

Corrigendum for RFQ No: SPKSCPV010

Title: Revised Technical specification and revised excel sheet (Unprice bid/price bid formats) for Supply of control & power cables for 10MW SPV Plant at Santaldih (WBSEDCL)

SL No	Description	To be read as
1	Tech Spec PS-439-1182	Revised spec PS-439-1182 uploaded
2	Excel sheet formats A1, A2, B1 & B2 (Unprice bid/price bid formats)	Revised Excel sheet formats A1, A2, B1 & B2 (Unprice bid/price bid formats). Description has been changed
3	Due date : 11.01.2018	Revised Due date: 15.01.2018. Due date to be extended from 11.01.2018 to 15.01.2018.

Please submit your offer considering the above changes.

			Purchase Specification for LT power and Control cables for 10MW(AC) Solar Power Plant at Santaldih, WBSEDCL project		PS 439-1182													
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		Technical specification of LT power and Control cables for 10 MW (AC) Solar Photovoltaic Grid-connected Power plant at Santaldih site (for WBSEDCL) <u>CORRIGENDUM</u> <table border="1"> <thead> <tr> <th>CI No / Sheet No</th> <th>Parameter</th> <th>Before</th> <th>After</th> </tr> </thead> <tbody> <tr> <td>CI no 11(a), sheet 4</td> <td>Max DC resistance at 20⁰ C (Main/core)</td> <td>0.780 ohm per Km /0.1.21 ohm per Km</td> <td>0.206 ohm per Km /0.386 ohm per Km</td> </tr> <tr> <td>CI (b), sheet 5</td> <td>Cable detail</td> <td>4-cx25 sq mm</td> <td>3.5-cx25 sq mm</td> </tr> </tbody> </table>					CI No / Sheet No	Parameter	Before	After	CI no 11(a), sheet 4	Max DC resistance at 20 ⁰ C (Main/core)	0.780 ohm per Km /0.1.21 ohm per Km	0.206 ohm per Km /0.386 ohm per Km	CI (b), sheet 5	Cable detail	4-cx25 sq mm	3.5-cx25 sq mm
CI No / Sheet No	Parameter						Before	After										
CI no 11(a), sheet 4	Max DC resistance at 20 ⁰ C (Main/core)						0.780 ohm per Km /0.1.21 ohm per Km	0.206 ohm per Km /0.386 ohm per Km										
CI (b), sheet 5	Cable detail						4-cx25 sq mm	3.5-cx25 sq mm										
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		Approved: V Radhakrishnan																
		Prepared Phalguni Sahoo		Issued PVCE		Date 18/12/2017												

