMERS AS JOB WORK BY DEPARTMENT</b>   |      |                            |                            |                            |                            |
|         | 1        | Opening of crates and keep ready for erection of accessories of transformers  |      |                            |                            |                            |                            |
| PT55    | a        | Transformers upto 16 MVA capacity   | Job  | 1668.15                    | 1765.90                    | 1804.93                    | 1876.59                    |
| PT56    | b        | Transformers above 16MVA and upto 31.5 MVA capacity   | Job  | 2084.92                    | 2207.10                    | 2255.88                    | 2345.44                    |
| PT57    | c        | Transformers above 31.5MVA and upto 50 MVA capacity   | Job  | 2790.48                    | 2954.00                    | 3019.28                    | 3139.15                    |
| PT58    | d        | Transformers above 50MVA and upto 100 MVA capacity  | Job  | 3348.99                    | 3545.24                    | 3623.59                    | 3767.45                    |
| PT59    | e        | Transformers above 100MVA and upto 160 MVA capacity   | Job  | 4464.97                    | 4726.62                    | 4831.08                    | 5022.87                    |
|         | 2        | Shifting, loading dragging of accessories of transformers like radiator, conservator tank, pipe line, fans, headers, DM box, FCC, oil barrels etc., from place of storage to work spot and vice versa of transformers.(For 50MVA and above 50 MVA PTRs without oil barrels) |      |                            |                            |                            |                            |
| PT60    | a        | Transformers upto 31.5 MVA capacity   | Job  | 2501.70                    | 2648.30                    | 2706.83                    | 2814.29                    |
| PT61    | b        | Transformers above 31.5MVA and upto 100 MVA capacity  | Job  | 3338.42                    | 3534.05                    | 3612.15                    | 3755.55                    |
| PT62    | c        | Transformers above 100MVA and upto 160 MVA capacity   | Job  | 4585.56                    | 4854.27                    | 4961.55                    | 5158.52                    |
| PT63    | d        | Transportation of oil barrels from unloading place to the filter machine in the substation.   | Job  | 2495.35                    | 2641.58                    | 2699.96                    | 2807.15                    |
|         | 3        | Erection of Radiators to the transformers including headers   |      |                            |                            |                            |                            |
| PT64    | a        | Transformers upto 16 MVA capacity   | Job  | 1856.44                    | 1965.23                    | 2008.66                    | 2088.40                    |
| PT65    | b        | Transformers above 16MVA and upto 31.5 MVA capacity   | Job  | 2974.53                    | 3148.84                    | 3218.43                    | 3346.20                    |
| PT66    | c        | Transformers above 31.5MVA and upto 50 MVA capacity   | Job  | 3697.01                    | 3913.65                    | 4000.14                    | 4158.95                    |
| PT67    | d        | Transformers above 50MVA and upto 100 MVA capacity  | Job  | 4531.62                    | 4797.17                    | 4903.19                    | 5097.85                    |
| PT68    | e        | Transformers above 100MVA and upto 160 MVA capacity   | Job  | 6177.55                    | 6539.55                    | 6684.07                    | 6949.43                    |
|         | 4        | Erection of main conservator tank.  |      |                            |                            |                            |                            |
| PT69    | a        | Transformers upto 16 MVA capacity   | Each | 1674.50                    | 1772.63                    | 1811.81                    | 1883.74                    |
| PT70    | b        | Transformers above 16MVA and upto 31.5 MVA capacity   | Each | 1861.73                    | 1970.83                    | 2014.39                    | 2094.36                    |
| PT71    | c        | Transformers above 31.5MVA and upto 50 MVA capacity   | Each | 2731.24                    | 2891.29                    | 2955.19                    | 3072.51                    |

| Sl. No. | Item No. | Description of Item   | Unit | SSR rate for 2015-16 (Rs.) | SSR rate for 2016-17 (Rs.) | SSR rate for 2017-18 (Rs.) | SSR rate for 2018-19 (Rs.) |
|---------|----------|---|------|----------------------------|----------------------------|----------------------------|----------------------------|
| PT72    | d        | Transformers above 50MVA and upto 100 MVA capacity  | Each | 4253.41                    | 4502.66                    | 4602.17                    | 4784.88                    |
| PT73    | e        | Transformers above 100MVA and upto 160 MVA capacity   | Each | 5475.17                    | 5796.01                    | 5924.10                    | 6159.29                    |
| PT74    | f        | Pronal bag testing and commissioning  | Each | 1841.63                    | 1949.55                    | 1992.64                    | 2071.75                    |
| PT75    | g        | Hiring of compressor  | Each | 1290.52                    | 1366.14                    | 1396.33                    | 1451.76                    |
| PT76    | h        | Dry Nitrogen Cylinder (In case, Dry Nitrogen Cylinder is used for commissioning of Air cell instead of Air compressor), excluding transportation cost.                  | Each | 2021.46                    | 2139.92                    | 2187.21                    | 2274.04                    |
|         | 5        | Erection of transformer bushing   |      |                            |                            |                            |                            |
| PT77    | a        | 33 kV Neutral and tertiary bushings   | Each | 364.94                     | 386.33                     | 394.87                     | 410.55                     |
| PT78    | b(i)     | 132 kV bushings up to 100MVA.   | Each | 679.11                     | 718.91                     | 734.80                     | 763.97                     |
| PT79    | b(ii)    | 132 kV bushings for above 100MVA and up to 160MVA   | Each | 850.47                     | 900.31                     | 920.21                     | 956.74                     |
| PT80    | c(i)     | 220 kV bushings up to 100MVA  | Each | 1020.78                    | 1080.60                    | 1104.48                    | 1148.33                    |
| PT81    | c(ii)    | 220 kV bushings for above 100MVA and up to 160MVA   | Each | 1265.13                    | 1339.27                    | 1368.87                    | 1423.21                    |
| PT82    | d(i)     | 220kV 3 Nos. erection of turrets up to 100MVA   | Job  | 1460.82                    | 1546.42                    | 1580.60                    | 1643.35                    |
| PT83    | d(ii)    | 220kV 3 Nos. erection of turrets for above 100MVA and up to 160MVA  | Job  | 1916.73                    | 2029.05                    | 2073.89                    | 2156.22                    |
| PT84    | e(i)     | 132kV 3 Nos. erection of turrets up to 100MVA   | Job  | 685.45                     | 725.62                     | 741.66                     | 771.10                     |
| PT85    | e(ii)    | 132kV 3 Nos. erection of turrets for above 100MVA and up to 160MVA  | Job  | 1004.91                    | 1063.80                    | 1087.31                    | 1130.48                    |
| PT86    | 6        | Erection of air blowers (cooling fans) including frames and control cubical etc., (for each transformer)  | Job  | 2760.86                    | 2922.65                    | 2987.24                    | 3105.83                    |
| PT87    | 7        | Erection of LA frames (HV & LV side)  | Each | 866.34                     | 917.11                     | 937.38                     | 974.59                     |
| PT88    | 8(a)     | i).Erection of driving mechanism box, bevel gear of OLTC for below 100MVA..   | Each | 866.34                     | 917.11                     | 937.38                     | 974.59                     |
| PT89    |          | ii).Erection of driving mechanism box, bevel gear of OLTC 100MVA and above 100MVA.  | Each | 1732.68                    | 1834.22                    | 1874.76                    | 1949.19                    |
| PT90    | 8(b)     | ii).Erection of OLTC conservator tank with stand for up to 100MVA.  | Each | 1119.15                    | 1184.73                    | 1210.91                    | 1258.98                    |
| PT91    |          | ii).Erection of OLTC conservator tank with stand for above 100MVA and upto 160MVA.  | Each | 1674.50                    | 1772.63                    | 1811.81                    | 1883.74                    |
|         | 9        | Erection of pipe line.  |      |                            |                            |                            |                            |
| PT92    | a        | Transformers upto 31.5 MVA capacity   | Each | 586.02                     | 620.36                     | 634.07                     | 659.24                     |
| PT93    | b        | Transformers above 31.5MVA and upto 50 MVA cap  | Each | 875.86                     | 927.19                     | 947.68                     | 985.30                     |
| PT94    | c        | Transformers above 50MVA and upto 100 MVA cap   | Each | 1484.09                    | 1571.06                    | 1605.78                    | 1669.53                    |
| PT95    | d        | Transformers above 100MVA and upto 160 MVA capacity   | Each | 1855.38                    | 1964.11                    | 2007.52                    | 2087.22                    |
| PT96    | 10       | i).Erection of Thermometer, pressure Relief valve and vent pipe etc.,   | Each | 586.02                     | 620.36                     | 634.07                     | 659.24                     |
| PT97    |          | ii).Erection of Thermometer, pressure Relief valve and vent pipe etc.,100MVA and above PTRs.  | Each | 875.86                     | 927.19                     | 947.68                     | 985.30                     |
|         | 11       | Erection of detachable OLTC including connecting internal jumper with OLTC tank.  |      |                            |                            |                            |                            |
| PT98    | a        | Transformers upto 31.5 MVA capacity   | Each | 2878.27                    | 3046.94                    | 3114.28                    | 3237.92                    |
| PT99    | b        | Transformers above 31.5MVA and upto 100 MVA capacity  | Each | 4336.98                    | 4591.13                    | 4692.59                    | 4878.89                    |
| PT100   | c        | Transformers above 100MVA and upto 160 MVA capacity   | Each | 4835.20                    | 5118.54                    | 5231.66                    | 5439.36                    |
| PT101   | 12       | i).Erection of separate, cooler bay including 'A' frame header pipes and bends of transformers up to 100 PTRs MVA capacity.   | Bay  | 6205.05                    | 6568.67                    | 6713.84                    | 6980.38                    |
| PT102   |          | ii).Erection of separate, cooler bay including 'A' frame header pipes and bends of transformers above 100 MVA and up to 160MVA PTRs capacity.                           | Bay  | 6828.10                    | 7228.23                    | 7387.97                    | 7681.27                    |
|         | 13(i)    | Removal of old worn out gaskets and replacement with new gaskets including cutting, pasting of gasket with all accessories including cost of adhesives. Excl. top cover |      |                            |                            |                            |                            |

| Sl. No. | Item No. | Description of Item  | Unit    | SSR rate for 2015-16 (Rs.) | SSR rate for 2016-17 (Rs.) | SSR rate for 2017-18 (Rs.) | SSR rate for 2018-19 (Rs.) |
|---------|----------|--|---------|----------------------------|----------------------------|----------------------------|----------------------------|
| PT103   | a        | Transformers upto 16 MVA capacity  | Job     | 2400.15                    | 2540.80                    | 2596.95                    | 2700.05                    |
| PT104   | b        | Transformers 31.5MVA and 50 MVA capacity   | Job     | 3729.80                    | 3948.37                    | 4035.63                    | 4195.84                    |
| PT105   | c        | Transformers 100 MVA and upto 160 MVA capacity   | Job     | 4799.24                    | 5080.48                    | 5192.76                    | 5398.91                    |
|         | 13(II)   | Removal of old worn out gaskets and replacement with new gaskets including cutting, pasting of gasket with all accessories including cost of adhesives. for top cover. The following rates are exclusive of crane hire charges which are payable at actuals. |         |                            |                            |                            |                            |
| PT106   | a        | Transformers upto 16 MVA capacity  | Job     | 1201.66                    | 1272.08                    | 1300.19                    | 1351.81                    |
| PT107   | b        | Transformers 31.5MVA and 50 MVA capacity   | Job     | 1467.17                    | 1553.15                    | 1587.47                    | 1650.49                    |
| PT108   | c        | Transformers 100 MVA and upto 160 MVA capacity   | Job     | 1731.62                    | 1833.09                    | 1873.60                    | 1947.98                    |
| PT109   | 14       | Erection of supporting insulators and earth flat for HV & LV Neutrals / Tertiary.  | Job     | 586.02                     | 620.36                     | 634.07                     | 659.24                     |
|         | C        | <b>OIL FILTRATION OF TRANSFORMERS AS JOB WORK BY DEPARTMENT</b>  |         |                            |                            |                            |                            |
| PT110   | 1        | Loading / Unloading of 2KL Oil filter.   | Job     | 2048.96                    | 2169.03                    | 2216.97                    | 2304.98                    |
| PT111   | 2        | Laying of L.T.Cable from AC Supply point to filter connecting Pipes etc, from filter to transformer and back to filter and Vice-versa.   | Job     | 990.10                     | 1048.12                    | 1071.28                    | 1113.81                    |
| PT112   | 3        | Loading / unloading of full transformer oil barrels.   | Barrel  | 40.20                      | 42.56                      | 43.50                      | 45.23                      |
| PT113   | 4        | Loading / unloading of oil drums.  | Barrel  | 6.35                       | 6.72                       | 6.87                       | 7.14                       |
|         | 5        | Oil topping for transformer through oil filter:  |         |                            |                            |                            |                            |
|         | 5.1      | Transformer already filled with oil  |         |                            |                            |                            |                            |
| PT114   | a        | Transformers upto 31.5 MVA capacity  | Each    | 787.00                     | 833.12                     | 851.53                     | 885.34                     |
| PT115   | b        | Transformers above 31.5MVA and upto 50 MVA capacity when the transformer is received with transformer oil  | Each    | 1732.68                    | 1834.22                    | 1874.76                    | 1949.19                    |
| PT116   | 5.2      | Transformers above 50MVA upto 160 MVA capacity When the transformer is received empty with Nitrogen  | Barrel  | 25.39                      | 26.88                      | 27.47                      | 28.56                      |
|         | 6        | Assisting labour for filtering of oil for a period of 5 days during filtration of oil  |         |                            |                            |                            |                            |
| PT117   | a        | For a period of 5 days for Transformers upto 31.5 MVA capacity   | Each    | 3741.44                    | 3960.69                    | 4048.22                    | 4208.93                    |
| PT118   | b        | For a period of 5 days for Transformers above 31.5 MVA and upto 100 MVA capacity   | Each    | 5238.23                    | 5545.19                    | 5667.74                    | 5892.75                    |
| PT119   | c        | For a period of 5 days for Transformers above 100 MVA and upto 160 MVA capacity  | Each    | 7484.99                    | 7923.61                    | 8098.72                    | 8420.24                    |
| PT120   | a        | Over and above 5 days for Transformers upto 31.5 MVA capacity  | per day | 747.86                     | 791.68                     | 809.18                     | 841.30                     |
| PT121   | b        | Over and above 5 days for Transformers above 31.5 MVA and upto 100 MVA capacity  | per day | 1047.22                    | 1108.59                    | 1133.09                    | 1178.07                    |
| PT122   | c        | Over and above 5 days for Transformers above 100 MVA and upto 160 MVA capacity   | per day | 1496.79                    | 1584.50                    | 1619.52                    | 1683.81                    |
| PT123   | 7(i)     | Dismantling of control cables of power transformer for arranging, pulling of transformer maintank out of plinth for failed transformer or improvement of transformer capacity.   | Job     | 691.80                     | 732.34                     | 748.52                     | 778.24                     |
| PT124   | (ii)     | Laying of control cables for the transformers which are received with non completion of wiring on the transformer and complete wiring of the transformer on the tank.F.C.C,D.M box etc., (for old repaired transformers).                                    | Job     | 1841.63                    | 1949.55                    | 1992.64                    | 2071.75                    |
| PT125   | 8        | Shifting of filter machine in switch yard from existing place to near transformer or to the convenient place manually (where movement of tractor trailer is not possible).   | RM      | 85.68                      | 90.70                      | 92.70                      | 96.38                      |

