Full Rehabilitation of Stormwater Lift Station - Phase 2

Item # in BOQ	Item	#	Description	Required Specifications	Offered Specifications
1- Mechanical Work					
1	Horizontal centrifugal storm water pumps 2525m3/hr	1	Brand:	The required brands (SPP) or equivelent	
		2	Make:	Original manufacturer (locally assembled not acceptable)	
		3	Type	Horizontal double suction centrifugal volute pump, type of pump: split case	
		4	Rated Capacity :	Not less than 2525 m3/hr	
		5	Rated head :	Min 24 M	
		6	Room temp.	55c°	
		7	Motor Brand	To be filled	
		8	Motor Power rating:	At least 315 KW	
		9	Motors proposed	Standard TEFC, IEC Design, IE2 rating, suitable for 50° C ambient temp.	
		10	Max. Rotational Speed	950 - 1000 rpm	
		11	Rated voltage ,No of phase, Frequency:	400 V, 3PH, 50Hz	
		12	Enclosure class:	(IEC 34-5) IP 55	
		13	Cos phi power factor	0.80 - 0.90	
		14	Thermal Protection	internal	
		15	Built-in temperature transmitter	Yes	
		16	Insulation class:	F	
		17	Efficiency:	Not less than 80 percent at duty point	
		18	Engine coil	Made of copper	
		19	Max. noise level :	90 - 95 dB(A) at 1.0m distance	
		Material			
		20	Casing	DUCTILE IRON, EN 1563 EN-GJS-500-7	
		21	Impeller	Duplex Stainless steel casting / SCS13	
		22	Shaft :	Stainless steel / SUS403	
		23	Casing Wear Ring	Stainless steel / SUS304	
		24	Packing sleeve	Stainless steel / SUS304	
		Pump specification			
		25	Liquid	Rian water	
		26	Liquid temperature	0°C to 80°C	
		27	Flange	ISO	
		28	Bearing	Ball	
		29	Bearing lubrication	Grease	
		30	Shaft seal	Mechanical seal	
		31	Sleeve	Shaft sleeve are adaptable	
		32	Painting	Casing internal: Epoxy resin painting for water service Outside surface: Epoxy resin painting	
		33	Rotating direction	Clockwise (viewed from drive machine)	
		34	Suction. Discharge direction	horizontal-horizontal	
		35	Accessory	Base, Foundation bolts, Coupling, Coupling cover, Priming detecteor, Pressure gauge, Temperature detector	
		36	Rubber:	EPDM - E	
		37	The bearing shall be grease type lubrications:	Yes/Required	
		38	The shaft of the pump shall be with direct coupling to the motor:	Yes/Required	
		39	The motor shall have IEC standard dimensions	Yes/Required	
		40	Testing by international inspection company (third party) for performance of pump	Yes/Required - The pump should be tested by international inspection company (third party) which should be approved by the engineering committee with providing the end user with original copies for all test certifications and other documents issued by	
		41	Certificates of origin, inspection documents, Manufacturers' certification and original warranty letter by manufacturer or the official agent of the manufacturer	Yes/Required	
		42	Submit Detail drawing, brochure catalogue and Data Sheet:	Yes/Required	
2	Mechanical Fitting for Connecting the Pumps	1	Brand:	The required brand is VAG, KTZ, Crane, Honeywell, KSB or equivalent	
		2	Make:	Original manufacturer (assembled not acceptable)	
		3	Material body and disk	ductile iron EN-GJS-400-15 (GGG40 according to DIN 1693)	
		4	The shaft :	stainless steel	
		5	The coating:	coated by using epoxy minimum thickness of 300 microns (coated by manufacturer)	
		6	Certificates of origin, inspection documents, Manufacturers' certification and original warranty letter by manufacturer or the official agent of the manufacturer	Yes/Required	
		7	Submit Detail drawing, brochure catalogue and Data Sheet:	Yes/Required	
2- Electrical Work					
		1	Make/Brand/Model:	The required brands (Schneider, ABB, Astor, or Equivalent)	
		2	No.:	1	
		3	Name of manufacturer	to be completed by the tenderer	
		4	Type:	Oil-immersed hermetically sealed - bolted type	
		5	Country of origin	to be completed by the tenderer	
		6	Reference standard	IEC 60076-1, 2,3,5,8, IEC 60214, IEC 60137, Latest IEC standard. To be subjected by National Iraqi ministry of Electricity D026.	
		7	Ambient temperature:	Highest maximum (in the shade) +55C for about 6 hrs. a day. Lowest minimum -10C. Maximum yearly average+30C Maximum daily average +40C.	