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R01:(i) Change in CI no 11(a), sheet 4 (ii) Change in (b), sheet 5																																
COPY RIGHT AND CONFIDENTIAL The information on this document is the property of Bharat Heavy Electricals Limited. It must not be used directly or indirectly in anyway detrimental to the interest of the company.	1.0 INTRODUCTION This technical specification provides specifications for the supply of LT power and Control cables for solar power plant at Santaldih, WBSEDCL project.																															
	2.0 List of cables:																															
	<table><tr><th>Cable sl no</th><th>Description</th><th>Quantity</th></tr><tr><td>2.1</td><td>3.5-cx95 sq mm Cu conductor, XLPE insulation, Inner sheath of extruded PVC sheath ST-2 as per IS:5831, armoured cable and outer sheath of extruded FRLSH PVC ST-2 (UV-stabilised)</td><td>150 m</td></tr><tr><td>2.2</td><td>3.5-cx25 sq mm Cu conductor, XLPE insulation, Inner sheath of extruded PVC sheath ST-2 as per IS:5831, armoured cable and outer sheath of extruded FRLSH PVC ST-2 (UV-stabilised)</td><td>1100 m</td></tr><tr><td>2.3</td><td>4-cx2.5 sq mm Cu PVC insulated and armoured cable</td><td>12500 m</td></tr><tr><td>2.4</td><td>1cx25 sq mm Cu PVC insulated unarmoured cable</td><td>600 m</td></tr><tr><td>2.5</td><td>2-cx1.5 mm PVC insulated and sheathed unarmoured cable</td><td>4000 m</td></tr><tr><td>2.6</td><td>1-cx1.5 sq mm PVC insulated unarmoured cable</td><td>2000 m</td></tr><tr><td>2.7</td><td>2-pair 4 sq mm Cu cable, unarmoured PVC cable</td><td>1000 m</td></tr><tr><td>2.8</td><td>12-corex1.5 sq mm Cu instrumentation unarm cable: Cu conductor as per IS: 8130, class 5, collective screen of mylar tape. Inner sheath of Extruded PVC ST1to IS:5831. Outer sheath of extruded FRLSH PVC ST1 (UV-stabilised)</td><td>1000 m</td></tr></table>					Cable sl no	Description	Quantity	2.1	3.5-cx95 sq mm Cu conductor, XLPE insulation, Inner sheath of extruded PVC sheath ST-2 as per IS:5831, armoured cable and outer sheath of extruded FRLSH PVC ST-2 (UV-stabilised)	150 m	2.2	3.5-cx25 sq mm Cu conductor, XLPE insulation, Inner sheath of extruded PVC sheath ST-2 as per IS:5831, armoured cable and outer sheath of extruded FRLSH PVC ST-2 (UV-stabilised)	1100 m	2.3	4-cx2.5 sq mm Cu PVC insulated and armoured cable	12500 m	2.4	1cx25 sq mm Cu PVC insulated unarmoured cable	600 m	2.5	2-cx1.5 mm PVC insulated and sheathed unarmoured cable	4000 m	2.6	1-cx1.5 sq mm PVC insulated unarmoured cable	2000 m	2.7	2-pair 4 sq mm Cu cable, unarmoured PVC cable	1000 m	2.8	12-corex1.5 sq mm Cu instrumentation unarm cable: Cu conductor as per IS: 8130, class 5, collective screen of mylar tape. Inner sheath of Extruded PVC ST1to IS:5831. Outer sheath of extruded FRLSH PVC ST1 (UV-stabilised)	1000 m
	Cable sl no	Description	Quantity																													
	2.1	3.5-cx95 sq mm Cu conductor, XLPE insulation, Inner sheath of extruded PVC sheath ST-2 as per IS:5831, armoured cable and outer sheath of extruded FRLSH PVC ST-2 (UV-stabilised)	150 m																													
2.2	3.5-cx25 sq mm Cu conductor, XLPE insulation, Inner sheath of extruded PVC sheath ST-2 as per IS:5831, armoured cable and outer sheath of extruded FRLSH PVC ST-2 (UV-stabilised)	1100 m																														
2.3	4-cx2.5 sq mm Cu PVC insulated and armoured cable	12500 m																														
2.4	1cx25 sq mm Cu PVC insulated unarmoured cable	600 m																														
2.5	2-cx1.5 mm PVC insulated and sheathed unarmoured cable	4000 m																														
2.6	1-cx1.5 sq mm PVC insulated unarmoured cable	2000 m																														
2.7	2-pair 4 sq mm Cu cable, unarmoured PVC cable	1000 m																														
2.8	12-corex1.5 sq mm Cu instrumentation unarm cable: Cu conductor as per IS: 8130, class 5, collective screen of mylar tape. Inner sheath of Extruded PVC ST1to IS:5831. Outer sheath of extruded FRLSH PVC ST1 (UV-stabilised)	1000 m																														
3.0 Warranty: Vendor shall provide warranty for 12 months from the date of commissioning or 18 months from the date of supply, whichever is earlier. Vendor shall enclose, along with technical bid, the complete scope, terms and conditions of the warranty.																																
4.0 Documents to be submitted with technical offer: (i) Documents as per PQC. (ii) Technical datasheet of the cable with cable cross section sketch shall be submitted to BHEL/BHEL customer for approval.																																