| Sl. No. | Item No. | Description of Item  | Unit    | SSR rate for 2015-16 (Rs.) | SSR rate for 2016-17 (Rs.) | SSR rate for 2017-18 (Rs.) | SSR rate for 2018-19 (Rs.) |
|---------|----------|--|---------|----------------------------|----------------------------|----------------------------|----------------------------|
|         | 9        | Labour charges for arrangement for vaccum filling for the power transformer for prescribed time duration for 50MVA and above PTRs which are received at site with nitrogen gas filled. |         |                            |                            |                            |                            |
| PT126   | (a)      | Below 100MVA PTRs  | Job     | 2760.86                    | 2922.65                    | 2987.24                    | 3105.83                    |
| PT127   | (b)      | Above 100MVA PTRs.   | Job     | 5523.83                    | 5847.53                    | 5976.76                    | 6214.04                    |
| PT128   | 10       | Loading / Unloading of 5 KL Storage tanker.  | Job     | 913.94                     | 967.50                     | 988.88                     | 1028.14                    |
|         | 11       | Hire charges for a private tractor for transport of 6 KL of oil filter.  |         |                            |                            |                            |                            |
| PT129   |          | Up to 50 KM  | LS      | 4334.86                    | 4588.88                    | 4690.29                    | 4876.49                    |
| PT130   |          | Beyond 50 KM   | per KM  | 83.57                      | 88.47                      | 90.43                      | 94.02                      |
|         | 12       | Providing of oil tanker on daily hire charges  |         |                            |                            |                            |                            |
| PT131   | a        | 10 KL capacity   | Per day | 1359.27                    | 1438.92                    | 1470.72                    | 1529.11                    |
| PT132   | b        | 20 KL capacity   | Per day | 2492.18                    | 2638.22                    | 2696.52                    | 2803.57                    |
|         | 13       | Transportation of 10 KL & 20 KL oil tanker (including return trip charges), (a) or (b) only applicable   |         |                            |                            |                            |                            |
| PT133   |          | Minimum amount upto 50 KM  | LS      | 6796.37                    | 7194.64                    | 7353.64                    | 7645.58                    |
| PT134   |          | More than 50 KM  | KM      | 33.85                      | 35.83                      | 36.62                      | 38.07                      |
|         | 14       | Unloading of oil tanker at site and loading the same after completion of the job   |         |                            |                            |                            |                            |
| PT135   |          | 10 KL capacity   | Job     | 5379.97                    | 5695.24                    | 5821.10                    | 6052.20                    |
|         | 15(i)    | Complete wiring up of the transformer indicating systems cooler control fans and motor driving mechanism of OLTC panel providing suitable ferrules and lugs.                           |         |                            |                            |                            |                            |
| PT136   | a)       | 16/31.5 MVA Transformer  | LS      | 16227.71                   | 17178.65                   | 17558.30                   | 18256.36                   |
| PT137   | b)       | 50 MVA Transformer   | LS      | 21098.88                   | 22335.27                   | 22828.88                   | 23735.19                   |
| PT138   | c)       | 100 MVA Transformer  | LS      | 23400.65                   | 24771.93                   | 25319.39                   | 26324.57                   |
| PT139   | d)       | 160 MVA Transformer  | LS      | 23400.65                   | 24771.93                   | 25319.39                   | 26324.57                   |
|         | 15(ii)   | Complete wiring up of the transformer indicating systems cooler control fans and motor driving mechanism of OLTC panel providing suitable ferrules and lugs excluding OLTC panel       |         |                            |                            |                            |                            |
| PT140   | a)       | 16/31.5 MVA Transformer  | LS      | 8114.38                    | 8589.88                    | 8779.72                    | 9128.27                    |
| PT141   | b)       | 50 MVA Transformer   | LS      | 10548.38                   | 11166.52                   | 11413.30                   | 11866.41                   |
| PT142   | c)       | 100 MVA Transformer  | LS      | 11699.27                   | 12384.85                   | 12658.56                   | 13161.10                   |
| PT143   | d)       | 160 MVA Transformer  | LS      | 11699.27                   | 12384.85                   | 12658.56                   | 13161.10                   |
| PT144   | 16       | Draining of oil from main tank of the transformer into empty oil drums and stacking them neatly as directed by the APTRANSCO Engineer at site.   | KL      | 395.62                     | 418.80                     | 428.06                     | 445.05                     |
| PT145   | 17       | Unloading of 20 KL oil storage taken at site and loading the same after completion of the job  | Job     | 5877.14                    | 6221.54                    | 6359.04                    | 6611.49                    |
|         | D)       | Insurance for fragile material during transportation, erection, dismantling may be paid as per actuals from department side for department works.                                      |         |                            |                            |                            |                            |

Sd/- J.V.RAO  
DIRECTOR(TECHNICAL)

// FORWARD BY ORDER //

*J. Jyothsna*  
EXECUTIVE ENGINEER-3  
O/o Chief Engineer(Construction)  
APTRANSCO  
Vidyut Soudha, Vijayawada

**ANNEXURE - VI**  
**Rates for O&M works of EHT Lines**

| Sl. No. | Item No. | Description of work  | Unit       | SSR 2015-16 (Rs.) | SSR 2016-17 (Rs.) | SSR 2017-18 (Rs.) | SSR 2018-19 (Rs.) |
|---------|----------|--|------------|-------------------|-------------------|-------------------|-------------------|
| OM1     | 1        | (a).Providing of Vibration dampers ( for 220 KV & 132 KV lines) (Excluding Material & Transportation cost)   | Each       | 120.59            | 127.66            | 130.48            | 135.66            |
| OM2     |          | (b). Providing of spacer damper for 400 KV twin Moose lines (Excluding Material & Transportation cost)   | Each       | 165.02            | 174.69            | 178.55            | 185.64            |
|         | 2        | Painting of towers with two coats of aluminum paint using Aluminum paint 1st grade containing 306 Kg of Aluminum paste for 18 liters of thinner 1st coat is to be applied before erection of towers and 2nd coat after stringing and half round welding including cost of paint, cost of brushes, labour charges etc., complete. |            |                   |                   |                   |                   |
| OM3     | (a)      | First coat of 1st Grade Aluminum Paint duly scratching and cleaning of towers including labour charges, cost of paint, brushes etc.  | MT         | 3852.51           | 4078.27           | 4168.40           | 4333.89           |
| OM4     | (b)      | Labour charges for painting including scratching and cleaning of towers of 1st coat of Alluminum with out cost of paint & brushes.   | MT         | 1078.96           | 1142.19           | 1167.43           | 1213.78           |
| OM5     | (c)      | (*) Second coat of 1st Grade Aluminium Paint duly scratching and cleaning of towers including labour charges, cost of pint, brushes, etc.  | MT         | 2254.17           | 2386.26           | 2439.00           | 2535.83           |
| OM6     | (d)      | (*) Labour charges for painting including scratching and cleaning of towers of 2nd coat of Aluminum with out cost of paint & brushes.  | MT         | 611.41            | 647.24            | 661.54            | 687.80            |
|         |          | <b>(*): The requirement of 2nd coat is to be justified by the concerned Divisional Engineer/Executive Engineer before execution of the work.</b>   |            |                   |                   |                   |                   |
|         | 3        | Painting of towers with single coat of red oxide paint of 1st Grade, including scratching and cleaning of towers.  |            |                   |                   |                   |                   |
| OM7     | (a)      | One coat of 1st Grade Red Oxide Paint including labour charges for scratching and cleaning of towers including cost of paint, brushes etc.   | MT         | 2412.84           | 2554.23           | 2610.68           | 2714.32           |
| OM8     | (b)      | Labour charges for painting of towers including scratching and cleaning of towers without cost of paint & brushes.   | MT         | 1338.12           | 1416.53           | 1447.84           | 1505.32           |
| OM9     | 4        | Providing of Arcing Horns for 132 KV line on both tower side and line side i.e. two per string (Excluding Material & Transportation cost)(with lefty & Pullies)  | per string | 965.77            | 1022.36           | 1044.95           | 1086.43           |
| OM10    | 5        | Providing of Arcing Horns for 132 KV line (Excluding Material & Transportation cost)(without lefty & Pullies)  | Each       | 120.59            | 127.66            | 130.48            | 135.66            |
| OM11    | 6        | Providing of Arcing Horns for 220 KV line on both tower side and line side i.e. two per string (Excluding Material & Transportation cost)(with lefty & Pullies)  | per string | 1417.45           | 1500.51           | 1533.67           | 1594.56           |
| OM12    | 7        | Providing of Arcing Horns for 220 KV line (Excluding Material & Transportation cost)(without lefty & Pullies)  | Each       | 120.59            | 127.66            | 130.48            | 135.66            |
| OM13    | 8        | Providing of Missing angles/ Replacement of rusted angles on the existing towers departmentally (including transporaton charges & Excluding cost of tower parts, bolts & nuts)   | Per each   | 107.90            | 114.22            | 116.74            | 121.37            |
| OM14    | 9        | Replacement of insulators at Suspension tower of 132 KV line (Excluding Material & Transportation cost)  | Per string | 1216.47           | 1287.76           | 1316.22           | 1368.47           |
| OM15    | 10       | Replacement of insulators at Tension tower of 132 KV line (Excluding Material & Transportation cost)   | Per string | 2058.48           | 2179.11           | 2227.27           | 2315.69           |
| OM16    | 11       | Replacement of insulators at Suspension tower of 220 KV line (Excluding Material & Transportation cost)  | Per string | 1338.12           | 1416.53           | 1447.84           | 1505.32           |

| Sl. No. | Item No. | Description of work  | Unit       | SSR 2015-16 (Rs.)       | SSR 2016-17 (Rs.) | SSR 2017-18 (Rs.) | SSR 2018-19 (Rs.) |
|---------|----------|--|------------|-------------------------|-------------------|-------------------|-------------------|
| OM17    | 12       | Replacement of insulators at Tension tower of 220 KV line (Excluding Material & Transportation cost)   | Per string | 2366.30                 | 2504.97           | 2560.33           | 2661.98           |
| OM18    | 13       | Replacement of 132 KV line single suspension insulator string with double suspension insulator strings (Excluding Material & Transportation cost)  | Per string | 1823.65                 | 1930.52           | 1973.18           | 2051.52           |
| OM19    | 14       | Replacement of 132 KV line single tension insulator string with double tension insulator strings (Excluding Material & Transportation cost)  | Per string | 3086.66                 | 3267.54           | 3339.75           | 3472.34           |
| OM20    | 15       | Replacement of 220 KV line single suspension insulator string with double suspension insulator strings (Excluding Material & Transportation cost)  | Per string | 1936.83                 | 2050.33           | 2095.64           | 2178.84           |
| OM21    | 16       | Replacement of 220 KV line single tension insulator string with double tension insulator strings (Excluding Material & Transportation cost)  | Per string | 3548.92                 | 3756.89           | 3839.92           | 3992.36           |
| OM22    | 17       | Replacement of insulators at Suspension tower of 400kV line (Excluding material & Transportation cost )  | Per string | 1814.13                 | 1920.44           | 1962.88           | 2040.81           |
| OM23    | 18       | Replacement of insulators at Tension tower of 400kV line (Excluding material & Transportation cost )   | Per string | 3025.31                 | 3202.59           | 3273.37           | 3403.32           |
| OM24    | 19       | Painting the welded portion of GI bolts and nuts of towers In the section ground level and up to X-arm level including all bolts connecting the bracings at the bottom x-arm level with one coat of zinc rich paint including cost of paing. | Each       | 4.53                    | 4.80              | 4.91              | 5.10              |
| OM25    | 18       | Fixing of earth bonds for existing transmission line towers  | Each       | 120.59                  | 127.66            | 130.48            | 135.66            |
|         | 19       | Re-Stringing of power conductor on the existing lines (for   |            |                         |                   |                   |                   |
| OM26    | a        | 3. Nos. Zebra conductors   | RKM        | 30433.96                | 32217.39          | 32929.39          | 34236.69          |
| OM27    | b        | 6. Nos. Zebra conductors   | RKM        | 45649.36                | 48324.41          | 49392.38          | 51353.26          |
| OM28    | c        | 2. Nos. Panther conductors   | RKM        | 16227.71                | 17178.65          | 17558.30          | 18255.36          |
| OM29    | d        | 3. Nos. Panther conductors   | RKM        | 24345.27                | 25771.90          | 26341.46          | 27387.22          |
| OM30    | e        | 6. Nos. Panther conductors   | RKM        | 38549.41                | 40808.41          | 41710.28          | 43366.18          |
| OM31    | f        | 2. Nos. Moose conductors   | RKM        | 25698.19                | 27204.10          | 27805.31          | 28909.18          |
| OM32    | g        | 3. Nos. Moose conductors   | RKM        | 38549.41                | 40808.41          | 41710.28          | 43366.18          |
| OM33    | h        | 6. Nos. Moose conductors   | RKM        | 60863.70                | 64430.31          | 65854.22          | 68468.63          |
| OM34    | i        | 3. Nos. Bear conductors  | RKM        | 30433.96                | 32217.39          | 32929.39          | 34236.69          |
| OM35    | j        | 6. Nos. Bear conductors  | RKM        | 45649.36                | 48324.41          | 49392.38          | 51353.26          |
| OM36    | k        | 3. Nos. Dog conductors   | RKM        | 18257.63                | 19327.53          | 19754.67          | 20538.93          |
| OM37    | l        | 6. Nos. Dog conductors   | RKM        | 28910.73                | 30604.90          | 31281.27          | 32523.14          |
|         | 21       | <b>Loading / Unloading charges :</b>   |            |                         |                   |                   |                   |
|         | (a)      | For above half drum and up to one drum full drum rate  |            | Basic rate of Full Drum |                   |                   |                   |
|         | (b)      | For below half drum and for a Piece  |            | Basic rate of Half Drum |                   |                   |                   |

Sd/- J.V.RAO  
DIRECTOR(TECHNICAL)

// FORWARD BY ORDER //

*J. Jyothi*  
EXECUTIVE ENGINEER-3  
O/o Chief Engineer(Construction)  
APTRANSCO  
Vidyut Soudha, Vijayawada

ANNEXURE-VII  
SSR RATES FROM TELECOM WING

| Sl.No. | Description   | Unit | SSR 2015-16 Rates (Rs.) | SSR 2016-17 Rates (Rs.) | SSR 2017-18 Rates (Rs.) | SSR 2018-19 Rates (Rs.) |
|--------|---|------|-------------------------|-------------------------|-------------------------|-------------------------|
| 1      | Erection of PLCC panel in 220KV/132KV SS  | Each | 5996.47                 | 6347.87                 | 6488.15                 | 6745.73                 |
| 2      | Erection of LMU   | Each | 1001.30                 | 1059.98                 | 1083.40                 | 1126.41                 |
| 3      | Erection of Wave Trap   |      |                         |                         |                         |                         |
| i      | Fixing of wavetrapp on pedastal mounting insulator stack in 400KV   | Each | 5603.43                 | 5931.79                 | 6062.88                 | 6303.58                 |
| ii     | Fixing of the wave trap on pedastal mounting insulator stack in 200KV   | Each | 4540.96                 | 4807.06                 | 4913.30                 | 5108.36                 |
| iii    | Fixing of the wave trap on Suspension mounting including jumpering in 132KV                                     | Each | 2707.13                 | 2865.77                 | 2929.11                 | 3045.39                 |
| 4      | Erection of PLCC 48V DC/50A, 35A charger in 220KV/132KV   | Each | 2768.30                 | 2930.52                 | 2995.29                 | 3114.20                 |
| 5      | Erection of PLCC 48V DC/100A charger in 400 KV SS   | Each | 8054.57                 | 8526.57                 | 8715.01                 | 9061.00                 |
| 6      | Erection of 48V/200AH & 250AH battery sets in 132 & 220 KV SS   | Each | 6281.91                 | 6650.03                 | 6797.00                 | 7066.84                 |
| 7      | Erection of 48V/400AH battery set in 400 KV SS  | Each | 8345.68                 | 8834.73                 | 9029.98                 | 9388.47                 |
| 8      | Erection of OLTE & MUX (Optical line terminal equipment) equivalent to PLCC pannel                              | Each | 5996.47                 | 6347.87                 | 6488.15                 | 6745.73                 |
| 9      | Erection of FDP(Fibre Distribution Panel in 400KV/220KV/132KV SS (12F)  | Each | 8512.18                 | 9011.00                 | 9210.14                 | 9575.78                 |
| 10     | Erection of FDP(Fibre Distribution Panel in 400KV/220KV/132KV SS (24F)  | Each | 14205.09                | 15037.51                | 15369.84                | 15980.02                |
| 11     | Erection of FDP(Fibre Distribution Panel in 400KV/220KV/132KV SS (48F)  | Each | 25597.71                | 27097.74                | 27696.60                | 28796.15                |
| 12     | Erection of 16/16 EPAX equipment in 400KV/220KV/132KV SS  | Each | 2477.20                 | 2622.36                 | 2680.32                 | 2786.72                 |
| 13     | Erection of RTU panel in 400KV/220KV/132KV SS   | Each | 15236.98                | 16129.86                | 16486.33                | 17140.84                |
| 14     | Erection of protection coupler equipment in 400KV/220KV/132KV SS  | Each | 2477.20                 | 2622.36                 | 2680.32                 | 2786.72                 |
| 15     | Laying of optical fibre approach cable in switch yards of 400KV, 220KV & 132KV (Including hardware)             | KM   | 27629.76                | 29248.87                | 29895.27                | 31082.11                |
| 16     | Laying of HDPE Pipe in trenches in 400KV, 220KV, 132KVSS .  | KM   | 10511.38                | 11127.35                | 11373.27                | 11824.78                |
| 17     | Laying of 12F/24 F OPGW cable on 220KV and 400 KV lines (including Splicing and fixing of hardware accessories) | Km   | 61901.63                | 65529.07                | 66977.26                | 69636.26                |

| Sl.No. | Description   | Unit              | SSR 2015-16 Rates (Rs.) | SSR 2016-17 Rates (Rs.) | SSR 2017-18 Rates (Rs.) | SSR 2018-19 Rates (Rs.) |
|--------|---|-------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| 18     | Stringing of ADSS type optical fibre cable (12F/24F capacity) on 132KV, 220KV line sections in plane areas/ forest areas/ hill areas separately, inclusive of splicing and fixing of hardware accessories |                   |                         |                         |                         |                         |
| i      | For plane area  | KM                | 29136.24                | 30843.63                | 31525.27                | 32776.82                |
| ii     | for agency or tribal area ( 25% extra on Plane area)  | KM                | 36420.30                | 38554.53                | 39406.59                | 40971.03                |
| iii    | for Hill areas( 40% extra on Plane area)  | KM                | 40790.74                | 43181.08                | 44135.38                | 45887.55                |
| iv     | for interior area( 40% extra on Plane area)   | KM                | 40790.74                | 43181.08                | 44135.38                | 45887.55                |
| v      | for municipal corporation areas (upto 12 Kms from municipality)( 25% extra on Plane area)   | KM                | 36420.30                | 38554.53                | 39406.59                | 40971.03                |
| vi     | for municipalites (upto 12 Kms from municipality)( 20% extra on Plane area)   | KM                | 34963.49                | 37012.35                | 37830.32                | 39332.19                |
| 19     | Fixing of tension clamp set of OFC on 132KV & 220KV towers  | per set           | 1996.94                 | 2113.96                 | 2160.68                 | 2246.45                 |
| 20     | Fixing of suspension clamp set of OFC on 132KV, 220KV towers  | per set           | 1644.67                 | 1741.05                 | 1779.52                 | 1850.17                 |
| 21     | Fixing of tension clamp set of OPGW on 400KV lines  | per set           | 2416.03                 | 2557.61                 | 2614.14                 | 2717.92                 |
| 22     | Fixing suspension clamp set of OPGW on 400KV lines  | per set           | 2063.77                 | 2184.70                 | 2232.98                 | 2321.63                 |
| 23     | Fixing of splice box on 132KV & 220KV towers  | Each              | 3004.81                 | 3180.89                 | 3251.19                 | 3380.26                 |
| 24     | Fixing of splice box on 400KV towers  | Each              | 3756.01                 | 3976.11                 | 4063.98                 | 4225.32                 |
| 25     | Fixing of vibration dampers on 132KV & 220KV towers   | Per set           | 934.47                  | 989.23                  | 1011.09                 | 1051.23                 |
| 26     | Fixing of vibration dampers on 400KV towers   | Per set           | 1190.46                 | 1260.22                 | 1288.07                 | 1339.21                 |
| 27     | Splicing charges for OFC fibres laid on 132KV, 220KV, 400KV lines in plane Areas/Forest/ Hill Areas/ Municipal limits, separately for each case   |                   |                         |                         |                         |                         |
| i      | For plane area  | Each fibre splice | 474.60                  | 502.41                  | 513.51                  | 533.90                  |
| ii     | for agency or tribal area   | Each fibre splice | 593.25                  | 628.01                  | 641.89                  | 667.37                  |
| iii    | for Hill areas  | Each fibre splice | 663.76                  | 702.65                  | 718.18                  | 746.69                  |
| iv     | for interior area   | Each fibre splice | 663.76                  | 702.65                  | 718.18                  | 746.69                  |
| v      | for municipal corporation areas (upto 12 Kms from municipalities)   | Each fibre splice | 593.25                  | 628.01                  | 641.89                  | 667.37                  |
| vi     | for municipalities (upto 12 Kms from municipalities)  | Each fibre splice | 569.52                  | 602.89                  | 616.22                  | 640.68                  |
| 28     | Splicing charges for OFC fibres laid in Offices at Hyderabad and Rangareddy Districts   | Each fibre splice | 249.19                  | 263.79                  | 269.62                  | 280.33                  |
| 29     | Erection of RCC Joint Chambers.   | No                | 3941.77                 | 4172.76                 | 4264.97                 | 4434.29                 |
| 30     | Blowing(laying )unarmoured UG OFC 24F/48F (DWSM)in the existing HDPE duct in case of underground works  | KM                | 22199.82                | 23500.73                | 24020.09                | 24973.69                |
| 31     | Fixing of ADSS type OFC to the tower members with ties, clamps etc.   |                   |                         |                         |                         |                         |
| i      | for 220kv/132 kv  | Each              | 1639.01                 | 1735.05                 | 1773.40                 | 1843.80                 |

| Sl.No. | Description   | Unit  | SSR 2015-16 Rates (Rs.) | SSR 2016-17 Rates (Rs.) | SSR 2017-18 Rates (Rs.) | SSR 2018-19 Rates (Rs.) |
|--------|---|-------|-------------------------|-------------------------|-------------------------|-------------------------|
| ii     | for 400kv   | Each  | 2048.76                 | 2168.81                 | 2216.75                 | 2304.75                 |
| 32     | Laying of aerial type OFC (12F) on 33KV/11KV HT/LT poles  | KM    | 9652.80                 | 10218.46                | 10444.29                | 10858.92                |
| 33     | Laying of 6 pair telephone cable in the trenches in 132KV, 220KV & 400KV                              | KM    | 7305.04                 | 7733.11                 | 7904.01                 | 8217.80                 |
| 34     | Laying of Cat 5E/6 Cables in Offices.   | KM    | 3746.17                 | 3965.70                 | 4053.34                 | 4214.26                 |
| 35     | Laying of Cat 5E/6 Cables with Conduit pipes along with accessories in Offices.                       | KM    | 11238.52                | 11897.09                | 12160.02                | 12642.77                |
| 36     | Fixing of 6U x 19 inch Rack in Offices for ERP works  | Each  | 312.18                  | 330.47                  | 337.78                  | 351.19                  |
| 37     | Laying of single pair telephone cable in the trenches in 132KV, 220KV & 400KV                         | KM    | 6743.11                 | 7138.26                 | 7296.01                 | 7585.66                 |
| 38     | Laying of 25sq mm battery cable in control room in 132kv, 220KV & 400KV                               | KM    | 15921.23                | 16854.22                | 17226.69                | 17910.59                |
| 39     | Laying of Co-axial cable from switch yard gantry tower to communication room in the existing trench   | KM    | 15284.38                | 16180.05                | 16537.63                | 17194.17                |
| 40     | Laying of 6 pair telephone cable on overhead poles LT & HT  | KM    | 5619.26                 | 5948.55                 | 6080.01                 | 6321.39                 |
| 41     | Laying of single pair telephone cable on overhead poles LT & HT                                       | KM    | 5619.26                 | 5948.55                 | 6080.01                 | 6321.39                 |
| 42     | Laying of RF cables in 132KV, 220KV & 400 KV SS   | KM    | 15284.38                | 16180.05                | 16537.63                | 17194.17                |
| 43     | Digging of 1 X 1 X 1 (Cu.mt) ducts for laying of telephone cable in 132KV, 220KV, 400KV SS            | Cu.mt | 582.20                  | 616.32                  | 629.94                  | 654.95                  |
| 44     | Excavation, refilling & closing of ducts of 1 X 1 X 1 (Cu.mt) in 132 KV, 220KV and 400 KV SS premises | Cu.mt | 1164.41                 | 1232.64                 | 1259.88                 | 1309.90                 |
| 45     | Erection of earth pit as per standards in 132KV, 220KV SS for communication purpose                   | Each  | 12061.43                | 12768.23                | 13050.40                | 13568.50                |
| 46     | Erection of earth pit as per standards in 400 KV SS   | Each  | 12061.43                | 12768.23                | 13050.40                | 13568.50                |
| 47     | Erection of VSAT equipment in 132KV, 220KV, 400 KV SS   | Each  | 5711.03                 | 6045.70                 | 6179.31                 | 6424.63                 |
| 48     | Dismantling of VSAT equipment of 132KV, 220KV, 400 KV SS  | Each  | 2855.52                 | 3022.85                 | 3089.66                 | 3212.31                 |
| 49     | Loading/unloading charges for PLCC equipment in 132KV SS, 220KV/400KV in to vehicle                   |       |                         |                         |                         |                         |
| i      | for single channel PLCC pannel  | Each  | 582.20                  | 616.32                  | 629.94                  | 654.95                  |
| ii     | for Twin channel PLCC pannel  | Each  | 582.20                  | 616.32                  | 629.94                  | 654.95                  |
| 50     | Loading/unloading charges for 48V/35A, 50A, chargers  | Each  | 582.20                  | 616.32                  | 629.94                  | 654.95                  |
| 51     | Loading/unloading charges for 48V/100A chargers   | Each  | 873.31                  | 924.48                  | 944.91                  | 982.43                  |

| Sl.No. | Description  | Unit | SSR 2015-16 Rates (Rs.) | SSR 2016-17 Rates (Rs.) | SSR 2017-18 Rates (Rs.) | SSR 2018-19 Rates (Rs.) |
|--------|--|------|-------------------------|-------------------------|-------------------------|-------------------------|
| 52     | Loading/unloading charges for OLTE/MUX equipment   | Each | 873.31                  | 924.48                  | 944.91                  | 982.43                  |
| 53     | Loading/unloading charges for RTU panels   | Each | 873.31                  | 924.48                  | 944.91                  | 982.43                  |
| 54     | Loading/unloading charges for EPAXs  | Each | 291.10                  | 308.16                  | 314.97                  | 327.48                  |
| 55     | Loading/unloading charges for battery sets 48V/150 AH, 250 AH, 400 AH                            |      |                         |                         |                         |                         |
| i      | for 150 AH   | Each | 582.20                  | 616.32                  | 629.94                  | 654.95                  |
| ii     | for 250 AH   | Each | 582.20                  | 616.32                  | 629.94                  | 654.95                  |
| iii    | for 400AH  | Each | 873.31                  | 924.48                  | 944.91                  | 982.43                  |
| 56     | Loading/unloading charges for LMUs   | Each | 291.10                  | 308.16                  | 314.97                  | 327.48                  |
| 57     | Loading/unloading charges for Wavetrap   |      |                         |                         |                         |                         |
| i      | 132KV wave trap  | Each | 291.10                  | 308.16                  | 314.97                  | 327.48                  |
| ii     | 220KV Wave Trap & 400 KV   | Each | 582.20                  | 616.32                  | 629.94                  | 654.95                  |
| 58     | Dismantling of existing PLCC chargers (35A, 50A, 100A)   |      |                         |                         |                         |                         |
| i      | 35/50A   | Each | 1384.15                 | 1465.26                 | 1497.64                 | 1557.10                 |
| ii     | 100A   | Each | 4027.29                 | 4263.29                 | 4357.50                 | 4530.50                 |
| 59     | Dismantling of existing 48V/165AH, 200AH, 250AH battery sets                                     | Each | 3140.96                 | 3325.02                 | 3398.50                 | 3533.42                 |
| 60     | Dismantling of existing 48V/400 AH battery sets  | Each | 4172.84                 | 4417.37                 | 4514.99                 | 4694.24                 |
| 61     | Dismantling of existing RTU, OLTE/MUX equipment  |      |                         |                         |                         |                         |
| I      | RTU  | Each | 7618.49                 | 8064.93                 | 8243.17                 | 8570.42                 |
| ii     | OLTE/MUX   | Each | 2998.24                 | 3173.93                 | 3244.08                 | 3372.87                 |
| 62     | Dismantling of EPAXs   | Each | 1238.60                 | 1311.18                 | 1340.16                 | 1393.36                 |
| 63     | Dismantling of wave traps on 132 KV/220KV SS/400 KV SS separately                                |      |                         |                         |                         |                         |
| i      | 50% of Erection of 2000A/1 m H Wave Trap(400 kv)   | Each | 2801.71                 | 2965.89                 | 3031.44                 | 3151.79                 |
| ii     | 50 % of Erection of 1250A/0.5 mH Wave Trap(220 kv)   | Each | 2270.48                 | 2403.53                 | 2456.65                 | 2554.18                 |
| iii    | 50% of Erection of 630A/0.2mH Wave Trap (132 KV)   | Each | 1353.57                 | 1432.89                 | 1464.55                 | 1522.70                 |
| 64     | Dismantling of 12F/24F ADSS cable from 132KV, 220KV SS lines                                     | Each | 14568.12                | 15421.81                | 15762.64                | 16388.41                |
| 65     | Dismantling of 12F/24F OPGW cable from 132KV, 220KV SS,400KVSS lines                             | Each | 30950.82                | 32764.53                | 33488.63                | 34818.13                |
| 66     | Dismantling and bringing down of splice boxes on 132KV, 220KV towers                             | Each | 1502.40                 | 1590.44                 | 1625.59                 | 1690.13                 |
| 67     | Dismantling and bringing down of splice boxes on 400KV towers                                    | Each | 1878.00                 | 1988.05                 | 2031.99                 | 2112.66                 |
| 68     | Hiring charges of 5 KVA Diesel Generator per day for attending OFC break down works              | Each | 886.59                  | 938.55                  | 959.29                  | 997.37                  |
| 69     | Hiring charges of 230V AC inverter (2KVA) with battery backup for attending OFC break down works | Each | 886.59                  | 938.55                  | 959.29                  | 997.37                  |

| Sl.No.                          | Description  | Unit    | SSR 2015-16 Rates (Rs.) | SSR 2016-17 Rates (Rs.) | SSR 2017-18 Rates (Rs.) | SSR 2018-19 Rates (Rs.) |
|---------------------------------|--|---------|-------------------------|-------------------------|-------------------------|-------------------------|
| 70                              | Hiring charges of 8X8X10(C.u.ft) closed tent shutter for attending splicing works for attending OFC break down works                               | Each    | 624.36                  | 660.95                  | 675.56                  | 702.38                  |
| 71                              | Dismantling of VHF 30 ft masts with Gay wires etc.   | Each    | 1828.17                 | 1935.30                 | 1978.07                 | 2056.60                 |
| 72                              | Dismantling of 10 ft/20 ft trylon masts  | Each    | 1475.90                 | 1562.39                 | 1596.91                 | 1660.31                 |
| <b>UGOF cabling works rates</b> |  |         |                         |                         |                         |                         |
| <b>UGFO Cabling</b>             |  |         |                         |                         |                         |                         |
|                                 | Survey & documentation   |         |                         |                         |                         |                         |
| 73                              | Survey of route, providing as built drawing, documentation for unarmoured underground optical fibre cable  | Km      | 3701.64                 | 3918.55                 | 4005.15                 | 4164.16                 |
|                                 | Excavation & Backfilling   |         |                         |                         |                         |                         |
| 74                              | All types of soil, road, footpath, including PCC, sand, warning brick/stone, semi-circular RCC split cover etc. for underground fibre optic cable. | Km      | 147947.73               | 156617.47               | 160078.71               | 166433.84               |
| 75                              | Warning Tape (including supply and installation).  | Km      | 22198.50                | 23499.33                | 24018.67                | 24972.21                |
| 76                              | Laying of PLB HDPE pipe O.D. 40mm  | Km      | 10511.38                | 11127.35                | 11373.27                | 11824.78                |
| 77                              | Installation of HDPE pipe by <b>Trenchless digging</b>   |         |                         |                         |                         |                         |
| (a)                             | 0-10 mtrs  | mtr     | 591.27                  | 625.91                  | 639.75                  | 665.14                  |
| (b)                             | > 10 and up to 30 mtrs   | mtr     | 666.02                  | 705.05                  | 720.63                  | 749.24                  |
| (c)                             | More than 30 mtrs  | mtr     | 739.65                  | 782.99                  | 800.30                  | 832.07                  |
| 78                              | Laying of GI pipe 100mm (Nominal bore), Including accessories.   | mtr     | 188.03                  | 199.05                  | 203.44                  | 211.52                  |
| 79                              | Laying of RCC hume pipe (NP3), 100mm Diameter (Inside), Including accessories.   | mtr     | 282.04                  | 298.57                  | 305.17                  | 317.28                  |
| 80                              | Laying of Unarmoured Underground Optical Fibre Cable - 24 Fibers DWSM  | Km      | 22199.64                | 23500.53                | 24019.90                | 24973.49                |
| 81                              | Installation of Joint box in underground (Including splicing & testing) - 24 Fibers  | No.     | 4628.18                 | 4899.39                 | 5007.67                 | 5206.47                 |
| 82                              | Erection of RCC Joint Chambers   | No.     | 3941.77                 | 4172.76                 | 4264.97                 | 4434.29                 |
| 83                              | Installation of PLB HDPE pipe on wall in building premises including routing of OFC through it   | mtr     | 373.79                  | 395.69                  | 404.44                  | 420.49                  |
| 84                              | Reinstatement of excavated area/damages (in road, pavement, footpath etc.)   | Sq.mtrs | 186.89                  | 197.85                  | 202.22                  | 210.25                  |
| 85                              | Main Distribution frame (100 pairs)  | Nos.    | 1850.82                 | 1959.28                 | 2002.58                 | 2082.08                 |
| 86                              | 1.5 Ton Split type AC Units including 4 KVA Stabilizer   | Nos.    | 10080.96                | 10671.71                | 10907.55                | 11340.58                |

Sd/- J.V.RAO  
DIRECTOR(TECHNICAL)

// FORWARD BY ORDER //

*J. Jyothi*

EXECUTIVE ENGINEER-3  
O/o Chief Engineer(Construction)  
APTRANSCO  
Vidyut Soudha, Vijayawada

## LAYING OF 132KV UG CABLE (SINGLE CIRCUIT)

| Item No. | Sl.No. | Description of Material/Work   | UNIT | SSR 2015-16 (Rs.) | SSR 2016-17 (Rs.) | SSR 2017-18 (Rs.) | SSR 2018-19 (Rs.) |
|----------|--------|--|------|-------------------|-------------------|-------------------|-------------------|
|          | 1      | <b>CABLE ROUTE SURVEY</b>  |      |                   |                   |                   |                   |
| UIS 1    | a)     | Conducting reconnoitery and preliminary survey along shortest route with best proposed route and furnishing report for selecting the best proposal for approval including cost and conveyance of all materials, hire charges of equipment, tools and plant, preparation of drawings and reports, labour charges, complete for finished item of work as per the directions of Engineer-in-charge at site as per SSR 2013-14. (a) With GPS equipment (As per clause 4.9 of survey) (b) With total station equipment.   | Mts. | 264.45            | 279.95            | 286.14            | 297.50            |
| UIS 2    | b)     | Conducting Detailed Survey of cable route including evaluation of thermal resistivity of the soil along the cable route, excavation of trial pits as per field requirements, preparation of cable route profile, drawings for cable laying, final route alignment, marking lines & grades, and preparing bill of materials/ lengths of the cable for the project incl. preparation of PTCC questionnaire and marking of proposed cable route in topo sheet, tower/SS sketch, Single line diagram etc.(30 copies/sets) .(NOTE: For survey of small lengths of UG Cable, if the length of UG cable is less than 0.5KM, then 0.5KM is considered for survey of small length of UG cable in the preparation of estimate) | Mts. | 793.35            | 839.84            | 858.40            | 892.48            |
|          | 2      | <b>LAYING OF CABLE</b>   |      |                   |                   |                   |                   |
|          | 2.1    | Laying of 132 kv 630 sq. mm. XLPE U/G copper cable (3 Nos. for single Circuit) including road cutting, pulling and laying of cable including excavation in the following soils and back filling, sand filling dewatering, including cost of RCC protective tiles, cost of route markers, warning tapes etc. Across and along CC, BT & earth road, Nala crossings, bridge crossings, providing HDPE (thickness 10 mm)pipes, Bell mouths, end caps after laying cable, labour charges and all incidental items of work for finished item of work. This includes loading, unloading and transportation of all materials to work spot. (flat formation)  |      |                   |                   |                   |                   |
| UIS 3    | a)     | Hard gravel soils, BC soils, red earth, stone and earth mixed with fair size boulders etc  | Rmt  | 7018.50           | 7429.78           | 7593.98           | 7895.46           |
| UIS 4    | b)     | Hard Rock with soils   | Rmt  | 9641.85           | 10206.86          | 10432.43          | 10846.60          |
| UIS 5    | c)     | CC or BT road surface etc.   | Rmt  | 6255.30           | 6621.86           | 6768.20           | 7036.90           |
| UIS 6    | d)     | Hard Rock  | Rmt  | 7213.67           | 7636.39           | 7805.15           | 8115.01           |
| UIS 7    | e)     | CC or BT road with Hard rock   | Rmt  | 13400.21          | 14185.46          | 14498.96          | 15074.57          |
| UIS 8    | f)     | Across the road In HDPE pipes (thickness 10mm) to cross CC or BT road and other service lines including cost of concrete cost of HDPE pipes of 250 mm dia etc. complete  | Rmt  | 8795.61           | 9311.03           | 9516.80           | 9894.62           |

| Item No. | Sl.No.     | Description of Material/Work   | UNIT | SSR 2015-16 (Rs.) | SSR 2016-17 (Rs.) | SSR 2017-18 (Rs.) | SSR 2018-19 (Rs.) |
|----------|------------|--|------|-------------------|-------------------|-------------------|-------------------|
| UIS 9    | g)         | Across the road In HDPE pipes (thickness 10mm) to cross CC or BT road with hard rock and other service lines including cost of concrete cost of HDPE pipes of 250 mm dia etc. complete | Rmt  | 20707.49          | 21920.95          | 22405.40          | 23294.89          |
| UIS 10   | h)         | Cable laying in built up trenches, cable trays and supports etc. complete including cost of trays and support etc, complete.   | Rmt  | 8795.61           | 9311.03           | 9516.80           | 9894.62           |
| UIS 11   | i)         | Cable laying across the culverts and over bridges etc., complete in PVC pipes of 250 mm dia in complete  | Rmt  | 8795.61           | 9311.03           | 9516.80           | 9894.62           |
| UIS 12   | j)         | Cable laying by clamping on special type tower including earthing cable from termination to Link box including cost of Aluminum clamps   | Rmt  | 8462.40           | 8958.30           | 9156.28           | 9519.78           |
| UIS 13   | k)         | Cable laying while clamping bare on the walls , ceiling and structures including cost of clamps in complete shape  | Rmt  | 3173.40           | 3359.36           | 3433.60           | 3569.91           |
| UIS 14   | l)         | Cable laying across the railway tracks   | Rmt  | 21156.00          | 22395.74          | 22890.69          | 23799.45          |
| UIS 15   | m)         | Cable laying by clamping on Sub-station structures like CPL etc., including earthing cable from termination to Link box including cost of Aluminum clamps.                             | Rmt  | 1586.70           | 1679.68           | 1716.80           | 1784.96           |
|          | <b>2.2</b> | <b>Including excavation and excluding backfilling without cable laying</b>   |      |                   |                   |                   |                   |
| UIS 16   | a)         | Hard Gravel soils, BC Soils, Red Earth, stone & Earth mixed with fair size boulders etc.,  | Rmt  | 8991.30           | 9518.19           | 9728.54           | 10114.76          |
| UIS 17   | b)         | Hard rock with CC or BT Road surfaces etc.   | Rmt  | 3173.40           | 3359.36           | 3433.60           | 3569.91           |
|          | <b>2.3</b> | <b>Excluding excavation and including backfilling</b>  |      |                   |                   |                   |                   |
| UIS 18   | a)         | Hard Gravel soils, BC Soils, Red Earth, stone & Earth mixed with fair size boulders etc.,  | Rmt  | 1322.25           | 1399.73           | 1430.66           | 1487.46           |
| UIS 19   | b)         | Hard rock with CC or BT Road surfaces etc.   | Rmt  | 4231.20           | 4479.15           | 4578.14           | 4759.89           |
| UIS 20   | <b>2.4</b> | Only excavation and back filling of soil without laying of cable   | Rmt  | 1586.70           | 1679.68           | 1716.80           | 1784.96           |
| UIS 21   | <b>2.5</b> | Excavation and backfilling of suitable thermal backfill for maintainings soil thermal resistance value of 120 degrees  | Cum  | 4231.20           | 4479.15           | 4578.14           | 4759.89           |
| UIS 22   | <b>2.6</b> | Laying of cable excluding excavation and backfilling   | Rmt  | 423.12            | 447.91            | 457.81            | 475.99            |
|          | <b>2.7</b> | <b>Laying of cable by Horizontal Directional Drilling (HDD) incl. cost of 250 mm HDPE Pipe</b>   |      |                   |                   |                   |                   |
| UIS 23   | a)         | Soil/Morrem,soft rock (upto 5000 PSI) per each pipe  | Rmt  | 10366.44          | 10973.91          | 11216.43          | 11661.72          |
| UIS 24   | b)         | Soil/Hard rock (5000 PSI upto 9000 PSI) per each pipe  | Rmt  | 16924.80          | 17916.59          | 18312.55          | 19039.56          |
|          | <b>3</b>   | <b>LAYING OF CO-AXIAL CABLE</b>  |      |                   |                   |                   |                   |
| UIS 25   | a)         | 300sq.mm. co-axial copper cable conductor PVC insulated 6.6KV grade across the cable.  | Rmt  | 15.87             | 16.80             | 17.17             | 17.85             |
| UIS 26   | b)         | 300sq.mm.single core copper cable conductor PVC insulated 6.6KV grade across the cable.  | Rmt  | 15.87             | 16.80             | 17.17             | 17.85             |
| UIS 27   | c)         | 300sq.mm. co-axial copper cable conductor PVC insulated 6.6KV grade on pole mounted termination tower including cost of cleats   | Rmt  | 15.87             | 16.80             | 17.17             | 17.85             |
| UIS 28   | d)         | 300sq.mm.single core copper cable conductor PVC insulated 6.6KV grade on pole mounted termination tower including cost of cleats.  | Rmt  | 15.87             | 16.80             | 17.17             | 17.85             |

