

TRANSMISSION CORPORATION OF TELANGANA LIMITED

From:
The Chief Engineer,
Construction,
TS TRANSCO,
Vidyut Soudha,
HYDERABAD -500-082.

To:
M/s Advik Builders and Consultants Pvt. Ltd.,
(JV with M/s Naolin Infrastructure Pvt. Ltd.,
Hyderabad), Flat No. 202, Plot No. 476,
Habood Mansion, Ayyappa Society,
Madhapur, Hyderabad. - 500 081

Lr. No. CPT 320/SE -Const /132kV Nellikuduru SS /D.No. 1978/2017, Dt: 3.08.2017

Sirs,

Sub:- **Specification No. TST-TRANS-e-35/2015** - Supply, Erection, Testing and Commissioning of 132/33kV Substation at Nellikuduru, (ii) 132kV DC/SC line (27 km) from 132/33kV Ayyagaripally Substation to the proposed 132/33kV Nellikuduru Substation and (iii) 132kV Bay extension at 132/33kV Substation Ayyagaripally in Warangal District on Turnkey basis - Permission for Procurement of **Power & Control Cables** from M/s Suyog Electricals Ltd., Vadodara - Approval - Communicated - Regarding.

- Ref: 1. Contract Award PO No: 138/ CPT 320/SE -Const/ TST-TRANS-e-35/2015 /132kV
Nellikuduru SS/ RM-0089/16, Dt:21.07.2016.
2. Contract Award PO No: 139/ CPT 320/SE -Const/ TST-TRANS-e-35/2015 /132kV
Nellikuduru SS/ RC-0090/16, Dt:21.07.2016.
3. Your Lr.TST/NLKD/INSP-DI/25, Dt: 16.06.2017.

With reference to your letter dt:16.06.2017, it is to inform that TSTRANSCO has considered your request for procurement of **Power & Control Cables** from M/s. Suyog Electricals Ltd., Vadodara for erection of subject works only.

Further, the GTPs of **Power & Control Cables** (make : M/s. Suyog Electricals Ltd., Vadodara) received vide reference (3) cited are found in order and are hereby approved.

Hence, you are requested to offer inspection of **Power & Control Cables** as per the approved GTPs. A copy of approved GTPs is enclosed herewith.

However, please note that the approval of the drawings does not absolve you of your responsibility for satisfactory performance of the material to be supplied by you and for correctness there of or from the results arising out of error or omission there in or from any other obligation or liability.

The material to be supplied shall conform to TSTRANSCO's technical specification/ relevant IS.

Encl: Approved GTPs and Drawings



Yours faithfully,

[Signature]
CHIEF ENGINEER/
CONSTRUCTION

Copy to
The Chief Engineer/Zone/Warangal
The Superintending Engineer/OMC/Warangal
The Superintending Engineer/Designs/TSTRANSCO/VS/Hyderabad
The Executive Engineer/Construction/Warangal
The Divisional Engineer/TSTRANSCO/QC/VS/Hyderabad

GUARANTEED TECHNICAL PARTICULARS

Customer : Naolin Infrastructure Pvt Ltd.-Hyderabad
 Project : TSTRANSCO-132 KV S/S and Transmission Line
 Ref No : BRD/HP/NIPL/GTP/17-18
 Manufacturer : Suyog Electricals Ltd.