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		A4-11	Offers without the above details are liable to be rejected.		
COPY RIGHT AND CONFIDENTIAL The information on this document is the property of Bharat Heavy Electricals Limited. It must not be used directly or indirectly in anyway detrimental to the interest of the company.	5.0 Technical specification				
	(a) 3.5-cx95 sq mm Cu conductor as per IS: 8130, class 5, 1100 V grade, XLPE insulation as per IS:7098 (Part-1), Inner sheath of extruded PVC sheath ST-2 as per IS:5831, GI Flat strip armoured cable and Outer sheath of extruded FRLSH PVC ST-2 (UV-stabilised)				
	1	Cable type	Flexible Annealed bare copper conductor, XLPE insulated, PVC inner sheathed, galvanised Steel flat strip armoured and overall FRLS PVC sheathed LT cable.	Vendor reply	
	2	Applicable standards	IS:7098-1/88,IS:8130/84, IS:5831/84,IS:3975		
	3	Voltage grade	1100 V		
	4	No of cores	3.5 cores		
	5	Conductor			
	(a)	Material	Stranded Annealed bare copper conductor Conforming to IS:8130/84		
	(b)	Area(Main & reduced)	95 / 50 sq mm		
	(c)	No of strands	As per class-5 of IS:8130/84		
	(d)	Shape	Flexible and circular		
	6	Insulation			
	(a)	Material	XLPE Compound Confirming to IS:7098-1/88		
	(b)	Type	Extruded		
	(c)	Thickness (Nominal)(Main/ Reduced core)	1.1/1.0 mm		
	(d)	Core identification	Red, Yellow, Blue & Reduced core Black		
	7	Inner sheath			
	(a)	Material	PVC Compound Type ST-2 Conforming to IS:5831/84		
	(b)	Type	Extruded		

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COPY RIGHT AND CONFIDENTIAL The information on this document is the property of Bharat Heavy Electricals Limited. It must not be used directly or indirectly in anyway detrimental to the interest of the company.	(c)	Thickness (Min)	0.5 mm		
	(d)	Colour	Black		
	8	Armour			
	(a)	Material	Galvanised Steel Flat Strip Conf. to IS:3975		
	(b)	Type	Single layer		
	(c)	Size of armour (Nominal)	4x0.8mm		
	9	Outer sheath			
	(a)	Material	PVC Compound Type ST-2 conforming to IS:5831/84 with FRLS properties		
	(b)	Type	Extruded		
	(c)	Thickness (Min)	1.88 mm		
	(d)	Colour of outer sheath	Black		
	(e)	Overall diameter	43.4 mm		
	(f)	Tolerance on overall diameter	+/- 3 mm		
	(g)	Marking on outer sheath	Manufacturer name, Year of manufacture, No of core x cross-sectional area, 1100V, FRLS, sequential length on outer cable sheath at every metre		
	10	Drum length	Less or equal 500 m / 1000 m		
	(a)				
	(b)	Tolerance on drum length	+/- 5%		
	11	Electrical parameters			
	(a)	Max DC resistance at 20 deg C (Main/core)	0.206 ohm per Km /0.386 ohm per Km		
	(b)	HV test	3 kV rms for 5 minutes		
	(c)	Min volume resistivity	1 x 10 ¹⁴ ohm-cm at 27 ⁰ C and 1 x 10 ¹² ohm-cm at 90 ⁰ C		
	12	FRLS properties (Outer sheath)			
	(a)	Min oxygen index as per ASTMD-2863	29%		

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COPY RIGHT AND CONFIDENTIAL The information on this document is the property of Bharat Heavy Electricals Limited. It must not be used directly or indirectly in anyway detrimental to the interest of the company.			(b)	Min temp index as per ASTMD-2863	250°C
			(c)	Max HCL emission as per IEC-754-1	20% by weight
			(d)	Max smoke density rating as per ASTMD-2843	60%
			(e)	Flammability test on completed cable	Shall meet as per test requirement as per IEC 60332-1-2
			(b) 3.5-cx25 sq mm Cu conductor as per IS: 8130, class 5, 1100 V grade, XLPE insulation as per IS:7098 (Part-1), Inner sheath of extruded PVC sheath ST-2 as per IS:5831, GI Flat strip armoured cable and Outer sheath of extruded FRLSH PVC ST-2 (UV-stabilized)		
			1	Cable type	Flexible Annealed bare copper conductor, XLPE insulated, PVC inner sheathed, galvanised Steel flat strip armoured and overall FRLS PVC sheathed LT cable.
			2	Applicable standards	General conformance to IS:1554-1/88, IS:8130/84, IS:3975,
			3	Voltage grade	1100 V
			4	No of cores	4 cores
			5	Conductor	
			(a)	Material	Stranded Annealed bare copper conductor Conforming to IS:8130/84
			(b)	Area (Main and reduced)	25 sq mm for main
			(c)	No of strands	As per class-5 of IS:8130/84
			(d)	Shape	Flexible and circular
			6	Insulation	
			(a)	Material	PVC type-A compound, conformance to IS:-2831/84
			(b)	Type	Extruded
			(c)	Thickness (Nom) - Main/ Reduced core	0.9 mm for main core
			(d)	Core identification	Red, Yellow, Blue & Black
			7	Inner sheath	
			(a)	Material	PVC Compound Type ST-1 Conforming to IS:5831/84
			(b)	Type	Extruded
			(c)	Thickness (Min)	0.3 mm
			(d)	Colour	Black

