भा एच ई एल BHEL HYDERABAD	**BHARAT HEAVY ELECTRICAL LIMITED** **RAMACHANDRPURAM :: HYDERABAD 502 032.**	Enquiry No. :	
		Due Date :	
	CONTACT DETAILS	Supplier Qtn. No.:	
		Date :	

TECHNICAL SPECIFICATION CUM COMPLIANCE CERTIFICATION FOR POWER CABLES FOR 125T BALANCING TUNNEL

NOTE:-

1. Vendor (OEM) must submit complete information against clause no. 12.1 The offer meeting this clause would only be processed.

2. The "Offered" Column and where applicable, the "Deviations" & "Remarks" Column of this format shall be filled in by the Vendor and submitted along with the offer. Inadequate / incomplete, ambiguous, or unsustainable information against any of the clauses of the specifications/requirements shall be treated as non-compliance.

3. The offer and all documents enclosed with offer should be in English language only.

4. Vendor to submit offer in two parts in closed envelops viz. Technical bid and Price bid.

ADDRESS OF THE SUPPLIER :	ADDRESS OF THE INDIAN AGENTS :
TELEPHONE NOS.:	TELEPHONE NOS.:
FAX NOS.:	FAX NOS.:
E-MAIL ADDRESS :	E-MAIL ADDRESS :

SCOPE: DESIGN, MANUFACTURE, ASSEMBLY, TESTING, PACKING AND DISPATCH OF POWER CABLES FOR 125T BALANCING TUNNEL.

S.NO.	DESCRIPTION FOR BHEL REQUIREMENT			OFFERED	DEVIATIONS	REMARKS
1.0	**Purpose of the Equipment:**					
1.1	This specification specifies the requirement of Design, Engineering, Manufacture, Assembly, Inspection, Testing and Delivery of power cable for VFD of 125T balancing tunnel.					
2.0	**Scope :**					
2.1	**6.6kV unearthed grade 1Cx300 Sq.mm copper flexible cable.** (Annealed Tinned copper conductor (class-5), EPR (type IE-3)insulated, Insulation screened with extruded semi conducting compound and ATC wire braid, NBR PVC (Tupe SE-4), Overall sheathed 6.6 KV grade cable (suitable for 6.6 KV UE system) to IS-9968/II/2002)	:	**1500 meters**			
3.0	**Technical specification :**					
3.1.0	**6.6kV unearthed grade 1Cx300 Sq.mm copper flexible cables.**					
3.1.1	No. of core X Area of cross section		1 X 300 sq.mm			
3.1.2	Voltage grade		6.6 KV grade cable (suitable for 6.6KV UE system)			
3.1.3	Conductor		Tinned Copper and shall confirm to IS 6380			
3.1.4	Flexibility class as per IS 8130/84		Class -2			
3.1.5	Inner Sheath		Extruded PVC/extruded FRLS PVC			
3.1.6	Conductor screening material		Extruded semi conducting compound			
3.1.7	Insulation screening material (non metallic)		Extruded semi conducting compound			
3.1.8	Insulation screening material		Annealed Tinned copper			

S.NO.	DESCRIPTION FOR BHEL REQUIREMENT			OFFERED	DEVIATIONS	REMARKS
	(Metallic)					
3.1.9	Outer sheath material		NBR PVC (Type SE-4), IS 8130/84			
3.1.10	Insulation material		EPR (type IE-3)insulated as per IS 8130/84			
3.1.11	Approx. over all diameter of cable		Vendor to specify			
4.0	**APPLICABLE STANDARDS**					
4.1	IS-9968, Part2	:	Specification for Elastromer Insulated Cables.			
4.2	IS-8130	:	Conductors for insulated electric cables and flexible cords.			
4.3	IS-10462	:	Fictitious calculations method for determination of dimensions of protective covering of cables: part1 Elastomer and thermoplastic insulated cables.			
4.4	ASTM-D2843	:	Standard for smoke generation test.			
4.5	IE-332-1	:	Standard for Flammability test.			
4.6	SS 424 1475	:	Standard for Flammability test			
5.0	**TESTS** All acceptance and routine tests shall be carried out at vendor's works in the presence of BHEL's representative. Type test reports of similar cables whenever they are called for shall be furnished.					
6.0	**CABLE LENGTHS** Cable shall be delivered in maximum possible lengths of not less than 500M neatly rolled on wooden drums, with both ends sealed with moisture proof sealing.					
7.0	**DOCUMENTATION**					