Rev.00 Dt:04/11/17

SR NO	DESCRIPTION	Unit	3.5C x 95mm ²
1	Make		SEPL
2	Standard Applicable		IS :7098 Part1
3	Rated Voltage	V	1100V
4	Suitable for earthed or unearthed system		both
5	Conductor		Stranded Aluminium as per IS -8130
	a) No of wires -Main core (min.)	Nos	15
	b) No of wires - Neutral core (min)	Nos	6
	c) Shape		Sector shaped
6	INSULATION		
	a) Material of insulation		XLPE as per IS : 7098 Part 1
	b)1. Nominal Thickness main core	mm	1.1
	2. Nominal Thickness neutral core	mm	1.0
	c) Min. Volume resistivity at 27° C	Ω-cm	1×10^{14} at 27° C
	d) Min. Volume resistivity at 90 °C	Ω-cm	1×10^{12} at 90° C
7	Core identification		Red, Yellow, Blue for Main & Black for Neutral
8	INNER SHEATH		
	a) Material		Extruded PVC TYPE ST-2 as per IS:5833
	b) Extruded or Wrapped		Extruded
	c) Thickness (min)	mm	0.4
	d) Dia over inner sheath (+/- 2mm)	mm	31.4
	e) Colour		Black
9	ARMOUR		
	a) Type of armour		GI Flat Strips
	b) Nominal dimension of Strips/Wire	mm	4 x 0.8
	c) Dia. Over Armour (+/- 2mm)	mm	33
10	OUTER SHEATH		
	a) Material		Extruded PVC TYPE ST-2 as per IS:5833
	b) Thickness (min.)	mm	1.56
	c) Colour		Black
	d) Overall diameter of cable (+/- 2mm)	mm	36.4
11	Approximate weight of cable	kg/km	1902
12	ELECTRICAL CHARACTERISTICS		
	a) Max. D.C. resistance at 20 °C-M.C.	Ω/km	0.320
	b) Max. D.C. resistance at 20 °C-N.C.	Ω/km	0.641
13	Max. permissible conductor temperature		
	a) Under continuous full load	°C	90 °C
	b) Under transient condition	°C	250 °C
14	Current carrying capacity		
	a) In Ground (continuous)	Amps	196
	b) In air (continuous)	Amps	221
15	Reactance per km at 50Hz	Ω/km	0.0724
16	Star Capacitance	µF/km	0.61
17	Short time Over Capacity & Duration		
	a) S.C. rating of conductor for 1 Sec	K.A.	9.0
18	CABLE DRUM		
	a) Safe pulling force when pulled by pulling edge on the conductor	N/mm ²	30N/mm ²
	b) Recommended min. installation radius	mm	12 X O D
	c) Standard drum length of cable (subject to a manufacture of ±5%)	mtr	500/1000mtr (+/-5%)
19	Marking on cable		SEPL 1100V Electric Cable

NOTE :-

- The Data specified above are based on IS specification and in case of any dispute or typographical error, interpretation of IS specification shall prevail.
- The conductor diameter are indicative and shall confirm to meet the IS requirements of conductor resistance.
- The packing drum dimension and weight are approximate and may vary.
- Non standard length shall be limited to 10% of the ordered quantity.



Checked
 Suresh
 20/11/17

APPROVED
 K.V.K.
 21/11/17
 Superintending Engineer
 Construction

GUARANTEED TECHNICAL PARTICULARS

Customer : Naofin Infrastructure Pvt Ltd. Hyderabad
 Project : TSTRANSCO-132 KV S/S and Transmission Line
 Ref No : BRD/HP/NIPL/GTP/17-18
 Manufacturer : Suyog Electricals Ltd.