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		8	Armour		
		(a)	Material	Galvanised Steel Flat Strip conforming to IS:3975	
		(b)	Type	Single layer	
		(c)	Size of armour (Nom)	4 x 0.8 mm	
		9	Outer sheath		
		(a)	Material	PVC Compound Type ST-2 Conforming to IS:5831/84 with FRLS properties	
		(b)	Type	Extruded	
		(c)	Thickness (Min)	1.4 mm	
		(d)	Colour of outer sheath	Black	
		(e)	Overall diameter	27.1 mm	
		(f)	Tolerance on overall diameter	+/- 2 mm	
		(g)	Marking on outer sheath	Manufacturer name, Year of manufacture, No of cores, cross-sectional area, 1100V, FRLS, sequential length on outer cable sheath at every meter	
		10 (a)	Drum length	Less 1000 m	
		(b)	Tolerance on drum length	+/- 5%	
		11	Electrical parameters		
		(a)	Max DC resistance at 20 deg C (Main/core)	0.78 ohm / Km for Main core	
		(b)	HV test	3 kV rms for 5 minutes	
		(c)	Min volume resistivity	1 x 10 ¹³ ohm-cm at 27 ⁰ C and 1 x 10 ¹⁰ ohm-cm at 70 ⁰ C	
		12	FRLS properties (Outer sheath)		
		(a)	Min oxygen index as per ASTMD-2863	29%	
		(b)	Min temp index as per ASTMD-2863	250 ⁰ C	
		(c)	Max HCL emission as per IEC-754-1	20% by weight	
(d)	Max smoke density rating as per	60%			

	ASTMD-2843		
(e)	Flammability test on completed cable	Shall meet as per test requirement as per IEC 60332-1-2	

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(c) 4-cx2.5 sq mm Cu conductor as per IS: 8130, class 5 , 1100 V grade, PVC insulated, PVC inner sheathed, galvanized round wire armoured and overall FRLS PVC sheathed cable			
1	Cable type	Flexible annealed bare copper conductor, PVC insulated, PVC inner sheathed, galvanised steel round wire armoured and overall FRLS PVC sheathed cable.	
2	Applicable standards	IS:1554-1/88,IS:8130/84, IS:5831/84, IS:3975	
3	Voltage grade	1100 V	
4	No of cores	4 cores	
5	Conductor		
(a)	Material	Stranded Annealed bare copper conductor conforming to IS:8130/84	
(b)	Size (Main and reduced)	2.5 sq mm	
(c)	No of strands	As per class-5 of IS:8130/84	
(d)	Shape	Flexible and circular	
6	Insulation		
(a)	Material	PVC type-A compound, conforming to IS:-5831/84	
(b)	Type	Extruded	
(c)	Thickness (Nominal)(Main/ Reduced core)	0.9	
(d)	Core identification	Red, yellow, blue and black	
7	Inner sheath		

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			(a)	Material	PVC Compound Type ST-1 Conforming to IS:5831/84
			(b)	Type	Extruded
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			(d)	Colour	Black
			8	ARMOUR	
			(a)	Material	Galvanised steel round wire, conforming to IS:3975
			(b)	Type	Single layer
			©	Size of armour (Nom)	1.4 mm
			9	Outer sheath	
			(a)	Material	PVC compound type ST1, conforming to IS:5831/84 with FRLS properties
			(b)	Type	Extruded
			(c)	Thickness (Min)	1.24 mm
			(d)	Colour	Black
			(e)	Overall dia approx	16.4 mm
			(f)	Tolerance on overall diameter	+/- 2 mm
			(g)	Making of outer sheath	Manufacturer, Year of manufacture, No of core x cross-sectional area, 1100V, FRLS, sequential length on outer cable sheath at every metre
			8	Drum length	Less 1000 m
			(b)	Tolerance on drum length	+/- 5%
			9	Electrical parameters	
			(a)	Max DC resistance at 20 deg C (Main/core)	7.98 ohms per Km
			(b)	HV test	3 kV rms for 5 minutes
			(c)	Min volume resistivity	1 x 10 ¹³ ohm-cm at 27 ⁰ C and 1 x 10 ¹⁰ ohm-cm at 70 ⁰ C
			10	FRLS properties (Outer sheath)	
			(a)	Min oxygen index as per ASTMD-2863	29%
			(b)	Min temp index as per ASTMD-2863	250 ⁰ C
			(c)	Max HCL emission as per IEC-754-1	20% by weight
			(d)	Max smoke density rating as per ASTMD-	60%