| Item No. | Sl.No. | Description of Material/Work  | UNIT | SSR 2015-16 (Rs.) | SSR 2016-17 (Rs.) | SSR 2017-18 (Rs.) | SSR 2018-19 (Rs.) |
|----------|--------|---|------|-------------------|-------------------|-------------------|-------------------|
|          | 4      | For pulling optical fiber cable the following items shall be done while excavation of trenches as per specifications  |      |                   |                   |                   |                   |
| UIS 29   | a)     | Supply of HDPE duct pipe of OD/ID 40/33 mm dia and associated material of standard make as per the specification of the contract/tender and laying jointing, bedding of above HDPE duct pipe in the already excavated XLPE cable trench including sealing the section ends as per the specification of the contract/tender.   | RM   | 105.78            | 111.98            | 114.45            | 118.99            |
| UIS 30   | b)     | Supply of RCC joint chambers (1200/760/50 mm) W/L/T with base and top plates as per the specification of the contract/tender and erection of RCC joint chambers for every 1KM in HDPE duct enroot as per the specification of the contract/tender.  | Each | 7404.60           | 7838.51           | 8011.74           | 8329.81           |
|          | 5      | <b>CABLE JOINTING</b>   |      |                   |                   |                   |                   |
|          |        | Jointing of cable excluding cost of pre-moulded straight through joints, Protection box, 3-phase solid bond link box without SVL / 3-phase cross bond link box with SVL, including excavation of pit for single circuit cable, providing cement concrete base and walls etc. including cost of cement, steel etc., labour charges and all incidental items of work for finished item of work including design of pit providing joint bay identification mark including providing necessary T&P for jointing viz., tarpaulin tent, DG Set, Air Conditioner etc., complete wherever necessary for complete item of work. This includes loading, unloading and transportation of all materials to work spot as per drawing and preparation of joint bay. |      |                   |                   |                   |                   |
| UIS 31   | a)     | With excavation of joint bay size (9mX4m) and laying of CC(1:2:4) bed and sand bed and back filling   | Nos. | 317340.00         | 335936.12         | 343360.31         | 356991.71         |
| UIS 32   | b)     | Jointing charges for cross bonding joints/normal joints   | Nos. | 158670.00         | 167968.06         | 171680.15         | 178495.85         |
|          | 6      | <b>TERMINATION CHARGES</b>  |      |                   |                   |                   |                   |
|          |        | Termination of cable excluding cost of out door type cable terminations and single phase link boxes without SVL complete and all incidental item of work finished item of work including providing necessary T&P viz., tarpaulin tent, DG set, air conditioner, scaffolding etc complete wherever necessary for complete item of work.  |      |                   |                   |                   |                   |
| UIS 33   | a)     | 132 KV tower mounted type cable end terminations including erection on tower in all respects  | Each | 370230.00         | 391925.48         | 400587.03         | 416490.34         |
| UIS 34   | b)     | 132 kV Outdoor type cable end terminations with silicon materials complete in all respect.  | Each | 317340.00         | 335936.12         | 343360.31         | 356991.71         |
| UIS 35   | c)     | 132 kV SF6 type cable end terminations complete in all respect.   | Each | 317340.00         | 335936.12         | 343360.31         | 356991.71         |

| Item No. | Sl.No. | Description of Material/Work   | UNIT | SSR 2015-16 (Rs.)              | SSR 2016-17 (Rs.)              | SSR 2017-18 (Rs.)              | SSR 2018-19 (Rs.)              |
|----------|--------|--|------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| UIS 36   | 7a     | Providing earthing of joint bays with copper flat of cross section equivalent to the earthing cable and run all around the joint bay, providing earth electrodes of steel rods coated with copper as per standards and treated with suitable earth enhancing compound to get an effective diameter and welding the copper flat to the electrodes by exothermic weldng. The earthing scheme drawing shall be got approved with all eath resistance calculations considering the fault currents earth leads from link box to earth pit and connecing lug fixtures, fasteners shall be supplied. Length of the earth lead will be as per site condition/ connivance.      | Each | 26445.00                       | 27994.68                       | 28613.36                       | 29749.31                       |
| UIS 37   | 7b     | Excavation of earth pit at CTT Tower, putting cast iron pipe with flange on one end (as per ISS7181/86) of nominal dia 125 mm and 2.75 metres long inside the pit including supply and fixing of RCC Collars 0.75 mtr. dia (OD) 50mm thick and 0.60 mtrs. long inside the pit, backfill the pit in the 25mm size granules of BH coke for full depth of the pit with alternate layers of BH Coke and salt of 300mm thick around the earth pipe of 150mm on all the sides of the pipe including cost and conveyance of BH Coke,salt,clamps,CI pipes and RCC collars, labour charges for all operational and incidental items of work etc., complete.(as per SSR 2013-14) | Each | 11265.57                       | 11925.73                       | 12189.29                       | 12673.20                       |
| UIS 38   | 8a     | Provision for RCC (1:2:4) for any unforeseen requirement whenever necessary at culverts, drains, nalas, bridges.(rate to be taken as per CSSR)   | Cum  | (rate to be taken as per CSSR) | (rate to be taken as per CSSR) | (rate to be taken as per CSSR) | (rate to be taken as per CSSR) |
| UIS 39   | 8b     | Supplying, fitting and placing of HYSD, TMT bar reinforcement (TISCO/SAIL/VSP) in foundtions, columns , beams slabs wherever necessiated.for the work as per the drawings furnished by the field engineer including cutting , bending, cranking, tying grill in position including cost of binding wire scaffolding etc.(rate to be taken as per CSSR)   | MT   | (rate to be taken as per CSSR) | (rate to be taken as per CSSR) | (rate to be taken as per CSSR) | (rate to be taken as per CSSR) |
|          | 9      | <b>CONNECTION OF LINK BOXES</b>  |      |                                |                                |                                |                                |
| UIS 40   | a)     | Erection of single phase link boxes, providing suitable supporting arrangements, sheath bonding cable, connecting earth leads, with all lugs, fixtures, clamps, bolts and nuts etc., complete including excavation, providing concrete box with walls of 75mm thick RCC for inserting link boxes, and refilling, etc. including earthing as per the directions of site engineer.   | Each | 31734.00                       | 33593.61                       | 34336.03                       | 35699.17                       |
| UIS 41   | b)     | Erection of 3 phase link boxes making connections with earth leads with lugs, fixtures, fasteners sheath bonding cable etc., including excavation, providing RCC concrete wall box of 75mm thick for inserting link boxes , and refilling, etc. including earthing as per the directions of site engineer.   | Each | 42312.00                       | 44791.48                       | 45781.37                       | 47598.89                       |

| Item No. | Sl.No. | Description of Material/Work  | UNIT | SSR 2015-16 (Rs.) | SSR 2016-17 (Rs.) | SSR 2017-18 (Rs.) | SSR 2018-19 (Rs.) |
|----------|--------|---|------|-------------------|-------------------|-------------------|-------------------|
| UIS 42   | 10     | Erection of Lightning Arrestors on special type tower including cost of hardware, jumpering with suitable conductor between line conductor and the pole mounted terminations including labour charges and insurance for all incidental and operational items of work. | Each | 5289.00           | 5598.94           | 5722.68           | 5949.87           |
| UIS 43   | 11     | Road cutting charges and charges for way leaves to be paid for various Government and other agencies  | Mts. | 6346.80           | 6718.72           | 6867.20           | 7139.83           |
| UIS 44   | 12     | Site testing and commissioning (including phase sequence test, megger test, continuity test, HV test etc.)  | KM   | 211560.00         | 223957.42         | 228906.88         | 237994.48         |

Sd/- J.V.RAO  
DIRECTOR(TECHNICAL)

// FORWARD BY ORDER //

*J. Jyothee*

EXECUTIVE ENGINEER-3  
O/o Chief Engineer(Construction)  
APTRANSCO  
Vidyut Soudha, Vijayawada

## LAYING OF 132KV UG CABLE (DOUBLE CIRCUIT)

| Item No. | Sl. No.    | Description of Material/Work   | UNIT | SSR 2015-16 (Rs.) | SSR 2016-17 (Rs.) | SSR 2017-18 (Rs.) | SSR 2018-19 (Rs.) |
|----------|------------|--|------|-------------------|-------------------|-------------------|-------------------|
|          | <b>1</b>   | <b>CABLE ROUTE SURVEY</b>  |      |                   |                   |                   |                   |
| UID 1    | a)         | Conducting reconnoitery and preliminary survey along shortest route with best proposed route and furnishing report for selecting the best proposal for approval including cost and conveyance of all materials, hire charges of equipment, tools and plant, preparation of drawings and reports, labour charges, complete for finished item of work as per the directions of Engineer-in-charge at site as per SSR 2013-14. (a) With GPS equipment (As per clause 4.9 of survey) (b) With total station equipment.   | Mts. | 264.45            | 279.95            | 286.14            | 297.50            |
| UID 2    | b)         | Conducting Detailed Survey of cable route including evaluation of thermal resistivity of the soil along the cable route, excavation of trial pits as per field requirements, preparation of cable route profile, drawings for cable laying, final route alignment, marking lines & grades, and preparing bill of materials/ lengths of the cable for the project incl. preparation of PTCC questionnaire and marking of proposed cable route in topo sheet, tower/SS sketch, Single line diagram etc.(30 copies/sets). (NOTE: For survey of small lengths of UG Cable, if the length is less than 0.5KM, then 0.5KM is considered in preparation of estimate). | Mts. | 1057.80           | 1119.79           | 1144.54           | 1189.98           |
|          | <b>2</b>   | <b>LAYING OF CABLE</b>   |      | 0.00              | 0.00              | 0.00              | 0.00              |
|          | <b>2.1</b> | Laying of 132 kv 630 sq. mm. XLPE U/G copper cable (6 Nos. for double Circuit) including road cutting, pulling and laying of cable including excavation in the following soils and back filling, sand filling dewatering, including cost of RCC protective tiles, cost of route markers, warning tapes etc. Across and along CC, BT & earth road, Nala crossings, bridge crossings, providing HDPE (thickness 10 mm) pipes, Bell mouths, end caps after laying cable, labour charges and all incidental items of work for finished item of work. This includes loading, unloading and transportation of all materials to work spot. (flat formation)           |      | 0.00              | 0.00              | 0.00              | 0.00              |
| UID 3    | a)         | Hard gravel soils, BC soils, red earth, stone and earth mixed with fair size boulders etc  | Rmt  | 12693.60          | 13437.44          | 13734.41          | 14279.67          |
| UID 4    | b)         | Hard Rock with soils   | Rmt  | 16924.80          | 17916.59          | 18312.55          | 19039.56          |
| UID 5    | c)         | CC or BT road surface etc.   | Rmt  | 10578.00          | 11197.87          | 11445.34          | 11899.72          |
| UID 6    | d)         | Hard Rock  | Rmt  | 13222.50          | 13997.34          | 14306.68          | 14874.66          |
| UID 7    | e)         | CC or BT road with Hard rock   | Rmt  | 25387.20          | 26874.89          | 27468.83          | 28559.34          |
| UID 8    | f)         | Across the road In HDPE pipes (thickness 10mm) to cross CC or BT road and other service lines including cost of concrete cost of HDPE pipes of 250 mm dia etc. complete  | Rmt  | 15867.00          | 16796.81          | 17168.02          | 17849.59          |
| UID 9    | g)         | Across the road In HDPE pipes (thickness 10mm) to cross CC or BT road with hard rock and other service lines including cost of concrete cost of HDPE pipes of 250 mm dia etc. complete   | Rmt  | 20707.49          | 21920.95          | 22405.40          | 23294.89          |
| UID 10   | h)         | Cable laying in built up trenches, cable trays and supports etc. complete including cost of trays and support etc, complete.   | Rmt  | 15867.00          | 16796.81          | 17168.02          | 17849.59          |
| UID 11   | i)         | Cable laying across the culverts and over bridges etc., complete in PVC pipes of 250 mm dia in complete  | Rmt  | 15867.00          | 16796.81          | 17168.02          | 17849.59          |