S.NO.	DESCRIPTION FOR BHEL REQUIREMENT	OFFERED	DEVIATIONS	REMARKS
	a) 2 copies of filled up Technical data sheets. b) Quality assurance schedules. c) 6 copies of test certificates within one week after the inspection			
8.0	**TECHNICAL DATA SHEETS** (To be filled in and sent along with the Bid for each type of cable)			
1.	Make			
2.	Type			
3.	Applicable standard			
4.	Voltage Grade			
5.	Suitable for system with			
	a) Service voltage			
	b) Neutral Earthed / unearthed			
6.	Max. Conductor temperature			
	a) Continuous degC			
	b) Short time deg C			
7.	Conductor			
	a) Material			
	b) Size (Sq.mm)			
	c) No.of wires & Diameter of each wire			
8.	Shielding on Conductor			
	a) Material			

S.NO.	DESCRIPTION FOR BHEL REQUIREMENT		OFFERED	DEVIATIONS	REMARKS
	b) Type				
	c) Thickness (Nominal) mm.				
	d) Short time current rating kA/Sec				
9.	Insulation				
	a) Material				
	b) Type				
	c) Thickness (Nominal) mm.				
10.	Shielding of Insulation				
	a) Material				
	b) Type				
	c) Thickness (Nominal) mm.				
	d) Short time current rating kA/Sec				
11.	Inner Sheath				
	a) Material				
	b) Type				
	c) Thickness (Nominal) mm.				
	d) Extruded (Yes/No)				
	e) Approx. outside dia. Over inner sheath (mm)				
12.	Overall sheath				

S.NO.	DESCRIPTION FOR BHEL REQUIREMENT		OFFERED	DEVIATIONS	REMARKS
	a) Material				
	b) Type				
	c) Thickness (Nominal) mm.				
13.	Approx. overall Dia (mm)				
14.	Standard drum length with tolerance (M)				
15.	Net weight of able (Kg/Km)				
16.	Continuous current rating for standard IS condition laid direct (Amps)				
	a) In ground				
	b) In duct				
	c) In air				
17.	Short circuit current for 1 Sec. (kA)				
18.	Electrical parameters at max. operating temperature (Ohm/km)				
	a) Resistance				
	b) Reactance at 50 Hz				
	c) Capacitance				
19.	Recommended minimum bending radius				
20.	Losses (watts/Metre)				
21.	List of routine and type tests certificate enclosed.				

S.NO.	DESCRIPTION FOR BHEL REQUIREMENT	OFFERED	DEVIATIONS	REMARKS
9.0	**Preservation:** - Preservation should be accomplished in accordance with acceptable commercial practice for the type of supply.			
10.0	**Packing and forwarding:**			
10.1	**Name Plate:** Each cable drum shall be marked with following information at a visible place. - Manufacturer's Name. - Details of cable - Length of the cable. - Gross weight. - Direction of rotation of drum by means of an arrow for un-winding. - Purchase Order Number. - BHEL Material Code. - Dispatch information.			
10.2	Cables shall be dispatched in wooden drums, securely battened with take off end fully protected against damage.			
10.3	The ends of the cable shall be sealed with suitable PVC / rubber caps to prevent ingress of moisture.			
11.0	**Guarantee:**			
11.1	As per BHEL Terms & Conditions			
12.0	**Qualification of vendors:**			
12.1	Vendor should have supplied two such supplies' earlier. References of similar supply are earlier to be furnished with the offer.			
13.0	**Other conditions:**			
13.1	The complete offered system will be considered for procurement.			
13.2	In case the quoting agency for this system is not OEM, then it is mandatory that the supplier should provide a letter from the respective OEM stating that, they will support the equipment in both technical and logistic for at least two years.			

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13.3	The complete system engineering is the responsibility of supplier. Vendors who supply in part will be disqualified			
13.4	The system, any unit or parts there in, if found defective during commissioning or there after shall be replaced within a week of detection of such defects.			
14.0	***In case of any clarification required, the party taking part in tender shall contact BHEL and obtain written clarification regarding this tender.***			