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		(a)	Material	Stranded Annealed bare copper conductor Conforming to IS:8130/84	
		(b)	Size (Main and reduced)	1.5 sq mm	
		(c)	No of strands	As per class-5 of IS:8130/84	
		(d)	Shape	Flexible and circular	
		6	Insulation		
		(a)	Material	PVC type-A compound conforming to IS:5831/84	
		(b)	Type	Extruded	
		(c)	Thickness (Nominal)(Main/ Reduced core)	0.8 mm	
		(d)	Core identification	Black	
		(e)	Overall diameter	To be mentioned	
		(f)	Tolerance on overall diameter	To be mentioned	
		(g)	Marking on outer sheath	To be mentioned	
		10 (a)	Drum length	Less or equal 500 m / 1000 m	
		(b)	Tolerance on drum length	+/- 5%	
		11	Electrical parameters		
		(a)	Max DC resistance at 20 deg C (Main/core)	13.3 ohms per Km	
		(b)	HV test	3 kV rms for 5 minutes	
		(c)	Min volume resistivity	1 x 10 ¹³ ohm-cm at 27 ⁰ C and 1 x 10 ¹⁰ ohm-cm at 90 ⁰ C	
		(f)) 2c x 1.5 sq mm copper PC insulated, PVC inner sheathed and overall FRLS PVC sheathed unarmoured cable			
1	Cable type	Flexible annealed bare copper conductor, PVC insulated, PVC inner sheathed and overall FRLS-PVC sheathed unarm cable			
2	Applicable standards	IS:1554-1/88,IS:8130/84, IS:5831/84, others to be mentioned			

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			4	No of cores	2 cores
			5	Conductor	
			(a)	Material	Stranded Annealed bare copper conductor Conforming to IS:8130/84
			(b)	Size	1.5 sq mm, each core
			(c)	No of strands	As per class-5 of IS:8130/84
			(d)	Shape	Flexible and circular
			6	Insulation	
			(a)	Material	PVC type-A compound conforming to IS:5831/84
			(b)	Type	Extruded
			(c)	Thickness (Nominal)(Main/ Reduced core)	0.8 mm
			(d)	Core identification	Red and Black
			7	Inner sheath	
			(a)	Material	PVC compound ST-1, conforming to IS:5831/84
			(b)	Type	Extruded
			(c)	Thickness (Nominal)(Main/ Reduced core)	0.3 mm
			(d)	Colour	Black
			10	Outer sheath	
			(a)	Material	PVC compound ST-1, conforming to IS:5831/84 with FRLS properties
			(b)	Type	Extruded
			(c)	Thickness (Nom)	1.8 mm
			(d)	Colour of outer sheath	Black
			(e)	Overall diameter	To be mentioned
			(f)	Tolerance on overall diameter	To be mentioned
			(g)	Marking on outer sheath	To be mentioned
			10	Drum length	Less or equal 500 m / 1000 m
			(a)		
			(b)	Tolerance on drum length	+/- 5%
			11	Electrical parameters	

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		(d)	Core identification	All crores shall be grey, also numbering shall be provided on each core for core identification.	
		7	Overall shielding		
		(a)	Material	Aluminum-Mylar Tape	
		(b)	Type	Helical	
		(c)	Thickness (Min)	0.018 mm	
		(d)	Overlap/coverage	25/100	
		8	Drain Wire		
		(a)	Material	Stranded Annealed Tinned Copper	
		(b)	size	0.5mm ²	
		(c)	No. of strands	7	
		9	Outer sheath		
		(a)	Material	PVC Compound Type ST-1 Conforming to IS:5831/84	
		(b)	Type	Extruded	
		(c)	Thickness (Min)	1.2 mm	
		(d)	Colour of outer sheath	Black	
		(e)	Overall diameter	14.9 mm or to be mentioned if otherwise	
		(f)	Tolerance on overall diameter	+/- 2 mm	
		(g)	Marking on outer sheath	Manufacturer name, Year of manufacture, No of core x cross-sectional area, 300/500 V, FRLS, sequential length on outer cable sheath at every meter	
		10	Drum length	Less or equal 500 m / 1000 m	
		(a)			
		(b)	Tolerance on drum length	+/- 5%	
		11	Electrical parameters		
		(a)	Max DC resistance at 20°C (Main/core)	13.3	
		(b)	Min insulation resistance of completed cable at 20°C	25 Mohms	
		(c)	Max mutual capacitance between any core & screen at 1 KHz	250 pF/ metre	