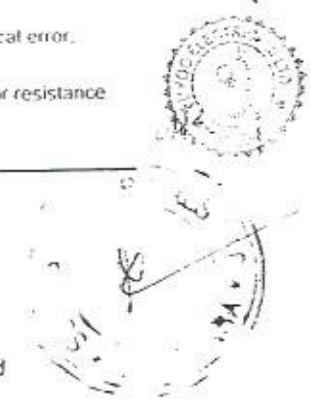
Rev.00 Dt.04.07.17

Sr No	DESCRIPTION	Unit	2C X 2.5mm ²	4C X 7.5mm ²	6C X 7.5mm ²	10C X 2.5mm ²	12C X 2.5mm ²
1	Make		SEPL				
2	Standard Applicable		IS:1554 Part1				
3	Rated Voltage	V	1100V				
4	Suitable for earthed or unearthed system		Both				
5	Conductor		Annealed Stranded Bare Copper as per IS : 8130				
	a) Number of wires (minimum)	Nos	3				
	b) Shape		Stranded Circular				
6	INSULATION		PVC TYPE "A" as per IS : 5831				
	a) Composition of insulation						
	b) Nominal Thickness	mm	0.9				
	c) Min. Volume resistivity at 27° C	Ω-cm	1 x 10 ¹¹ at 27° C				
	d) Min. Volume resistivity at 70° C	Ω-cm	1 x 10 ¹⁰ at 70° C				
7	Core identification		Red & Black	Red, Yellow, Blue & Black	Grey core numbering		
8	INNER SHEATH		PVC TYPE ST-1 as per IS:5831				
	a) Material						
	b) Extruded or Wrapped		Extruded				
	c) Thickness (mm)	mm	0.3				
	d) Dia over inner sheath (+/- 2mm)	mm	9.8	11.4	12.6	17.4	18
	e) Colour		Black				
9	OUTER SHEATH		Extruded PVC TYPE ST-1 as per IS:5831				
	a) Material						
	b) Thickness (nom.)	mm	1.8		2		
	c) Colour		Black				
	d) Overall diameter of cable (+/-2mm)	mm	13.4	15	17.2	21	22
10	Approximate weight of cable	kg/km	220	270	365	545	640
11	ELECTRICAL CHARACTERISTICS						
	a) Max. D.C. resistance at 20 Deg. C.-	Ω/km	7.41				
12	Max. permissible conductor temperature						
	a) Under continuous full load	Deg. C.	70° C				
	b) Under transient condition	Deg. C.	160° C				
13	Current carrying capacity						
	a) In Ground (continuous)	Amps	32	27	20	18	17
	b) In duct (continuous)	Amps	27	24	17	15	14
	c) In air (continuous)	Amps	27	24	17	15	14
14	Reactance per km at 50Hz	Ω/km	0.087				
15	Star Capacitance	µF/km	0.120				
16	Short time Over Capacity & Duration						
	a) S.C. rating of conductor for 1 Sec.	K.A.	0.288				
17	CABLE DRUM						
	a) Safe pulling force when pulled by pulling edge on the conductor	N/mm ²	50N/mm ²				
	b) Recommended min. installation radius		12 X O.D				
	c) Standard drum length of cable (subject to a manufacture of ±5%)	mt	500/1000mt/PO Qty (+5%)				
18	Marking on cable		SEPL 1100V Electric Cable				

NOTE :-
 1 The Data specified above are based on IS specification and in case of any dispute or typographical error, interpretation of IS specification shall prevail.
 2 The conductor diameter are indicative and shall confirm to meet the IS requirements of conductor resistance
 3 The packing drum dimension and weight are approximate and may vary.
 4 Non standard length shall be limited to 10% of the ordered quantity.

Checked
gls
20/11/17
20/11/17
Depos

APPROVED
K.V.R.
 Superintending Engineer
 Construction
 TSTRANSCO, V.S, Hyderabad



PURCHASE ORDER**Copper Control Cables**

To M/s Suyog Electricals Limited 1, Madhuvan Apartments, 24 Arunodaya Society, Alkapuri, Vadodara, Gujarat-390007 Contact No.: +91 9912345137	TIN No : 36AAFCP5359K1ZY Ref: Your offer dtd. 10-06-2017 and discussions thereafter. P.O.No: NAOLIN /TST/NLKD/PO/17-18/05	Date: 08-08-2017
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Kind Attn: Mr. B S Rajan

Sir / Madam,

We are pleased to place an order for Supply of **Copper Control Cables** for TSTRANSCO Nellikuduru Project.