| Item No. | Sl. No.    | Description of Material/Work  | UNIT | SSR 2015-16 (Rs.) | SSR 2016-17 (Rs.) | SSR 2017-18 (Rs.) | SSR 2018-19 (Rs.) |
|----------|------------|---|------|-------------------|-------------------|-------------------|-------------------|
| UID 12   | j)         | Cable laying by clamping on special type tower including earthing cable from termination to Link box including cost of Aluminum clamps  | Rmt  | 16924.80          | 17916.59          | 18312.55          | 19039.56          |
| UID 13   | k)         | Cable laying while clamping bare on the walls , ceiling and structures including cost of clamps in complete shape   | Rmt  | 6346.80           | 6718.72           | 6867.20           | 7139.83           |
| UID 14   | l)         | Cable laying across the railway tracks  | Rmt  | 37023.00          | 39192.55          | 40058.71          | 41649.04          |
| UID 15   | m)         | Cable laying by clamping on Sub-station structures like CPL etc., including earthing cable from termination to Link box including cost of Aluminum clamps.  | Rmt  | 3173.40           | 3359.36           | 3433.60           | 3569.91           |
|          | <b>2.2</b> | <b>Including excavation and excluding backfilling without cable laying</b>  |      |                   |                   |                   |                   |
| UID 16   | a)         | Hard Gravel soils, BC Soils, Red Earth, stone & Earth mixed with fair size boulders etc.,   | Rmt  | 17982.60          | 19036.38          | 19457.08          | 20229.53          |
| UID 17   | b)         | Hard rock with CC or BT Road surfaces etc.  | Rmt  | 6346.80           | 6718.72           | 6867.20           | 7139.83           |
|          | <b>2.3</b> | <b>Excluding excavation and including backfilling</b>   |      |                   |                   |                   |                   |
| UID 18   | a)         | Hard Gravel soils, BC Soils, Red Earth, stone & Earth mixed with fair size boulders etc.,   | Rmt  | 2644.50           | 2799.47           | 2861.34           | 2974.94           |
| UID 19   | b)         | Hard rock with CC or BT Road surfaces etc.  | Rmt  | 6346.80           | 6718.72           | 6867.20           | 7139.83           |
| UID 20   | <b>2.4</b> | <b>Only excavation and back filling of soil without laying of cable</b>   | Rmt  | 3173.40           | 3359.36           | 3433.60           | 3569.91           |
| UID 21   | <b>2.5</b> | <b>Excavation and backfilling of suitable thermal backfill for maintainings soil thermal resistance value of 120 degrees</b>  | Cum  | 8462.40           | 8958.30           | 9156.28           | 9519.78           |
| UID 22   | <b>2.6</b> | <b>Laying of cable excluding excavation and backfilling</b>   | Rmt  | 846.24            | 895.83            | 915.63            | 951.98            |
|          | <b>2.7</b> | <b>Laying of cable by Horizontal Directional Drilling (HDD) incl. cost of 250 mm HDPE Pipe</b>  |      |                   |                   |                   |                   |
| UID 23   | a)         | Soil/Morrem,soft rock (upto 5000 PSI) per each pipe   | Rmt  | 10366.44          | 10973.91          | 11216.43          | 11661.72          |
| UID 24   | b)         | Soil/Hard rock (5000 PSI upto 9000 PSI) per each pipe   | Rmt  | 16924.80          | 17916.59          | 18312.55          | 19039.56          |
|          | <b>3</b>   | <b>LAYING OF CO-AXIAL CABLE</b>   |      |                   |                   |                   |                   |
| UID 25   | a)         | 300sq.mm. co-axial copper cable conductor PVC insulated 6.6KV grade across the cable.   | Rmt  | 26.45             | 28.00             | 28.62             | 29.76             |
| UID 26   | b)         | 300sq.mm.single core copper cable conductor PVC insulated 6.6KV grade across the cable.   | Rmt  | 26.45             | 28.00             | 28.62             | 29.76             |
| UID 27   | c)         | 300sq.mm. co-axial copper cable conductor PVC insulated 6.6KV grade on pole mounted termination tower including cost of cleats  | Rmt  | 26.45             | 28.00             | 28.62             | 29.76             |
| UID 28   | d)         | 300sq.mm.single core copper cable conductor PVC insulated 6.6KV grade on pole mounted termination tower including cost of cleats.   | Rmt  | 26.45             | 28.00             | 28.62             | 29.76             |
|          | <b>4</b>   | <b>For pulling optical fiber cable the following items shall be done while excavation of trenches as per specifications</b>   |      |                   |                   |                   |                   |
| UID 29   | a)         | Supply of HDPE duct pipe of OD/ID 40/33 mm dia and associated material of standard make as per the specification of the contract/tender and laying jointing, bedding of above HDPE duct pipe in the already excavated XLPE cable trench including sealing the section ends as per the specification of the contract/tender. | RM   | 105.78            | 111.98            | 114.45            | 118.99            |
| UID 30   | b)         | Supply of RCC joint chambers (1200/760/50 mm) W/L/T with base and top plates as per the specification of the contract/tender and erection of RCC joint chambers for every IKM in HDPE duct enroot as per the specification of the contract/tender.  | Each | 7404.60           | 7838.51           | 8011.74           | 8329.81           |

| Item No. | Sl. No.  | Description of Material/Work   | UNIT | SSR 2015-16 (Rs.) | SSR 2016-17 (Rs.) | SSR 2017-18 (Rs.) | SSR 2018-19 (Rs.) |
|----------|----------|--|------|-------------------|-------------------|-------------------|-------------------|
|          | <b>5</b> | <b>CABLE JOINTING</b>  |      |                   |                   |                   |                   |
|          |          | Jointing of cable excluding cost of pre-moulded straight through joints, Protection box, 3-phase solid bond link box without SVL / 3-phase cross bond link box with SVL, including excavation of pit for double circuit cable, providing cement concrete base and walls etc. including cost of cement, steel etc., labour charges and all incidental items of work for finished item of work including design of pit providing joint bay identification mark including providing necessary T&P for jointing viz., tarpaulin tent, DG Set, Air Conditioner etc., complete wherever necessary for complete item of work. This includes loading, un-loading and transportation of all materials to work spot as per drawing and preparation of joint bay. |      |                   |                   |                   |                   |
| UID 31   | a)       | With excavation of joint bay size (9mX4m) and laying of CC(1:2:4) bed and sand bed and back filling  | Nos. | 476010.00         | 503904.19         | 515040.47         | 535487.58         |
| UID 32   | b)       | Jointing charges for cross bonding joints/normal joints  | Nos. | 158670.00         | 167968.06         | 171680.15         | 178495.85         |
|          | <b>6</b> | <b>TERMINATION CHARGES</b>   |      |                   |                   |                   |                   |
|          |          | Termination of cable excluding cost of out door type cable terminations and single phase link boxes without SVL complete and all incidental item of work finished item of work including providing necessary T&P viz., tarpaulin tent, DG set, air conditioner, scaffolding etc complete wherever necessary for complete item of work.   |      |                   |                   |                   |                   |
| UID 33   | a)       | 132 KV tower mounted type cable end terminations including erection on tower in all respects   | Each | 370230.00         | 391925.48         | 400587.03         | 416490.34         |
| UID 34   | b)       | 132 kV Outdoor type cable end terminations with silicon materials complete in all respect.   | Each | 317340.00         | 335936.12         | 343360.31         | 356991.71         |
| UID 35   | c)       | 132 kV SF6 type cable end terminations complete in all respect.  | Each | 317340.00         | 335936.12         | 343360.31         | 356991.71         |
| UID 36   | 7a       | Providing earthing of joint bays with copper flat of cross section equivalent to the earthing cable and run all around the joint bay, providing earth electrodes of steel rods coated with copper as per standards and treated with suitable earth enhancing compound to get an effective diameter and welding the copper flat to the electrodes by exothermic weldng. The earthing scheme drawing shall be got approved with all eath resistance calculations considering the fault currents earth leads from link box to earth pit and connecing lug fixtures, fasteners shall be supplied. Length of the earth lead will be as per site condition/ connivance.  | Each | 42312.00          | 44791.48          | 45781.37          | 47598.89          |
| UID 37   | 7b       | Excavation of earth pit at CTT Tower, putting cast iron pipe with flange on one end (as per ISS7181/86) of nominal dia 125 mm and 2.75 metres long inside the pit including supply and fixing of RCC Collars 0.75 mtr. dia (OD) 50mm thick and 0.60 mtrs. long inside the pit, backfill the pit in the 25mm size granules of BH coke for full depth of the pit with alternate layers of BH Coke and salt of 300mm thick around the earth pipe of 150mm on all the sides of the pipe including cost and conveyance of BH Coke,salt,clamps,CI pipes and RCC collars, labour charges for all operational and incidental items of work etc., complete.(as per SSR 2013-14)   | Each | 11265.57          | 11925.73          | 12189.29          | 12673.20          |

| Item No. | Sl. No. | Description of Material/Work   | UNIT | SSR 2015-16 (Rs.)              | SSR 2016-17 (Rs.)              | SSR 2017-18 (Rs.)              | SSR 2018-19 (Rs.)              |
|----------|---------|--|------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| UID 38   | 8a      | Provision for RCC (1:2:4) for any unforeseen requirement whenever necessary at culverts, drains, nalas, bridges.(rate to be taken as per CSSR)   | Cum  | (rate to be taken as per CSSR) | (rate to be taken as per CSSR) | (rate to be taken as per CSSR) | (rate to be taken as per CSSR) |
| UID 39   | 8b      | Supplying, fitting and placing of HYSD, TMT bar reinforcement (TISCO/SAIL/VSP) in foundtions, columns , beams slabs wherever necessiated.for the work as per the drawings furnished by the field engineer including cutting , bending, cranking, tying grill in position including cost of binding wire scaffolding etc.(rate to be taken as per CSSR)                           | MT   | (rate to be taken as per CSSR) | (rate to be taken as per CSSR) | (rate to be taken as per CSSR) | (rate to be taken as per CSSR) |
|          | 9       | <b>CONNECTION OF LINK BOXES</b>  |      | 0.00                           | 0.00                           | 0.00                           | 0.00                           |
| UID 40   | a)      | Erection of single phase link boxes, providing suitable supporting arrangements, sheath bonding cable, connecting earth leads, with all lugs, fixtures, clamps, bolts and nuts etc., complete including excavation, providing concrete box with walls of 75mm thick RCC for inserting link boxes, and refilling, etc. including earthing as per the directions of site engineer. | Each | 31734.00                       | 33593.61                       | 34336.03                       | 35699.17                       |
| UID 41   | b)      | Erection of 3 phase link boxes making connections with earth leads with lugs, fixtures, fasteners sheath bonding cable etc., including excavation, providing RCC concrete wall box of 75mm thick for inserting link boxes , and refilling, etc. including earthing as per the directions of site engineer.   | Each | 42312.00                       | 44791.48                       | 45781.37                       | 47598.89                       |
| UID 42   | 10      | Erection of Lightning Arrestors on special type tower including cost of hardware, jumpering with suitable conductor between line conductor and the pole mounted terminations including labour charges and insurance for all incidental and operational items of work.  | Each | 5289.00                        | 5598.94                        | 5722.68                        | 5949.87                        |
| UID 43   | 11      | Road cutting charges and charges for way leaves to be paid for various Government and other agencies   | Mts. | 10578.00                       | 11197.87                       | 11445.34                       | 11899.72                       |
| UID 44   | 12      | Site testing and commissioning (including phase sequence test, megger test, continuity test, HV test etc.)   | KM   | 317340.00                      | 335936.12                      | 343360.31                      | 356991.71                      |

Sd/- J.V.RAO  
DIRECTOR(TECHNICAL)

// FORWARD BY ORDER //

*J. Jyothi*

EXECUTIVE ENGINEER-3  
O/o Chief Engineer(Construction)  
APTRANSCO  
Vidyut Soudha, Vijayawada

## LAYING OF 220 KV UG CABLE (SINGLE CIRCUIT)

| Item No. | Sl. No.    | Description of Material/Work   | UNIT | SSR 2015-16 | SSR 2016-17 | SSR 2017-18 | SSR 2018-19 |
|----------|------------|--|------|-------------|-------------|-------------|-------------|
|          | <b>1</b>   | <b>CABLE ROUTE SURVEY</b>  |      |             |             |             |             |
| U2S 1    | a)         | Conducting reconnoitery and preliminary survey along shortest route with best proposed route and furnishing report for selecting the best proposal for approval including cost and conveyance of all materials, hire charges of equipment, tools and plant, preparation of drawings and reports, labour charges, complete for finished item of work as per the directions of Engineer-in-charge at site as per SSR 2013-14. (a) With GPS equipment (As per clause 4.9 of survey) (b) With total station equipment.   | Mts. | 264.45      | 279.95      | 286.14      | 297.50      |
| U2S 2    | b)         | Conducting Detailed Survey of cable route including evaluation of thermal resistivity of the soil along the cable route, excavation of trial pits as per field requirements, preparation of cable route profile, drawings for cable laying, final route alignment, marking lines & grades, and preparing bill of materials/ lengths of the cable for the project incl. preparation of PTCC questionnaire and marking of proposed cable route in topo sheet, tower/SS sketch, Single line diagram etc.(30 copies/sets) .(NOTE: For survey of small lengths of UG Cable, if the length of UG cable is less than 0.5KM, then 0.5KM is considered for survey of small length of UG cable in the preparation of estimate) | Mts. | 793.35      | 839.84      | 858.40      | 892.48      |
|          | <b>2</b>   | <b>LAYING OF CABLE</b>   |      |             |             |             |             |
|          | <b>2.1</b> | Laying of 220 kv 1000 sq. mm. XLPE U/G copper cable (3 Nos. for Single Circuit) including road cutting, pulling and laying of cable including excavation in the following soils and back filling, sand filling dewatering, including cost of RCC protective tiles, cost of route markers, warning tapes etc. Across and along CC, BT & earth road, Nala crossings, bridge crossings, providing HDPE (thickness 10 mm)pipes, Bell mouths, end caps after laying cable, labour charges and all incidental items of work for finished item of work. This includes loading, unloading and transportation of all materials to work spot. (flat formation)   |      |             |             |             |             |
| U2S 3    | a)         | Hard gravel soils, BC soils, red earth, stone and earth mixed with fair size boulders etc  | Rmt  | 8422.20     | 8915.74     | 9112.78     | 9474.56     |
| U2S 4    | b)         | Hard Rock with soils   | Rmt  | 11570.22    | 12248.23    | 12518.92    | 13015.92    |
| U2S 5    | c)         | CC or BT road surface etc.   | Rmt  | 7506.36     | 7946.23     | 8121.84     | 8444.28     |
| U2S 6    | d)         | Hard Rock  | Rmt  | 8656.40     | 9163.67     | 9366.19     | 9738.03     |
| U2S 7    | e)         | CC or BT road with Hard rock   | Rmt  | 16080.25    | 17022.55    | 17398.75    | 18089.48    |
| U2S 8    | f)         | Across the road In HDPE pipes (thickness 10mm) to cross CC or BT road and other service lines including cost of concrete cost of HDPE pipes of 250 mm dia etc. complete  | Rmt  | 10554.73    | 11173.24    | 11420.17    | 11873.55    |
| U2S 9    | g)         | Cable laying in built up trenches, cable trays and supports etc. complete including cost of trays and support etc. complete.   | Rmt  | 10554.73    | 11173.24    | 11420.17    | 11873.55    |
| U2S 10   | h)         | Cable laying across the culverts and over bridges etc., complete in PVC pipes of 250 mm dia in complete  | Rmt  | 10554.73    | 11173.24    | 11420.17    | 11873.55    |
| U2S 11   | i)         | Cable laying by clamping on special type tower including earthing cable from termination to Link box including cost of aluminum clamps   | Rmt  | 9520.20     | 10078.08    | 10300.81    | 10709.75    |