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		(d)	Max capacitance between any core & screen at 1 KHz	450 pF/ metre		
		(e)	High voltage test	1 kV rms for 1 minute		
		12	FRLS properties (Outer sheath)			
		(a)	Min oxygen index as per ASTMD-2863	29%		
		(b)	Min temp index as per ASTMD-2863	250°C		
		(c)	Max HCL emission as per IEC-754-1	20% by weight		
		(d)	Max smoke density rating as per ASTMD-2843	60%		
		(e)	Flammability test on completed cable	Shall meet as per test requirement as per IEC 60332-1-2		
		(h) 2-pair x 4 sq mm copper conductor, PVC insulated, overall screened and overall FRLS-PVC sheathed instrumentation cable				
		1	Cable type	2-pair copper conductor, PVC insulated, Overall screened and overall FRLS PVC sheathed unarmoured instrumentation cable.		
		2	Applicable standards	IS:5308-2/86,IS:8130/84, IS:5831/84		
		3	Voltage grade	300/500 V		
		4	No of Pair	2P		
		5	Conductor			
		(a)	Material	Stranded Annealed bare copper conductor conforming to IS:8130/84		
		(b)	Size	4 sq mm		
		(c)	No of strands	As per class-5 of IS:8130/84		
		(d)	Shape	Flexible and circular		
		6	Insulation			
		(a)	Material	PVC Type-A conforming to IS:5831/84		
		(b)	Type	Extruded		
		(c)	Thickness (Nominal)(Main/ Reduced core)	0.8 mm		

			Purchase Specification for LT power and Control cables for 10MW(AC) Solar Power Plant at Santaldih, WBSEDCL project		PS 439-1182
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		A4-11			
			(d)	Pair identification	All pair shall be white, blue, also Cores of each pair shall be numbered for pair identification
			(f)	Approx. number of Twist(for cores in pair)	10 twists/meter
COPY RIGHT AND CONFIDENTIAL The information on this document is the property of Bharat Heavy Electricals Limited. It must not be used directly or indirectly in anyway detrimental to the interest of the company.			7	Overall Shielding	
			(a)	Material	Aluminum-Mylar Tape
			(b)	Type	Helical
			(c)	Thickness (Min)	0.018 mm
			(d)	Overlap/coverage	25/100%
			8	Drain Wire (for overall screening)	
			(a)	Material	Annealed Tinned copper
			(b)	Size	0.5 sq mm
			(c)	No. of strands / approx dia of each strand	7 strands / 0.3 mm
			9	Outer sheath	
			(a)	Material	PVC Compound Type ST-1 Conforming to IS:5831/84 with FRLS properties
			(b)	Type	Extruded
			(c)	Thickness (Min)	1.3 mm
			(d)	Colour of outer sheath	Black
			(e)	Overall diameter	17.2 mm
			(f)	Tolerance on overall diameter	+/- 2 mm
			(g)	Marking on outer sheath	Manufacturer name, Year of manufacture, No of core x cross-sectional area, 1100V, FRLS, sequential length on outer cable sheath at every meter
			10	Drum length	Less or equal 500 m / 1000 m
				Tolerance on drum length	+/- 5%
			11	Electrical parameters	
			(a)	Max DC resistance at 20°C (Main/core)	4.95 ohms per Km
			(b)	Min. insulation resistance of complete cable at 20°C	25 Mohms per Km