S No	Material Description	Unit	Quantity	Rate (Rs.)	Amount (Rs.)
1	Copper Control cable of 2C x 2.5 Sq.mm	Kms	5	44,068.00	2,20,340.00
2	Copper Control cable of 4C x 2.5 Sq.mm	Kms	3	65,320.00	1,95,960.00
3	Copper Control cable of 6C x 2.5 Sq.mm	Kms	3	89,056.00	2,67,168.00
4	Copper Control cable of 10C x 2.5 Sq.mm	Kms	3	1,36,896.00	4,10,688.00
5	Copper Control cable of 12C x 2.5 Sq.mm	Kms	4	1,57,320.00	6,29,280.00
6	3.5 C x 95 Sq.mm Al. Power Cable	Kms	0.50	2,33,036.00	1,16,518.00
Sub-Total					18,39,954.00
CGST @ 14%					2,57,594
SGST @ 14%					2,57,594
Freight & Insurance					extra @ actuals
Purchase Order Value					23,55,141
Purchase Order Value (Rounded off)					23,55,141

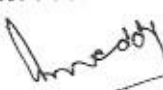
Amount in Words: **Rupees Twenty Three Lakhs Fifty Five Thousand One Hundred And Forty One Only****Terms & Conditions**

Payment Terms: As per Annexure-I
 Delivery Schedule: As per Annexure-I
 Test Certificate: As per TS TRANSCO Specification & requirement
 Dispatch Mode: By Road
 Warranty: 30 months form the date of despatch

Freight: As mentioned above
 Packing: Inclusive
 Insurance: As mentioned above

Bills & Documents are to be sent to:

Mr. Sreednar Reddy,
M/s NAOLIN Infrastructure Pvt Ltd.,
 #6-3-1090/1/1/3, 3rd Floor, above Blue Dart, UMA Hyderabad House,
 Rajbhawan Road, Somajiguda, Hyderabad - 500082

Yours faithfully,
 for Naolin Infrastructure Pvt. Limited

 Authorized Signatory



Accepted by

Signature of Supplier & Seal

Annexure-I

Project: TST-TRANS-e-35 -2015 : Supply, erection, testing and commissioning of i) 132/33 kV Substation at Nellikuduru in Warangal District, ii) Erection of 132KV DC/SC line (27.00 km) from existing 132KV SS Ayyagaripally to the proposed 132/33KV SS Nellikuduru in Warangal Dist. & iii) Erection of 132 KV Bay extension at 132KV Ayyagaripally Substation in Warangal Dist.

Terms & Conditions

- 1 **M/s Suyog Electricals Limited** has to submit all documents & drawings and should get the approval from T5 TRANSCO.
- 2 All inspections & testing as per TSTRANSCO shall be the responsibility of the Supplier, and all costs towards the same shall be borne by the Supplier. All drawings, inspection reports should be in the name of "M/s Advik Builders & Consultants Pvt Ltd in JV with M/s Naolin Infrastructure Pvt Ltd".
Any rejections on account of the above shall be to the Suppliers account
- 4 **Defect Liability period** shall be one year from date of commissioning or 18 months from the date of supply, whichever is earlier.
- 5 **Payment Terms** : 10% of basic Order value shall be paid as advance and balance payment through 45 days PDC from the date of dispatch.
- 6 The supplier shall replace the Material for any manufacturing defects or damages immediately
- 7 Prices are fixed for the entire duration of the Contract and no price Escalation shall be applicable.
- 8 **Delivery** : All the equipment under this PO shall be delivered before 15-Sep-17.
- 9 **Documents** : Our Purchase Order No. and Date should appear on all shipping documents. You have submit the documents in Triplicate such as Invoice, Delivery Challan, Packing List, Inspection report, manual etc for every consignment.
- 10 All disputes are subject to jurisdiction of Hyderabad courts only.

11 Delivery & Billing Address:

Buyer	M/s Naolin Infrastructure Pvt Ltd
GST	36AAFCP5359K1ZY
Consignee	Assistant Executive Engineer / Construction / TSTRANSCO / Warangal
Destination	132 kV Sub-station (proposed), Nellikuduru, Warangal Dist.