| Item No. | Sl. No.    | Description of Material/Work   | UNIT | SSR 2015-16 | SSR 2016-17 | SSR 2017-18 | SSR 2018-19 |
|----------|------------|--|------|-------------|-------------|-------------|-------------|
| U2S 12   | j)         | Cable laying by clamping on Sub-station structures like CPL etc., including earthing cable from termination to Link box including cost of aluminum clamps.   | Rmt  | 2115.60     | 2239.57     | 2289.06     | 2379.94     |
| U2S 13   | k)         | Cable laying while clamping bare on the walls , ceiling and structures including cost of clamps in complete shape  | Rmt  | 4231.20     | 4479.15     | 4578.14     | 4759.89     |
| U2S 14   | l)         | Cable laying across the railway tracks   | Rmt  | 26445.00    | 27994.68    | 28613.36    | 29749.31    |
|          | <b>2.2</b> | <b>Including excavation and excluding backfilling without cable laying</b>   |      |             |             |             |             |
| U2S 15   | a)         | Hard rock with CC or BT Road surfaces etc.   | Rmt  | 8991.30     | 9518.19     | 9728.54     | 10114.76    |
| U2S 16   | b)         | Hard Gravel soils, BC Soils, Red Earth, stone & Earth mixed with fair size boulders etc.,  | Rmt  | 3173.40     | 3359.36     | 3433.60     | 3569.91     |
|          | <b>2.3</b> | <b>Excluding excavation and including backfilling</b>  |      |             |             |             |             |
| U2S 17   | a)         | Hard Gravel soils, BC Soils, Red Earth, stone & Earth mixed with fair size boulders etc.,  | Rmt  | 1322.25     | 1399.73     | 1430.66     | 1487.46     |
| U2S 18   | b)         | Hard rock with CC or BT Road surfaces etc.   | Rmt  | 5289.00     | 5598.94     | 5722.68     | 5949.87     |
| U2S 19   | <b>2.4</b> | Only excavation and back filling of soil without laying of cable   | Rmt  | 1586.70     | 1679.68     | 1716.80     | 1784.96     |
| U2S 20   | <b>2.5</b> | Excavation and backfilling of suitable thermal backfill for maintainings soil thermal resistance value of 120 degrees  | Cum  | 4231.20     | 4479.15     | 4578.14     | 4759.89     |
| U2S 21   | <b>2.6</b> | Laying of cable excluding excavation and backfilling   | Rmt  | 528.90      | 559.89      | 572.26      | 594.98      |
|          | <b>2.7</b> | <b>Laying of cable by Horizontal Directional Drilling (HDD) incl. cost of 250 mm HDPE Pipe</b>   |      |             |             |             |             |
| U2S 22   | a)         | Soil/Morrem,soft rock (upto 5000 PSI) per pipe   | Rmt  | 10366.44    | 10973.91    | 11216.43    | 11661.72    |
| U2S 23   | b)         | Soil/Hard rock (5000 PSI upto 9000 PSI) per pipe   | Rmt  | 16924.80    | 17916.59    | 18312.55    | 19039.56    |
|          | <b>3</b>   | <b>LAYING OF CO-AXIAL CABLE</b>  |      |             |             |             |             |
| U2S 24   | a)         | 240sq.mm. co-axial copper cable conductor PVC insulated 6.6KV grade across the cable.  | Rmt  | 15.87       | 16.80       | 17.17       | 17.85       |
| U2S 25   | b)         | 240sq.mm.single core copper cable conductor PVC insulated 6.6KV grade across the cable.  | Rmt  | 15.87       | 16.80       | 17.17       | 17.85       |
| U2S 26   | c)         | 240sq.mm. co-axial copper cable conductor PVC insulated 6.6KV grade on pole mounted termination tower including cost of cleats   | Rmt  | 15.87       | 16.80       | 17.17       | 17.85       |
| U2S 27   | d)         | 240sq.mm.single core copper cable conductor PVC insulated 6.6KV grade on pole mounted termination tower including cost of cleats.  | Rmt  | 15.87       | 16.80       | 17.17       | 17.85       |
|          | <b>4</b>   | For pulling optical fiber cable the following items shall be done while excavation of trenches as per specifications   |      |             |             |             |             |
| U2S 28   | a)         | Supply of HDPE duct pipe of OD/ID 40/33 mm dia and associated material of standard make as per the specification of the contract/tender and laying jointing, bedding of above HDPE duct pipe in the already excavated XLPE cable trench including sealing the section ends as per the specification of the contract/tender (Per Pipe). | RM   | 105.78      | 111.98      | 114.45      | 118.99      |
| U2S 29   | b)         | Supply of RCC joint chambers (1200/760/50 mm) W/L/T with base and top plates as per the specification of the contract/tender and erection of RCC joint chambers for every 1KM in HDPE duct enroot as per the specification of the contract/tender.   | Each | 7404.60     | 7838.51     | 8011.74     | 8329.81     |
|          | <b>5</b>   | <b>CABLE JOINTING</b>  |      |             |             |             |             |

| Item No. | Sl. No.  | Description of Material/Work  | UNIT | SSR 2015-16 | SSR 2016-17 | SSR 2017-18 | SSR 2018-19 |
|----------|----------|---|------|-------------|-------------|-------------|-------------|
|          |          | Jointing of cable excluding cost of pre-moulded straight through joints, Protection box, 3-phase solid bond link box without SVL / 3-phase cross bond link box with SVL, including excavation of pit for single circuit cable, providing cement concrete base and walls etc. including cost of cement, steel etc., labour charges and all incidental items of work for finished item of work including design of pit providing joint bay identification mark including providing necessary T&P for jointing viz., tarpaulin tent, DG Set, Air Conditioner etc., complete wherever necessary for complete item of work. This includes loading, unloading and transportation of all materials to work spot as per drawing and preparation of joint bay. |      |             |             |             |             |
| U2S 30   | a)       | With excavation of joint bay size (13mX4m) and laying of CC(1:2:4) bed and sand bed and back filling  | Each | 370230.00   | 391925.48   | 400587.03   | 416490.34   |
| U2S 31   | b)       | Jointing charges for cross bonding joints for each phase  | Each | 264450.00   | 279946.77   | 286133.59   | 297493.09   |
|          | <b>6</b> | <b>TERMINATION CHARGES</b>  |      |             |             |             |             |
|          |          | Termination of cable excluding cost of out door type cable terminations and single phase link boxes without SVL complete and all incidental item of work finished item of work including providing necessary T&P viz., tarpaulin tent, DG set, air conditioner, scaffolding etc complete wherever necessary for complete item of work.  |      |             |             |             |             |
| U2S 32   | a)       | 220 KV tower mounted type cable end terminations including erection on tower in all respects per phase including scaffolding charges.   | Each | 444276.00   | 470310.57   | 480704.43   | 499788.40   |
| U2S 33   | b)       | 220 kV Outdoor type cable end terminations with silicon materials complete in all respect.  | Each | 370230.00   | 391925.48   | 400587.03   | 416490.34   |
| U2S 34   | c)       | 220 kV SF6 type cable end terminations complete in all respect.   | Each | 370230.00   | 391925.48   | 400587.03   | 416490.34   |
| U2S 35   | 7a       | Providing earthing of joint bays with copper flat of cross section equivalent to the earthing cable and run all around the joint bay, providing earth electrodes of steel rods coated with copper as per standards and treated with suitable earth enhancing compound to get an effective diameter and welding the copper flat to the electrodes by exothermic weldng. The earthing scheme drawing shall be got approved with all eath resistance calculations considering the fault currents earth leads from link box to earth pit and connecing lug fixtures, fasteners shall be supplied. Length of the earth lead will be as per site condition/ connivance.   | Each | 26445.00    | 27994.68    | 28613.36    | 29749.31    |
| U2S 36   | 7b       | Excavation of earth pit at CTT Tower, putting cast iron pipe with flange on one end (as per ISS7181/86) of nominal dia 125 mm and 2.75 metres long inside the pit including supply and fixing of RCC Collars 0.75 mtr. dia (OD) 50mm thick and 0.60 mtrs. long inside the pit, backfill the pit in the 25mm size granules of BH coke for full depth of the pit with alternate layers of BH Coke and salt of 300mm thick around the earth pipe of 150mm on all the sides of the pipe including cost and conveyance of BH Coke,salt,clamps,CI pipes and RCC collars, labour charges for all operational and incidental items of work etc., complete.(as per SSR 2013-14)  | Each | 11265.57    | 11925.73    | 12189.29    | 12673.20    |

| Item No. | Sl. No. | Description of Material/Work   | UNIT | SSR 2015-16                    | SSR 2016-17                    | SSR 2017-18                    | SSR 2018-19                    |
|----------|---------|--|------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| U2S 37   | 8a      | Provision for RCC (1:2:4) for any unforeseen requirement whenever necessary at culverts, drains, nalas, bridges.(rate to be taken as per CSSR)   | Cum  | (rate to be taken as per CSSR) | (rate to be taken as per CSSR) | (rate to be taken as per CSSR) | (rate to be taken as per CSSR) |
| U2S 38   | 8b      | Supplying, fitting and placing of HYSD, TMT bar reinforcement (TISCO/SAIL/VSP) in foundtions, columns , beams slabs wherever necessiated.for the work as per the drawings furnished by the field engineer including cutting , bending, cranking, tying grill in position including cost of binding wire scaffolding etc.(rate to be taken as per CSSR)   | MT   | (rate to be taken as per CSSR) | (rate to be taken as per CSSR) | (rate to be taken as per CSSR) | (rate to be taken as per CSSR) |
|          | 9       | <b>CONNECTION OF LINK BOXES</b>  |      |                                |                                |                                |                                |
| U2S 39   | a)      | Erection of single phase link boxes, providing suitable supporting arrangements, sheath bonding cable, connecting earth leads, with all lugs, fixtures, clamps, bolts and nuts etc., complete including excavation, providing concrete box with walls of 75mm thick RCC for inserting link boxes, and refilling, etc. including earthing as per the directions of site engineer including connecting to the earthing cable from link box to earthpit | Each | 31734.00                       | 33593.61                       | 34336.03                       | 35699.17                       |
| U2S 40   | b)      | Erection of 3 phase link boxes making connections with earth leads with lugs, fixtures, fasteners sheath bonding cable etc., including excavation, providing RCC concrete wall box of 75mm thick for inserting link boxes , and refilling, etc. including earthing as per the directions of site engineer including connecting to the earthing cable from link box to earthpit.  | Each | 42312.00                       | 44791.48                       | 45781.37                       | 47598.89                       |
| U2S 41   | 10      | Erection of Lightning Arrestors on special type tower including cost of hardware, jumpering with suitable conductor between line conductor and the pole mounted terminations including labour charges and insurance for all incidental and operational items of work.  | Each | 5289.00                        | 5598.94                        | 5722.68                        | 5949.87                        |
| U2S 42   | 11      | Road cutting charges and charges for way leaves to be paid for various Government and other agencies. The cost is for estimate purpose however, the amount will be reimbursed as per actuals against documentary evidence.   | Mts. | 6346.80                        | 6718.72                        | 6867.20                        | 7139.83                        |
| U2S 43   | 12      | Site testing and commissioning (including phase sequence test, megger test, continuity test, HV test etc.)   | KM   | 211560.00                      | 223957.42                      | 228906.88                      | 237994.48                      |

Sd/- J.V.RAO  
DIRECTOR(TECHNICAL)

// FORWARD BY ORDER //

*J. Jyothi*

EXECUTIVE ENGINEER-3  
O/o Chief Engineer(Construction)  
APTRANSCO  
Vidyut Soudha, Vijayawada