			Purchase Specification for LT power and Control cables for 10MW(AC) Solar Power Plant at Santaldih, WBSEDCL project	PS 439-1182
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	(c)	Max. Mutual capacitance between pairs or adjacent cores at 1 KHz	250 pF per meter	
	(d)	Max. capacitance between core and screen at 1 KHz	450 pF per meter	
	(e)	HV test	2 kV rms for 1 minute	
	12	FRLS properties (Outer sheath)		
	(a)	Min oxygen index as per ASTMD-2863	29%	
	(b)	Min temp index as per ASTMD-2863	250°C	
	(c)	Max HCL emission as per IEC-754-1	20% by weight	
	(e)	Flammability test on completed cable	Shall meet as per test requirement as per IEC 60332-1-2	
	7.0 Documents to be submitted within 1 week after receipt of Purchase order			
	1. Technical datasheet of the cable with cable cross section sketch shall be submitted to BHEL/BHEL customer for approval.			
	2. Manufacturing Quality Plan (MQP) indicating all tests/checks regarding raw material, in-process and final product as per relevant IS/IEC standards, as called in this document and any other relevant standards shall be submitted to BHEL/BHEL customer for approval.			
8.0 Inspection and testing of transformers at vendor works:				
(i) BHEL and BHEL customer shall witness the testing of the cables as per relevant standard.				
(ii) Routine and acceptance tests				
Vendor shall submit routine and acceptance test plan for approval by BHEL / BHEL customer.				

Annexure-A1

TECHNICAL BID ENCLOSURE FOR COMPLIANCE OF QUOTE : UNPRICED BID (Foreign Vendors)							
RFQ No. SPKSCPV010 Dtd.29.12.2017 Due Date (Tech Bid): 09.01.2018							
SI No.	Material Code	DESCRIPTION	Quantity	Unit	Quoted	HSN/SAC CODES	Currency
1	PS0679074600	3.5Cx25.sq.mm copper cable,armoured XLPE	1,100	M	Yes / No		
2	PS0679074619	4Cx2.5 sq.mm copper cable, armoured	12,500	M	Yes / No		
3	PS0679074627	1Cx25 sq.mm Copper	600	M	Yes / No		
4	PS0679074635	2Cx1.5.sq.mm copper cable	4,000	M	Yes / No		
5	PS0679074643	1Cx1.5sq.mm Copper	2,000	M	Yes / No		
6	PS0679074651	2Px4.sq.mm copper cable	1,000	M	Yes / No		
7	PS0679074660	12Cx1.5.sq.mm Copper	1,000	M	Yes / No		
8	PS0679074678	3.5Cx95.sq.mm copper cable,XLPE,Armoured	150	M	Yes / No		
9	Other charges- custom duty, GST, packing, freight, handling, inland transport etc), if any				Yes / No		
10	Total Price FOB/CIF/Door Delivery						

Please refer RFQ/Tender for detailed description of items.

Note:

The above format is to be used for Unpriced bid.

Evaluation on complete package basis, L1 of Supply on "FOR Destination" basis to site will only be considered.

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ANNEXURE A2

PRICE BID (Foreign Vendors)							
RFQ No. SPKSCP010 Dtd.29.12.2017 Due Date (Tech Bid): 09.01.2018							
SI No.	Material Code	DESCRIPTION	Quantity	Unit	Quoted	HSN/SAC CODES	Currency
1	PS0679074600	3.5Cx25.sq.mm copper cable,armoured XLPE	1,100	M	Yes / No		
2	PS0679074619	4Cx2.5 sq.mm copper cable, armoured XLPE	12,500	M	Yes / No		
3	PS0679074627	1Cx25 sq.mm Copper, XLPE	600	M	Yes / No		
4	PS0679074635	2Cx1.5.sq.mm copper cable,XLPE	4,000	M	Yes / No		
5	PS0679074643	1Cx1.5sq.mm Copper,XLPE	2,000	M	Yes / No		
6	PS0679074651	2Px4.sq.mm copper cable,XLPE	1,000	M	Yes / No		
7	PS0679074660	12Cx1.5.sq.mm Copper,XLPE Cable	1,000	M	Yes / No		
8	PS0679074678	3.5Cx95.sq.mm copper cable,XLPE,Armoured	150	M	Yes / No		
9	Other charges- custom duty, GST, packing, freight, handling, inland transport etc), if any				Yes / No		
10	Total Price FOB/CIF/Door Delivery						

Please refer RFQ/Tender for detailed description of items.

Note:

The above format is to be used for Priced bid.

Evaluation on complete package basis, L1 of Supply on "FOR Destination" basis to site will only be considered.

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TECHNICAL BID ENCLOSURE FOR COMPLIANCE OF QUOTE : UNPRICED BID (Indigenous Vendors)								
RFQ No. SPKSCP010 Dtd.29.12.2017 Due Date (Tech Bid): 09.01.2018								
Sl No.	Material Code	DESCRIPTION	QUOTED	QTY	UNIT	HSN/SAC CODES	BREAK UP OF TAX STRUCTURE (CGST/SGST/IGST/Service Tax etc) WITH CURRENT RATES	Remarks
1	PS0679074600	3.5Cx25.sq.mm copper cable,armoured XLPE	Yes / No	1,100	M			Taxes extra
2	PS0679074619	4Cx2.5 sq.mm copper cable, armoured	Yes / No	12,500	M			Taxes extra
3	PS0679074627	1Cx25 sq.mm Copper	Yes / No	600	M			Taxes extra
4	PS0679074635	2Cx1.5.sq.mm copper cable	Yes / No	4,000	M			Taxes extra
5	PS0679074643	1Cx1.5sq.mm Copper	Yes / No	2,000	M			Taxes extra
6	PS0679074651	2Px4.sq.mm copper cable	Yes / No	1,000	M			Taxes extra
7	PS0679074660	12Cx1.5.sq.mm Copper	Yes / No	1,000	M			Taxes extra
8	PS0679074678	3.5Cx95.sq.mm copper cable,XLPE,Armoured	Yes / No	150	M			Taxes extra
9	**Freight Charges including GST on Freight		YES/NO	Lumpsum			NA	**Freight : Free of Cost/Extra

Please refer RFQ/Tender for detailed description of items.

Note:

1. The quoted prices shall be on "FOR" basis to project sites.
2. Please indicate taxes clearly applicable as on date.
3. The above format only shall be used for compliance.No changes are acceptable.
4. Tax rates for Supply for Sl No.1-8.
5. Indicate whether freight charges are free of cost or will be charged extra.In absence of clarity, these charges shall be considered free of cost from vendor.(If the offer contains the freight value at actuals, it will be considered as free of cost). **No communication will be sought in this regard.**
6. SUCCESSFUL VENDOR SHALL SUBMIT THE BILLING BREAK UP FOR SUPPLY & I&C FOR APPROVAL AND IMPLEMENTATION.Successful vendor to furnish HSN/SAC codes against each item for billing break-up implementation.
7. Splitting is not applicable.
8. Evaluation on complete package basis, L1 of Supply on "FOR" basis to site will only be considered.

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PRICED BID (Indigenous Vendors)								
RFQ No. SPKSCP V010 Dtd.29.12.2017 Due Date (Tech Bid): 09.01.2018								
Sl No.	Material Code	DESCRIPTION	QTY	UNIT	Unit Rate (Rs.)	Total Value (Rs.) (Rate X Qty)	BREAK UP OF TAX STRUCTURE (CGST/SGST/IGST/Service Tax etc) WITH CURRENT RATES	Remarks
1	PS0679074600	3.5Cx25.sq.mm copper cable,armoured XLPE	1,100	M				Taxes extra
	Unit rate in words :							
2	PS0679074619	4Cx2.5 sq.mm copper cable, armoured	12,500	M				Taxes extra
	Unit rate in words :							
3	PS0679074627	1Cx25 sq.mm Copper	600	M				Taxes extra
	Unit rate in words :							
4	PS0679074635	2Cx1.5.sq.mm copper cable	4,000	M				Taxes extra
	Unit rate in words :							
5	PS0679074643	1Cx1.5sq.mm Copper	2,000	M				Taxes extra
	Unit rate in words :							
6	PS0679074651	2Px4.sq.mm copper cable	1,000	M				Taxes extra
	Unit rate in words :							
7	PS0679074660	12Cx1.5.sq.mm Copper	1,000	M				Taxes extra
	Unit rate in words :							
7	PS0679074678	3.5Cx95.sq.mm copper cable,XLPE,Armoured	150	M				Taxes extra
	Unit rate in words :							
8	**Freight Charges including GST on Freight		Lumpsum				NA	**Freight : Free of Cost/Extra
	Freight charge in words :							

Please refer RFQ/Tender for detailed description of items.

Note:

- The quoted prices shall be on "FOR" basis to project sites.
- Please indicate taxes clearly applicable as on date.
- The above format only shall be used for compliance.No changes are acceptable.
- Tax rates for Supply for Sl No.1-8.
- Indicate whether freight charges are free of cost or will be charged extra.In absence of clarity, these charges shall be considered free of cost from vendor.(If the offer contains the freight value at actuals, it will be considered as free of cost). **No communication will be sought in this regard.**
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