

Orissa Power Transmission Corporation Ltd. Bhubaneshwar

**Construction of Sub-Station at Karodagadia along with associated
Transmission Line for OPTCL against
Bid Document No. : NESCL/OPTCL/CS-OS-619-01**

Clarification on Bid Document based on queries raised by different bidders:

Sl No.	Document Volume	Ref Cl No.	Description of query	Reply from OPTCL
1	Vol-IIA	Scope 2.1.1,point 31	Colony lighting	Colony light is in bidders scope. Lay out is also in bidders scope. Colony area will be located at a convenient location of the sub-station, which shall be connected through a branch road to the Main road. In this package it is proposed to have two Flats(one for "D" type & one for "E" type).Refer the BPS -SS-2C-Civil Works regarding Quarter.
2	Vol-IIA	General	HPSV lamp	The lamps to be used in the switch yard, colony area, street light, Control room building area etc shall be provided with LED type.
3	Vol-IIA	General	Scope of earthing, lighting etc in colony area	Colony light, earthing etc is in bidders scope
4	Vol-IIA	Scope 2.1.2 , point 12	DG set room	Not in the scope of bidder
5	Vol-IIA	Scope 2.1.2 , point 19	Approach road	Approach road is in the scope of bidder. Bidder has to visit to ascertain the length prior to quote. The width of the road shall be 7 mtrs.
6	Vol-IIA	General	Plot plan of sub-station	Bidder to visit the site before quoting. Approximate area of the area of the sub-station is 15 acres.
7	Vol-IIA	General	Scope of fire protection	Please refer the Scope of work-Vol-IIA, Annexure-I & BPS - 2A-SS- Cl 38

8	Vol-IIA	General	Typical switch yard layout of 220/132/33 KV	SLD & Structural layout have been provided in the Tender.
9	Vol-IIA	General	Typical control room layout	Ground floor and first floor plinth area of the control room building has been indicated in the BPS-2C-SS-Civil-B-CI No3
10	Vol-IIA	2.1.128	Exhaust fan	Exhaust fans to be used wherever required. Proper air ventilation in electrical sub-station control room is mandatory.
11	General	---	Cutting/filling and FGL regarding	For Sub-station leveling pl Refer BPS-2C-SS-Civil-B-CI NO. 11. FGL shall be decided by the Bidder/ successful contractor.
12	Township Building	---	Finishing schedule and layouts of the township	To be prepared by the Bidder. Refer BPS-2C-SS-Civil-B-CI NO. 15
13	Vol-IB-2C-	15.1	Furnish the No of flats for "D" type.	One flat. (One no. "D" Type quarter). The required plinth area is 100 Sq mtrs.
14	Vol-IB-2C-	33.3 (Electrical Works)	Pipe type structures for equipment	Acceptable to OPTCL, Approval is required before using in the sub-station.
15	Vol-IB-2C-	4.3	Length of the approach road	Approach road is in the scope of bidder. Bidder has to visit to ascertain the length prior to quote. The width of the road shall be 7 mtrs.
16	E-7/Switchyard structures	2	Galvanization thickness	As per IS provided for structural materials to be used in EHV sub-station.
17	General	---	AC system	AC to be considered for control Room, PLC C Room, Conf Room, testing lab & office
18	General	---	Sub-station layout along with control room building location.	SLD & Structural layout have been provided in the Tender. Bidder has to visit site before quoting to ascertain the lay out and location of control room building. Generally the control room building is located near to the Switchyard.
19	General	---	Rout map of transmission line	Refer the Scope Vol-IIA for "Block Diagram". Bidders to visit

				the site before quoting.
20	Vol-IB	3.1 of Schedule 2A,2B and 2C	AAA Zebra	To quote for AAAC Zebra equivalent as per Specification given below

Technical specification for AAAC Zebra conductor.

TECHNICAL PARTICULARS OF CONDUCTOR :

COMPOSITE CONDUCTOR :-All Aluminium Alloy Conductor of size 37/4mm(Zebra)

Nominal Aluminium Alloy area	-	465 Sq. mm
Stranding and wire diameter	-	37/4 mm Aluminium Alloy
No. of aluminium alloy Strands		
Centre Wire		1
1st layer		6
2nd layer		12
3rd layer		18
4th layer		-
Sectional area of aluminium alloy		465 mm ²
Approximate overall diameter		28 mm
Approximate weight		1280.5 Kg/Km
Calculated D.C. resistance at 20deg. C		0.07130 ohm/km.
Approximate calculated breaking load		136.38 KN(Min)
Co-efficient of linear expansion of Aluminium alloy		23×10^{-6} per deg C
Final modulus of elasticity		0.5814×10^6 kg/cm ²
Constant - Mass temp. co-efficient of resistance of aluminium alloy wires measured between two potential points rigidly fixed to the wire at 20 deg.C		0.00360/°C
Electrical voloume resistivity		

at 20degC ohms-mm2/meter 0.0325 (max)
 Density of aluminium alloy
 wire at 20deg C 2.7kg/dm3
 Lay Ration of Aluminium
 Alloys Layers

	<u>Maximum</u>	<u>Minimum</u>
Ist layer of 6 wires	17	10
2nd layer of 12 wires	16	10
3rd layer of 18 wires	14	10
4th layer of 24 wires	—	—
<u>Strands</u> :	37/4 mm	
<u>Materials</u>	Aluminium alloy	
<u>Diameter</u>		
Standard	4 mm	
Maximum	4.04 mm	
Minimum	3.96 mm	
Cross sectional area for nominal diameter of wire	12.57 mm ²	
Weight	33.93 kg/Km	
Minimum breaking load (before stranding)	3.88KN/Km	
D.C. resistance at 20°C	2.663ohms/km(max).	