## LAYING OF 220 KV UG CABLE (DOUBLE CIRCUIT)

| Item No. | Sl.No.     | Description of Material/Work  | Unit | SSR 2015-16 (Rs.) | SSR 2016-17 (Rs.) | SSR 2017-18 (Rs.) | SSR 2018-19 (Rs.) |
|----------|------------|---|------|-------------------|-------------------|-------------------|-------------------|
|          | <b>1</b>   | <b>CABLE ROUTE SURVEY</b>   |      |                   |                   |                   |                   |
| U2D 1    | a)         | Conducting reconnoitery and preliminary survey along shortest route with best proposed route and furnishing report for selecting the best proposal for approval including cost and conveyance of all materials, hire charges of equipment, tools and plant, preparation of drawings and reports, labour charges, complete for finished item of work as per the directions of Engineer-in-charge at site as per SSR 2013-14. (a) With GPS equipment (As per clause 4.9 of survey) (b) With total station equipment.  | Mts. | 264.45            | 279.95            | 286.14            | 297.50            |
| U2D 2    | b)         | Conducting Detailed Survey of cable route including evaluation of thermal resistivity of the soil along the cable route, excavation of trial pits as per field requirements, preparation of cable route profile, drawings for cable laying, final route alignment, marking lines & grades, and preparing bill of materials/ lengths of the cable for the project incl. preparation of PTCC questionnaire and marking of proposed cable route in topo sheet, tower/SS sketch, Single line diagram etc.(30 copies/sets) .(NOTE For survey of small lengths of UG Cable, if the length of UG cable is less than 0.5KM, then 0.5KM is considered for survey of small length of UG cable in the preparation of estimate) | Mts. | 1057.80           | 1119.79           | 1144.54           | 1189.98           |
|          | <b>2</b>   | <b>LAYING OF CABLE</b>  |      | 0.00              | 0.00              | 0.00              | 0.00              |
|          | <b>2.1</b> | Laying of 220 kv 1000 sq. mm. XLPE U/G copper cable (6 Nos. for double Circuit) including road cutting, pulling and laying of cable including excavation in the following soils and back filling, sand filling dewatering, including cost of RCC protective tiles, cost of route markers, warning tapes etc. Across and along CC, BT & earth road, Nala crossings, bridge crossings, providing HDPE (thickness 10 mm)pipes, Bell mouths, end caps after laying cable, labour charges and all incidental items of work for finished item of work. This includes loading, unloading and transportation of all materials to work spot. (flat formation)  |      | 0.00              | 0.00              | 0.00              | 0.00              |
| U2D 3    | a)         | Hard gravel soils, BC soils, red earth, stone and earth mixed with fair size boulders etc   | Rmt  | 14037.01          | 14859.58          | 15187.98          | 15790.94          |
|          | b)         | Hard Rock with soils  | Rmt  | 19283.69          | 20413.71          | 20864.85          | 21693.18          |
| U2D 5    | c)         | CC or BT road surface etc.  | Rmt  | 12510.64          | 13243.76          | 13536.45          | 14073.85          |
| U2D 6    | d)         | Hard Rock   | Rmt  | 14427.33          | 15272.77          | 15610.30          | 16230.03          |
| U2D 7    | e)         | CC or BT road with Hard rock  | Rmt  | 26800.42          | 28370.92          | 28997.92          | 30149.14          |
| U2D 8    | f)         | Across the road In HDPE pipes (thickness 10mm) to cross CC or BT road and other service lines including cost of concrete cost of HDPE pipes of 250 mm dia etc. complete   | Rmt  | 17591.21          | 18622.05          | 19033.60          | 19789.23          |
| U2D 9    | g)         | Cable laying in built up trenches, cable trays and supports etc. complete including cost of trays and support etc, complete.  | Rmt  | 17591.21          | 18622.05          | 19033.60          | 19789.23          |
| U2D 10   | h)         | Cable laying across the culverts and over bridges etc., complete in PVC pipes of 250 mm dia in complete   | Rmt  | 17591.21          | 18622.05          | 19033.60          | 19789.23          |
| U2D 11   | i)         | Cable laying by clamping on special type tower including earthing cable from termination to Link box including cost of aluminum clamps  | Rmt  | 19040.40          | 20156.17          | 20601.62          | 21419.50          |

| Item No. | Sl.No.     | Description of Material/Work   | Unit | SSR 2015-16 (Rs.) | SSR 2016-17 (Rs.) | SSR 2017-18 (Rs.) | SSR 2018-19 (Rs.) |
|----------|------------|--|------|-------------------|-------------------|-------------------|-------------------|
| U2D 12   | j)         | Cable laying by clamping on Sub-station structures like CPL etc., including earthing cable from termination to Link box including cost of aluminum clamps.   | Rmt  | 4231.20           | 4479.15           | 4578.14           | 4759.89           |
| U2D 13   | k)         | Cable laying while clamping bare on the walls , ceiling and structures including cost of clamps in complete shape  | Rmt  | 8462.40           | 8958.30           | 9156.28           | 9519.78           |
| U2D 14   | l)         | Cable laying across the railway tracks   | Rmt  | 42312.00          | 44791.48          | 45781.37          | 47598.89          |
|          | <b>2.2</b> | <b>Including excavation and excluding backfilling without cable laying</b>   |      |                   |                   |                   |                   |
| U2D 15   | a)         | Hard rock with CC or BT Road surfaces etc.   | Rmt  | 17982.60          | 19036.38          | 19457.08          | 20229.53          |
| U2D 16   | b)         | Hard Gravel soils, BC Soils, Red Earth, stone & Earth mixed with fair size boulders etc.,  | Rmt  | 6346.80           | 6718.72           | 6867.20           | 7139.83           |
|          | <b>2.3</b> | <b>Excluding excavation and including backfilling</b>  |      |                   |                   |                   |                   |
| U2D 17   | a)         | Hard Gravel soils, BC Soils, Red Earth, stone & Earth mixed with fair size boulders etc.,  | Rmt  | 2644.50           | 2799.47           | 2861.34           | 2974.94           |
| U2D 18   | b)         | Hard rock with CC or BT Road surfaces etc.   | Rmt  | 7404.60           | 7838.51           | 8011.74           | 8329.81           |
| U2D 19   | <b>2.4</b> | Only excavation and back filling of soil without laying of cable   | Rmt  | 3173.40           | 3359.36           | 3433.60           | 3569.91           |
| U2D 20   | <b>2.5</b> | Excavation and backfilling of suitable thermal backfill for maintainings soil thermal resistance value of 120 degrees  | Cum  | 8462.40           | 8958.30           | 9156.28           | 9519.78           |
| U2D 21   | <b>2.6</b> | Laying of cable excluding excavation and backfilling   | Rmt  | 1057.80           | 1119.79           | 1144.54           | 1189.98           |
|          | <b>2.7</b> | <b>Laying of cable by Horizontal Directional Drilling (HDD) incl. cost of 250 mm HDPE Pipe</b>   |      |                   |                   |                   |                   |
| U2D 22   | a)         | Soil/Morrem,soft rock (upto 5000 PSI) per pipe   | Rmt  | 10366.44          | 10973.91          | 11216.43          | 11661.72          |
| U2D 23   | b)         | Soil/Hard rock (5000 PSI upto 9000 PSI) per pipe   | Rmt  | 16924.80          | 17916.59          | 18312.55          | 19039.56          |
|          | <b>3</b>   | <b>LAYING OF CO-AXIAL CABLE</b>  |      |                   |                   |                   |                   |
| U2D 24   | a)         | 240sq.mm. co-axial copper cable conductor PVC insulated 6.6KV grade across the cable.  | Rmt  | 26.45             | 28.00             | 28.62             | 29.76             |
| U2D 25   | b)         | 240sq.mm.single core copper cable conductor PVC insulated 6.6KV grade across the cable.  | Rmt  | 26.45             | 28.00             | 28.62             | 29.76             |
| U2D 26   | c)         | 240sq.mm. co-axial copper cable conductor PVC insulated 6.6KV grade on pole mounted termination tower including cost of cleats   | Rmt  | 26.45             | 28.00             | 28.62             | 29.76             |
| U2D 27   | d)         | 240sq.mm.single core copper cable conductor PVC insulated 6.6KV grade on pole mounted termination tower including cost of cleats.  | Rmt  | 26.45             | 28.00             | 28.62             | 29.76             |
|          | <b>4</b>   | For pulling optical fiber cable the following items shall be done while excavation of trenches as per specifications   |      |                   |                   |                   |                   |
| U2D 28   | a)         | Supply of HDPE duct pipe of OD/ID 40/33 mm dia and associated material of standard make as per the specification of the contract/tender and laying jointing, bedding of above HDPE duct pipe in the already excavated XLPE cable trench including sealing the section ends as per the specification of the contract/tender (Per Pipe). | RM   | 105.78            | 111.98            | 114.45            | 118.99            |
| U2D 29   | b)         | Supply of RCC joint chambers (1200/760/50 mm) W/L/T with base and top plates as per the specification of the contract/tender and erection of RCC joint chambers for every 1KM in HDPE duct enroot as per the specification of the contract/tender.   | Each | 7404.60           | 7838.51           | 8011.74           | 8329.81           |

| Item No. | Sl.No.   | Description of Material/Work   | Unit | SSR 2015-16 (Rs.) | SSR 2016-17 (Rs.) | SSR 2017-18 (Rs.) | SSR 2018-19 (Rs.) |
|----------|----------|--|------|-------------------|-------------------|-------------------|-------------------|
|          | <b>5</b> | <b>CABLE JOINTING</b>  |      |                   |                   |                   |                   |
|          |          | Jointing of cable excluding cost of pre-moulded straight through joints, Protection box, 3-phase solid bond link box without SVL / 3-phase cross bond link box with SVL, including excavation of pit for double circuit cable, providing cement concrete base and walls etc. including cost of cement, steel etc., labour charges and all incidental items of work for finished item of work including design of pit providing joint bay identification mark including providing necessary T&P for jointing viz., tarpaulin tent, DG Set, Air Conditioner etc., complete wherever necessary for complete item of work. This includes loading, un-loading and transportation of all materials to work spot as per drawing and preparation of joint bay. |      |                   |                   |                   |                   |
| U2D 30   | a)       | With excavation of joint bay size (13mX4m) and laying of CC(1:2:4) bed and sand bed and back filling   | Nos. | 539478.00         | 571091.41         | 583712.53         | 606885.92         |
| U2D 31   | b)       | Jointing charges for cross bonding joints for each phase   | Nos. | 264450.00         | 279946.77         | 286133.59         | 297493.09         |
|          | <b>6</b> | <b>TERMINATION CHARGES</b>   |      |                   |                   |                   |                   |
|          |          | Termination of cable excluding cost of out door type cable terminations and single phase link boxes without SVL complete and all incidental item of work finished item of work including providing necessary T&P viz., tarpaulin tent, DG set, air conditioner, scaffolding etc complete wherever necessary for complete item of work.   |      |                   |                   |                   |                   |
| U2D 32   | a)       | 220 KV tower mounted type cable end terminations including erection on tower in all respects per phase including scaffolding charges.  | Each | 444276.00         | 470310.57         | 480704.43         | 499788.40         |
| U2D 33   | b)       | 220 kV Outdoor type cable end terminations with silicon materials complete in all respect.   | Each | 370230.00         | 391925.48         | 400587.03         | 416490.34         |
| U2D 34   | c)       | 220 kV SF6 type cable end terminations complete in all respect.  | Each | 370230.00         | 391925.48         | 400587.03         | 416490.34         |
| U2D 35   | 7a       | Providing earthing of joint bays with copper flat of cross section equivalent to the earthing cable and run all around the joint bay, providing earth electrodes of steel rods coated with copper as per standards and treated with suitable earth enhancing compound to get an effective diameter and welding the copper flat to the electrodes by exothermic weldng. The earthing scheme drawing shall be got approved with all eath resistance calculations considering the fault currents earth leads from link box to earth pit and connecing lug fixtures, fasteners shall be supplied. Length of the earth lead will be as per site condition/ connivance.  | Nos. | 42312.00          | 44791.48          | 45781.37          | 47598.89          |
| U2D 36   | 7b       | Excavation of earth pit at CTT Tower, putting cast iron pipe with flange on one end (as per ISS7181/86) of nominal dia 125 mm and 2.75 metres long inside the pit including supply and fixing of RCC Collars 0.75 mtr. dia (OD) 50mm thick and 0.60 mtrs. long inside the pit, backfill the pit in the 25mm size granules of BH coke for full depth of the pit with alternate layers of BH Coke and salt of 300mm thick around the earth pipe of 150mm on all the sides of the pipe including cost and conveyance of BH Coke,salt,clamps,CI pipes and RCC collars, labour charges for all operational and incidental items of work etc., complete.(as per SSR 2013-14)   | Nos. | 11265.57          | 11925.73          | 12189.29          | 12673.20          |

| Item No. | Sl.No. | Description of Material/Work   | Unit | SSR 2015-16 (Rs.)              | SSR 2016-17 (Rs.)              | SSR 2017-18 (Rs.)              | SSR 2018-19 (Rs.)              |
|----------|--------|--|------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| U2D 37   | 8a     | Provision for RCC (1:2:4) for any unforeseen requirement whenever necessary at culverts, drains, nalas, bridges.(rate to be taken as per CSSR)   | Cum  | (rate to be taken as per CSSR) | (rate to be taken as per CSSR) | (rate to be taken as per CSSR) | (rate to be taken as per CSSR) |
| U2D 38   | 8b     | Supplying, fitting and placing of HYSD, TMT bar reinforcement (TISCO/SAIL/VSP) in foundtions, columns , beams slabs wherever necessiated.for the work as per the drawings furnished by the field engineer including cutting , bending, cranking, tying grill in position including cost of binding wire scaffolding etc.(rate to be taken as per CSSR)   | MT   | (rate to be taken as per CSSR) | (rate to be taken as per CSSR) | (rate to be taken as per CSSR) | (rate to be taken as per CSSR) |
|          | 9      | <b>CONNECTION OF LINK BOXES</b>  |      |                                |                                |                                |                                |
| U2D 39   | a)     | Erection of single phase link boxes, providing suitable supporting arrangements, sheath bonding cable, connecting earth leads, with all lugs, fixtures, clamps, bolts and nuts etc., complete including excavation, providing concrete box with walls of 75mm thick RCC for inserting link boxes, and refilling, etc. including earthing as per the directions of site engineer including connecting to the earthing cable from link box to earthpit | Each | 31734.00                       | 33593.61                       | 34336.03                       | 35699.17                       |
| U2D 40   | b)     | Erection of 3 phase link boxes making connections with earth leads with lugs, fixtures, fasteners sheath bonding cable etc., including excavation, providing RCC concrete wall box of 75mm thick for inserting link boxes , and refilling, etc. including earthing as per the directions of site engineer including connecting to the earthing cable from link box to earthpit.  | Each | 42312.00                       | 44791.48                       | 45781.37                       | 47598.89                       |
| U2D 41   | 10     | Erection of Lightning Arrestors on special type tower including cost of hardware, jumpering with suitable conductor between line conductor and the pole mounted terminations including labour charges and insurance for all incidental and operational items of work.  | Nos. | 5289.00                        | 5598.94                        | 5722.68                        | 5949.87                        |
| U2D 42   | 11     | Road cutting charges and charges for way leaves to be paid for various Government and other agencies. The cost is for estimate purpose however, the amount will be reimbursed as per actuals against documentary evidence.   | Mts. | 10578.00                       | 11197.87                       | 11445.34                       | 11899.72                       |
| U2D 43   | 12     | Site testing and commissioning (including phase sequence test, megger test, continuity test, HV test etc.)   | KM   | 317340.00                      | 335936.12                      | 343360.31                      | 356991.71                      |

Sd/- J.V.RAO  
DIRECTOR(TECHNICAL)

// FORWARD BY ORDER //

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