		8	Air humidity:	Maximum 92% at 40 C Minimum 12% Yearly average 44%	
		9	Altitude:	1000M above sea level	
		10	Number of poles	3	
		11	Indoor or outdoor	Indoor	
		12	Highest system voltage	12 kV	
		13	Short circuit current on 11 kV side	25 KA.	
		14	Short circuit current on LV side	According to the short circuit level of H.T side and the rated power of the transformer	
		15	11 kV system	3- phase,3-wire with neutral isolated but provision is made for earthling through an earthling resistance of 21.1 ohms to limit the earth fault current to 300 Amp	
		16	Low voltage side earthing	Neutral solidly earthed	
		17	Low voltage side	Nominal voltage: 416/240 volts s System. 3-phase, 4-wire neutral solidly earthed.	
		18	Voltage Ratio	11/0.416 KV	
		19	Type of cooling	ONAN	
		20	Rated power - Continuous	2500 kVA	
		21	Rated Frequency	50Hz	
		22	Impedance voltage at 75 deg at nominal tap	to be completed by the tenderer	
		23	Nominal Voltage of winding a) H.V. b) L.V	11 kV 0.416 kV	
		24	Rated voltage at no load	H.V. 11kv L.V- 416 volt.	
		25	No Load losses (KW)	to be completed by the tenderer	

1	Distribution Transformer 11/0.416 kV 2500 KVA	26	Load loss at full load at 75 deg temperature (KW)	to be completed by the tenderer	
		27	Warranty period	two year	
		28	Efficiency	≥ 98.9%	
		29	Winding type	copper winding, wound, 3-phase	
		30	Vector relation ship	Dyn 11	
		31	Interphase Connection	H.V. Delta L.V- star with neutral brought out	
		32	Temperature rise	(i) 45 C in top oil by thermometer (ii) 50 C in winding by resistance	
		33	No. of outgoing halls	To be an adequate number to suit the number of outgoing L.V cables	
		34	Off circuit tapings	five tapping for ± 2.5% , ± 5% % on the H.T winding for off circuit operation externally. The machine must be of the robust and definite position type with a click indicating position arrived during tap changing	
		35	Transformer oil		
		1	Type of oil	IEC60296 class 1	
		2	Manufacturer	to be completed by the tenderer	
		3	Place of manufacture	to be completed by the tenderer	
		4	Manufacturer's type designation	to be completed by the tenderer	
		5	Applied IEC standard	IEC 60296	
		6	Kinematic viscosity mm2/s	to be completed by the tenderer	
			At 40 deg	≤ 16.5	
			At -15 deg	≤ 800	
		7	Flash point	≥ 140 C	
		8	Pour point	≤ - 30 C	
		9	Density at 20 deg C - kg/dm3	≤ 0.895	
		10	Breakdown strength (kV)	to be completed by the tenderer	
		36	Thickness of transformer a) tank b) sides c) bottom	 Minimum 3 mm Minimum 3 mm Minimum 3 mm	
		37	Thickness of radiator plates and for cooling tube	mm	
		38	Noise level at 0.3 m distance	≤ 55 dB	
		39	Type of corrosion protection on steel parts a) Inside tank b) Outside tank	 Oil resistant paint Metalized, aluminum paint or equivalent	
		40	11 kV bushings		
		1	Name of manufacturer	to be completed by the tenderer	
		2	Make/Brand/Model	to be completed by the tenderer	
		3	Reference standard	IEC 60137	
		4	Type of bushing	to be completed by the tenderer	
		5	Rated current (Amp)	to be completed by the tenderer	
		6	Rated voltage (KV)	to be completed by the tenderer	
		7	Material	Porcelain	
		8	Color	Brown	
		9	Creepage distance (mm)	to be completed by the tenderer	
		41	L.V bushings		
		1	Name of manufacturer	to be completed by the tenderer	
		2	Make/Brand/Model:	to be completed by the tenderer	
		3	Reference standard	IEC 60137	
		4	Type of bushing	to be completed by the tenderer	
		5	Rated current (Amp)	to be completed by the tenderer	
		6	Rated voltage (KV)	to be completed by the tenderer	
		7	Material	Porcelain	
		8	Color	Brown	
		9	Creepage distance in (mm)	to be completed by the tenderer	
		42	Warranty period	two year	
		43	Submit type test certificates or reports:		
		44	Submit Detail drawings, drawings of HV and LV bushings, details of accessories, brochures and catalogues: