

AMENDMENT-01

TO

**TECHNICAL SPECIFICATION FOR FIRE WATER PUMPS ((HYDRANT, SPRAY
WATER, JOCKEY & BOOSTER PUMPS INCLUDING DRIVES), DOC. NO. PY-51282**

Dtd: 11.11.17

PROJECT :	2 X 660 MW ENNORE SEZ COAL BASED SUPERCRITICAL THERMAL POWER PROJECT AT ASH DYKE OF NCTPS
CUSTOMER :	TAMIL NADU GENERATION AND DISTRIBUTION CORPORATION (TANGEDCO)
CONSULTANT :	DESEIN PRIVATE LIMITED DESEIN HOUSE, GREATER KAILASH – II. NEW DELHI – 110 048

Amendment-01 to Technical Specification for Fire Water Pumps ((Hydrant, Spray Water, Jockey & Booster Pumps Including Drives), Doc. No. PY-51282.

Sl. No.	Section / Part/Subsection	Page No.	Clause No.	Actual Original Specification	Revised Clauses of Specification, Dtd: 11.11.17
1.	Scope of Supply	8 of 147	6.0-1-(i)	4 Nos. of Hydrant Water Pump [2 No. of Motor Driven & 2 No. for Engine Driven]	- HT Motors(03 Nos) are excluded from bidder Scope of Supply. However, bidder shall consider canopy with legs and other fixing accessories. Also suitable common base frame for pump and motor assembly shall be provided by bidder for mounting the HT motor at site. - HT Motors(03 Nos) shall be supplied by BHEL directly to site.
2.	Diesel Engine Control Panel	10 of 147	6.2.2.2	PLC based Diesel Engine Control panel meeting to the requirements of TAC for each engine shall be included in bidder scope of supply	- Relay Based control panel to meet the requirements of TAC shall be considered by bidder. 5 Nos of Kick Starts of Diesel Engine shall be envisaged in the panel. - Structural Steel for supporting structures of Control Panel is in purchaser scope. All fixing accessories for mounting control panel on the structure shall be included in bidder scope.
3.	Diesel Engine Fuel Tank	10 of 147	6.2.2.3	Level Switch along with the fuel tank.	Supply of Level Switch is excluded from bidder scope of supply. However, required nozzle (80NB, 150#) for mounting level switch shall be supplied by bidder. For Details refer Annexure-1, P&ID for Hydrant, Jockey and Booster Pumps.
4.	Bearing & winding instruments & JB for Pumps & Drives	13 of 147	6.10.1, 6.10.2, 6.10.3	Supply of RTD and Junction Box for HT Motor & Pump	RTD and Junction Box is not required and bidder shall not consider the same.
5.	Complete Unit Test	13 of 147	6.11	HT Motor and LT Motor	Hydrant and Spray Pump shall be tested by test bed motor (HT Motor), whereas Jockey Pump and Booster Pumps shall be tested by Job Motor (LT Motor).
6.	Commissioning Spares	13 of 147	6.14	For Hydrant- Spray Pump & Drives Assembly	Commissioning Spares required for HT Motors (for Hydrant and Spray Pump) are excluded from bidder scope of supply.
7.	Special Tools and Tackles	15 of 147	6.17	For Hydrant- Spray Pump & Drives Assembly	Special Tools and tackles required for HT Motors (for Hydrant and Spray Pump) are excluded from bidder scope of supply.

8.	Annexure-5A to PY-51282: Checklist For Offer For Hydrant Pump/ Spray Water Pump With Drives (Motor/Diesel Engine).	54 of 147	29	BoQ for Main Equipment: Refer 1.2 HT Motor(suitable rating) is included in bidders scope)	BoQ enclosed with this checklist is revised w.r.t HT Motor(Supply of these motors are excluded from Bidder's Scope as per S.No.1 above). The same is enclosed as Annexure-A to this amendment. Changes are marked in red and highlighted with yellow.
9.	Annexure-9: Sub-Vendor List	117 of 147	--	Sub-Vendor List shall be furnished later	Applicable Approved Sub-vendor List is enclosed as Annexure-B to this amendment.
10	Annexure-4A	45 of 147	--	Price Bid format for Hydrant and Spray Pumps with drives	Price bid Format is revised wrt HT Motor(Supply of these motors are excluded from Bidder's Scope as per S.No.1 above). The same is enclosed as Annexure-C to this amendment. Changes are marked in red.

Notes:

- Bidder to comply and meet all the requirements indicated above in conjunction with original Technical Specification and all its annexures.**
- Bidder to submit a stamped and signed copy of this Amendment including Annexure-A & B along with their offer.**

ANNEXURE A– REVISED BOQ - MAIN EQUIPMENT - BOQ OF FIRE WATER PUMPS(HYDRANT & SPRAY) ALONG WITH DRIVES(MOTOR & DIESEL ENGINE)
[TO AMENDMENT-01 TO TECHNICAL SPECIFICATION FOR FIRE WATER PUMPS]

MAIN EQUIPMENT - BOQ OF FIRE WATER PUMPS(Hydrant & Spray) along with Drives(Motor & Diesel Engine)					
SI No.	Item Description	UOM	Total Quantity (Per Pump and Drive Assembly)	Bidder has Considered in their offer [YES/NO]. Bidder to indicate their response YES/No in this Column. Important note: * No Deviation is allowed. Bidder to Mandatorily Consider this item in their offer except if item is not applicable or not available in the market. In such case bidder to justify in remarks column.	REMARKS (By Bidder)
1	Hydrant Pump-Motor Assembly: Horizontal Centrifugal type, Motor driven (410 M3/Hr.; 120 MWC, HT Motor, Base plate, Coupling, Coupling guard, foundation bolts etc.). For Details Refer Annexure-2A: Technical Datasheet for Pump and drive assembly, enclosed with Tender Specification, PY-51282	Set	1		
1.1	Pump	Nos.	1		
1.2	HT Motor(Suitable Rating) – Excluded from Bidder Scope of Supply	Nos.	1	Not in Bidder scope	
1.3	Common Base Frame for Pump & Motor Assembly	Nos.	1		
1.4	Mechanical Seal(1 set for each pump)	Nos.	1		
1.5	Flexi Metallic Spacer type coupling(1 no for each pump)	Sets	1		
1.6	Coupling guard along with bolts, nuts and gaskets	Nos.	1		
1.7	Motor Canopy(1 no for each motor)	Nos.	1		
1.8	Suitable Foundation Bolts with Nuts (8 nos for each assembly)	Sets	8		

1.9	Lugs and Glands for Motors	Sets	1		Cable size shall be informed during detailed engg stage
1.10	Vibration pads [Bidder to consider suitable nos]	Nos.			
1.11	Vent valve on pump	Nos.	1		
1.12	Suitable Concentric Reducer (Discharge side) with welded Flange and Counter Flange(Loose Supply) as per ANSI 16.5 #150. Details of Discharge Pipe Size are indicated in Annexure-1 of Tender Specification, PY 51282	Sets	1		
1.13	Suitable Concentric Reducer(Discharge side) with welded Flange and Counter Flange(Loose Supply) as per ANSI 16.5 #150. Details of Discharge Pipe Size are indicated in Annexure-1.	Sets	1		
1.14	Suitable Stud nuts and Bolts for suction flange	Set	1		
1.15	Suitable Stud nuts and Bolts for Discharge flange	Set	1		
1.16	Suitable Gaskets for suction flange	Set	1		
1.17	Suitable Gaskets for Discharge flange	Set	1		
1.18	Pump Casing Drain valve/plug	Nos.	1		
1.19	Base Frame Casing Drain valve/plug	Nos.	1		
1.20	SS piping for Flushing Plan	Sets	1		
2	Spray Pump-Motor Assembly: Horizontal Centrifugal type, Motor driven (410 M3/Hr.; 120 MWC, HT Motor, Base plate, Coupling, Coupling guard, foundation bolts etc.). For Details Refer Annexure-2A: Technical Datasheet for Pump and drive assembly, enclosed with Tender Specification, PY-51282	Set	1		
2.1	Pump	Nos.	1		
2.2	HT Motor(Suitable Rating) – Excluded from Bidder Scope of Supply	Nos.	1	Not in Bidder scope	
2.3	Common Base Frame for Pump & Motor Assembly	Nos.	1		
2.4	Mechanical Seal(1 set for each pump)	Nos.	1		
2.5	Flexi Metallic Spacer type coupling(1 no for each pump)	Sets	1		
2.6	Coupling guard along with bolts, nuts and gaskets	Nos.	1		
2.7	Motor Canopy(1 no for each motor)	Nos.	1		
2.8	Suitable Foundation Bolts with Nuts (8 nos for each assembly)	Sets	8		
2.9	Lugs and Glands for Motors	Sets	1		Cable size shall be informed during detailed engg stage

2.10	Vibration pads [Bidder to consider suitable nos]	Nos.			
2.11	Vent valve on pump	Nos.	1		
2.12	Suitable Eccentric Reducer(Suction side) with welded Flange and counter flange(loose supply) as per ANSI 16.5 #150. Details of Suction Pipe Size are indicated in Annexure-1.	Sets	1		
2.13	Suitable Concentric Reducer(Discharge side) with welded Flange and Counter Flange(Loose Supply) as per ANSI 16.5 #150. Details of Discharge Pipe Size are indicated in Annexure-1 of Tender Specification, PY 51282	Nos.	1		
2.14	Suitable Studnuts and Bolts for suction flange	Set	1		
2.15	Suitable Studnuts and Bolts for Discharge flange	Set	1		
2.16	Suitable Gaskets for suction flange	Set	1		
2.17	Suitable Gaskets for Discharge flange	Set	1		
2.18	Pump Casing Drain valve/plug	Nos.	1		
2.19	Base Frame Casing Drain valve/plug	Nos.	1		
2.20	SS piping for Flushing Plan	Sets	1		
3	Hydrant Pump-Engine Driven Assembly: Horizontal Centrifugal type, Engine driven Pump (410 M3/Hr.; 120 MWC), Diesel Engine, Base plate, Coupling, Coupling guard, foundation bolts etc. For Details Refer Annexure-2A: Technical Datasheet for Pump and drive assembly, enclosed with Tender Specification, PY-51282	Set	1		
3.1	Pump	Nos.	1		
3.2	Diesel Engine(Suitable Rating)	Nos.	1		
3.3	DC Motor(to start engine)	Nos.	1		
3.4	Sludge and Sediment Trap	Nos.	1		
3.5	Filter(for diesel pump)	Nos.	1		
3.6	Screwed plugs(for bleeding of air in diesel piping)	Sets	1		
3.7	Belts for engine	Sets	2		
3.8	Inlet valve & Exhaust valve	Sets	1		
3.9	Air filter	Nos.	1		
3.10	Governor	Nos.	1		
3.11	Complete set of engine-joints, gaskets and hoses	Sets	1		

3.12	Battery(12 V, 2 nos for each Engine)	Nos.	2		
3.13	Charger cum Control Panel(With Ammeter & Voltmeter) for Diesel Engine, Tank and Battery	Nos.	1		
3.14	Battery Selector Panel for Charging	Nos.	1		
3.15	Control Panel(integral of Engine)	Nos.	1		
3.16	Silencer for Diesel Engine	Nos.	1		
3.17	Insulation for Silencer	Sets	1		
3.18	Diesel Tank	Nos.	1		
3.19	Level Switch on Diesel Tank	Nos.	1	Not in Bidder scope	Only provision for mounting Level switch shall be provided by the bidder
3.20	Level Gauge on Diesel Tank	Nos.	1		
3.21	Electric Operated [Ex Proof] Barrel Unloading pump with discharge hose	Nos.	1		
3.22	Manual Operated Barrel Unloading pump with discharge hose	Nos.	1		
3.23	Common Base Frame for Pump & Engine Assembly	Nos.	1		
3.24	Mechanical Seal(1 set for each pump)	Nos.	1		
3.25	Flexi Metallic Spacer type coupling(1 no for each pump)	Sets	1		
3.26	Coupling guard along with bolts, nuts and gaskets	Nos.	1		
3.27	Suitable Foundation Bolts with Nuts (8 nos for each assembly)	Sets	8		
3.28	Vibration pads	Nos.			
3.29	Vent valve on pump	Nos.	1		
3.30	Suitable Studnuts and Bolts for suction flange	Set	1		
3.31	Suitable Studnuts and Bolts for Discharge flange	Set	1		
3.32	Suitable Gaskets for suction flange	Set	1		
3.33	Suitable Gaskets for Discharge flange	Set	1		
3.34	Pump Casing Drain valve/plug	Nos.	1		
3.35	Base Frame Casing Drain valve/plug	Nos.	1		
3.36	X" suitable pipe of length for exhaust of Diesel Engine	mtrs	15		
3.37	X" suitable elbows for exhaust pipe of Diesel Engine	Nos.	6		
3.38	NIL.				
3.39	Y" Pipe for interconnecting fuel tank to engine	mtrs	3		
3.40	Y" Elbows for interconnecting fuel tank to engine	Nos.	5		

3.41	Temperature indicator(contact type) in cooling water inlet & outlet	Nos.	2		
3.42	Temperature indicator in lubricating oil outlet from the oil cooler	Nos.	1		
3.43	Pressure Gauges(contact type) for lubricating oil system	Nos.	1		
3.44	Speed indicator	Nos.	1		
3.45	Running hour meter	Nos.	1		
3.46	Dip stick type lubricating oil sump	Nos.	1		
4	Spray Pump-Engine Driven Assembly: Horizontal Centrifugal type, Engine driven Pump (410 M3/Hr.; 120 MWC), Diesel Engine, Base plate, Coupling, Coupling guard, foundation bolts etc. For Details Refer Annexure-2A: Technical Datasheet for Pump and drive assembly, enclosed with Tender Specification, PY-51282	Set	1		
4.1	Pump	Nos.	1		
4.2	Diesel Engine(Suitable Rating)	Nos.	1		
4.3	DC Motor(to start engine)	Nos.	1		
4.4	Sludge and Sediment Trap	Nos.	1		
4.5	Filter(for diesel pump)	Nos.	1		
4.6	Screwed plugs(for bleeding of air in diesel piping)	Sets	1		
4.7	Belts for engine	Sets	2		
4.8	Inlet valve & Exhaust valve	Sets	1		
4.9	Air filter	Nos.	1		
4.10	Governor	Nos.	1		
4.11	Complete set of engine-joints, gaskets and hoses	Sets	1		
4.12	Battery(12 V, 2 nos for each Engine)	Nos.	2		
4.13	Charger cum Control Panel(With Ammeter & Voltmeter) for Diesel Engine, Tank and Battery	Nos.	1		
4.14	Battery Selector Panel for Charging	Nos.	1		
4.15	Control Panel(integral of Engine)	Nos.	1		
4.16	Silencer for Diesel Engine	Nos.	1		
4.17	Insulation for Silencer	Sets	1		
4.18	Diesel Tank	Nos.	1		
4.19	Level Switch on Diesel Tank	Nos.	1	Not in Bidder scope	Only provision for mounting Level

					switch shall be provided by the bidder
4.20	Level Gauge on Diesel Tank	Nos.	1		
4.21	Electric Operated [Ex Proof] Barrel Unloading pump with discharge hose	Nos.	1		
4.22	Manual Operated Barrel Unloading pump with discharge hose	Nos.	1		
4.23	Common Base Frame for Pump & Engine Assembly	Nos.	1		
4.24	Mechanical Seal(1 set for each pump)	Nos.	1		
4.25	Flexi Metallic Spacer type coupling(1 no for each pump)	Sets	1		
4.26	Coupling guard along with bolts, nuts and gaskets	Nos.	1		
4.27	Suitable Foundation Bolts with Nuts (8 nos for each assembly)	Sets	8		
4.28	Vibration pads [Bidder to consider suitable nos]	Nos.			
4.29	Vent valve on pump	Nos.	1		
4.30	Suitable Studnuts and Bolts for suction flange	Set	1		
4.31	Suitable Studnuts and Bolts for Discharge flange	Set	1		
4.32	Suitable Gaskets for suction flange	Set	1		
4.33	Suitable Gaskets for Discharge flange	Set	1		
4.34	Pump Casing Drain valve/plug	Nos.	1		
4.35	Base Frame Casing Drain valve/plug	Nos.	1		
4.36	X" suitable pipe for exhaust of Diesel Engine	mtrs	15		
4.37	X" suitable elbows for exhaust pipe of Diesel Engine	Nos.	6		
4.38	NIL				
4.39	Y" Pipe for interconnecting fuel tank to engine	mtrs	3		
4.40	Y" Elbows for interconnecting fuel tank to engine	Nos.	5		
4.41	Temperature indicator(contact type) in cooling water inlet & outlet	Nos.	2		
4.42	Temperature indicator in lubricating oil outlet from the oil cooler	Nos.	1		
4.43	Pressure Gauges(contact type) for lubricating oil system	Nos.	1		
4.44	Speed indicator	Nos.	1		
4.45	Running hour meter	Nos.	1		
4.46	Dip stick type lubricating oil sump	Nos.	1		

COMMISSIONING SPARES - BOQ OF FIRE WATER PUMPS(Hydrant & Spray) along with Drives(Motor & Diesel Engine)

Sl No.	Item Description	UOM	Total Quantity (Per Pump and Drive Assembly)	Bidder has Considered in their offer [YES/NO]. Bidder to indicate their response YES/No in this Column. Important note: * No Deviation is allowed. Bidder to Mandatorily Consider this item in their offer except if item is not applicable or not available in the market. In such case bidder to justify in remarks column.	REMARKS (By Bidder)
1	Hydrant Pump-Motor Assembly: Commissioning Spares				
1.1	Commissioning spares as per manufacturer's recommendation. Minimum 1 Set of O rings & gaskets, for each pump & 1 Set of Commissioning spares for drive as per Manufacturer recommendation. 1 set stands for requirement for one no. of pump/drive assembly Bidder to furnish the list along with the offer – Commissioning Spares for HT Motor are Excluded from Bidder Scope of Supply.	Set	1		
2	Spray Pump-Motor Assembly: Commissioning Spares				
2.1	Commissioning spares as per manufacturer's recommendation. Minimum 1 Set of O rings & gaskets, for each pump & 1 Set of Commissioning spares for drive as per Manufacturer recommendation. 1 set stands for requirement for one no. of pump/drive assembly Bidder to furnish the list along with the offer – Commissioning Spares for HT Motor are Excluded from Bidder Scope of Supply.	Set	1		
3	Hydrant Pump-Diesel Engine Assembly: Commissioning Spares				
3.1	Commissioning spares as per manufacturer's recommendation. Minimum 1 Set of O rings & gaskets, for each pump & 1 Set of Commissioning spares for drive as per Manufacturer recommendation. 1 set stands for requirement for one no. of pump/drive assembly Bidder to furnish the list along with the offer	Set	1		
4	Spray Pump-Diesel Engine Assembly: Commissioning Spares				

4.1	Commissioning spares as per manufacturer's recommendation. Minimum 1 Set of O rings & gaskets, for each pump & 1 Set of Comissioning spares for drive as per Manufacturer recommendation. 1 set stands for requirement for one no. of pump/drive assembly Bidder to furnish the list along with the offer	Set	1		
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SPECIAL TOOLS AND TACKLES - BOQ OF FIRE WATER PUMPS(Hydrant & Spray) along with Drives(Motor & Diesel Engine)					
SI No.	Item Description	UOM	Total Quantity (Per Pump and Drive Assembly)	Bidder has Considered in their offer [YES/NO]. Bidder to indicate their response YES/No in this Column. Important note: * No Deviation is allowed. Bidder to Mandatorily Consider this item in their offer except if item is not applicable or not available in the market. In such case bidder to justify in remarks column.	REMARKS (By Bidder)
1	Hydrant Pump-Motor Assembly: Commissioning Spares				
1.1	Special tools & tackles as per manufacturer's recommendations. 1 set stands for requirement for each pump, drive and other accessories. Bidder to furnish the list along with offer. Special Tools and Tackles for HT Motor Excluded from Bidder Scope of Supply.	Set	1		
2	Spray Pump-Motor Assembly: Commissioning Spares				

2.1	Special tools & tackles as per manufacturer's recommendations. 1 set stands for requirement for each pump, drive and other accessories. Bidder to furnish the list along with offer. Special Tools and Tackles for HT Motor Excluded from Bidder Scope of Supply.	Set	1		
3	Hydrant Pump-Diesel Engine Assembly: Commissioning Spares				
3.1	Special tools & tackles as per manufacturer's recommendations. 1 set stands for requirement for each pump, drive and other accessories. Bidder to furnish the list along with offer.	Set	1		
4	Spray Pump-Diesel Engine Assembly: Commissioning Spares				
4.1	Special tools & tackles as per manufacturer's recommendations. 1 set stands for requirement for each pump, drive and other accessories. Bidder to furnish the list along with offer.	Set	1		

SIGNATURE:

NAME:

DESIGNATION:

COMPANY:

DATE:

ANNEXURE-B APPROVED VENDOR LIST		
[TO AMENDMENT-01 TO TECHNICAL SPECIFICATION FOR FIRE WATER PUMPS]		
	Item	Vendor Name
	Vendor Name	
1	LIQUID LEVEL GAUGES	D.K.INSTRUMENTS (P) LTD.,
		LEVCON INSTRUMENTS(P) LTD
		GAUGES BOURDON INDIA
		NISAN SCIENTIFIC PROCESS
		PUNE TECHTROL PVT LTD
		CHEMTROLS INDUSTRIES PVT LTD.
		PRATOLINA INSTRUMENTS PVT.LTD.
		TECNOMATIC (INDIA) PRIVATE LIMITED,
		SCIENTIFIC DEVICES (BOMBAY) PVT. LT
		BLISS ANAND PVT. LTD.,
		IGEMA GmbH
2	PRESSURE GAUGES	FORBES MARSHALL (HYD) PVT LIMITED,
		PRECISION MASS PRODUCTS PVT LTD
		H.GURU INSTRUMENTS(S.I)PVT.LTD
		WALCHANDNAGAR INDUSTRIES LIMITED
		SCIENTIFIC DEVICES (BOMBAY) PVT. LT
		BAUMER TECHNOLOGIES
		GAUGES BOURDON INDIA
		A.N. INSTRUMENTS PVT. LTD.,
		PROTECH CONTROL INSTRUMENTS
3	TEMPERATURE TRANSMITTER	EMERSON PROCESS MGT (I) PVT LTD
		ABB INDIA LIMITED HYD
		YOKOGAWA INDIA LIMITED
		HONEYWELL AUTOMATION INDIA LIMITED
4	RESISTANCE TEMPERATURE DETECTORS (RTD & THERMOCOUPLES)	PROTECH CONTROL INSTRUMENTS
		TEMPSENS INSTRUMENTS (I) PVT.LTD.
		THERMAL INSTRUMENT INDIA
		GAUGES BOURDON INDIA
		EXOTHERM INSTRUMENTS
		DETRIV INSTRUMENTATION
		BAUMER TECHNOLOGIES
		PRECISION MASS PRODUCTS PVT LTD
		PYRO ELECTRIC INSTRUMENTS GOA
		GOA INSTRUMENTS INDUSTRIES
5	LIQUID LEVEL FLOAT SWITCH	MAGNETROL INTERNATIONAL, INC.
		V AUTOMAT AND INSTRUMENTS PVT LTD
		IGEMA GmbH
		SCIENTIFIC DEVICES (BOMBAY) PVT. LT
		CHEMTROLS INDUSTRIES PVT LTD.
		PUNE TECHTROL PVT LTD
		GAUGES BOURDON INDIA
		LEVCON INSTRUMENTS(P) LTD
		D.K.INSTRUMENTS (P) LTD.,
6	PRESSURE AND DIFFERENTIAL PRESSURE SWITCHES	INDFOS INDUSTRIES LIMITED,
		PRECISION MASS PRODUCTS PVT LTD
		TRAFAG CONTROLS INDIA PVT LTD
		BAUMER TECHNOLOGIES
		HIRLEKAR PRECISION ENGG. PVT. LTD.
		KAUSTUBHA UDYOG
		GAUGES BOURDON INDIA
		SWITZER PROCESS INSTRUMENTS
7	INSTRUMENT HOOK UP MATERIAL PACKAGE	Vipal Enterprises Pvt.Ltd.
		SWASTIK ENGINEERING WORKS
		PANAM ENGINEERS PVT. LTD.
		DYNAFLUID VALVES AND FLOW CONTROLS
		P.K. TUBES & FITTINGS PVT. LTD.
		TRUE FAB ENGINEER (P) LTD.
		TRUE FORGE PVT.LTD.,
		U I PIPE FITTINGS PVT. LTD.
		CARLO DYNATECH INDUSTRIES,
		PRESHZINGER ENGINEERING
		UNIQUE ENGINEERING ENTPS. PVT. LTD.
		KWALITY FORGED FITTINGS
8	GASKETS	GOODRICH GASKET PVT. LTD.
		MADRAS INDUSTRIAL PRODUCTS,
		I G P ENGINEERS LIMITED,
		TEEKAY FLOWFLEX PVT. LTD.
		UNI KLINGER LTD.
		UNIQUE INDUSTRIAL PACKINGS PVT. LTD
		JAMES WALKER INMARCO INDS PVT LTD
		STARFLEX SEALING INDIA PVT. LTD.
		JYOTHI INDUSTRIES,
9	FLANGES	KUNJ FORGINGS PVT. LTD.
		C.D.ENGINEERING CO.
		KISAAN STEELS (PVT) LTD.,
		CHW FORGE PRIVATE LIMITED
		C.D. INDUSTRIES,
		MAHESH INDUSTRIES
		NAV DURGA FORGING AND FITTINGS
		TRUE FORGE PVT.LTD.,
		PIPEFIT ENGINEERS PVT. LTD.
		TUBE PRODUCTS INCORPORATE
		METAL FORGINGS P. LTD.

		THE PUNJAB STEEL WORKS.
		PRESHZINGER ENGINEERING
		UNIQUE ENGINEERING ENTPS. PVT. LTD.
10	BATTERY CHARGER	AMARA RAJA POWER SYSTEMS LTD
		VERTIV ENERGY PRIVATE LIMITED
		HBL POWER SYSTEMS LTD
		HITACHI HI-REL POWER
		SERVILINK ENGINEERS PVT. LTD.
		KERALA STATE ELECTRONICS
		DUBAS ENGINEERING PVT LTD.
		CHHABI ELECTRICALS P LTD.
		MASS-TECH CONTROLS PVT. LTD.
		STATCON POWER CONTROLS LTD.
		CHLORIDE POWER SYSTEMS &
11	LT MOTORS (SAFE AREA)	SIEMENS INDIA LTD SECBAD.
		GE T&D INDIA LIMITED
		ABB INDIA LIMITED, HYD
		KIRLOSKAR ELEC.CO.LTD
		LAXMI HYDRAULICS PVT. LTD.
		BHARAT BIJLEE LTD, MUMBAI
		CROMPTON GREAVES
12	LEAD ACID STORAGE BATTERY	EXIDE INDUSTRIES LIMITED
		HBL POWER SYSTEMS LTD
		HOPPECKE BATTERIEN GMBH & CO KG
13	DIESEL ENGINE(REFER NOTE-1)	GREAVES COTTON, PUNE
		CUMMINS, KOTHRUD/VIMAN NAGAR
		CATERPILLAR/USA
		ASHOKLEYLAND, CHENNAI
		KOEL, PUNE
14	LOCAL CONTROL PANEL FOR DIESEL ENGINE(REFER NOTE-1)	JASPER, GURGOAN
		KMG A TOZ, NOIDA
		C&S, NOIDA/HARIDWAR
		ICA, MUMBAI
		ISC, MUMBAI
		PYROTECH, UDAIPUR
		ANAND CONTROL, NOIDA
		VIDUT CONTROL, GHAZIABAD
		VENUS, MUMBAI
		ACHUYUT
15	CABLE GLANDS (WEATHER PROOF/EX.PROOF)	ELECTROMAC INDUSTRIES
		FCG FLAMEPROOF CONTROL GEARS
		FLAMEPROOF EQUIPMENTS PVT.LTD.
		PROMPT ENGINEERING WORKS, MUMBAI
		FCG POWER INDUSTRIES
		FLEXPRO ELECTRICALS PVT. LTD.,
		UNITED AGRO ENGINEERING PVT. LTD.
16	CABLE LUGS & CRIMPING TOOLS	AUTOMIC ELECTRIC &
		CHETNA ENGINEERING CO.
		ELECTROMAC INDUSTRIES
		FORWARD ENGINEERING INDUSTRIES

NOTES:

1. The sub-vendors indicated are minimum. However bidder may follow any other reputed vendors with due approval of purchaser by submitting their credentials.

2. In case of any specific practical difficulty, bidder is requested to bring out the same with proper reason for not following vendor list. For other items for which sub vendors are not specified, bidder can follow their standard vendors.

However, they have to ensure the Proven Track record of the sub vendors and Bidder to take prior approval of BHEL for the same.

Annexure-C to Amend-01
Revised, Rev01

	BHARAT HEAVY ELECTRICALS LIMITED R.C.PURAM, HYDERABAD-502032				
PROJECT ENGINEERING & SYSTEMS DIVISION					
PRICE FORMAT (R00) FOR HYDRANT AND SPRAY WATER PUMP WITH DRIVES (MOTOR & DIESEL ENGINE)[Annexure-4A to Doc. No.PY-51282] FOR PROJECT: 2X660 MW ENNORE SEZ PROJECT CUSTOMER: TAMILNADU GENERATION AND DISTRIBUTION CORPORATION CONSULTANT: DESEIN, NEW DELHI					
SL NO	ITEM DESCRIPTION	QTY	UNIT	UNIT RATE (RS.)	TOTAL (RS.)
Bidder's Name : <Bidder to indicate> Bidder's Offer No. & Dt. : <Bidder to indicate> Bidder's Ref No. & Dt. :<Bidder to indicate> BHEL Enq. No. & date :<Bidder to indicate>					
I	MAIN OFFER [Note:Prices for individual items to be quoted as indicated in the price bid format.]				
A	MATERIAL SUPPLY: HYDRANT-SPRAY WATER PUMP WITH MOTOR				
A.1	Hydrant water Pump along with drive motor assembly complete with all accessories as per specification. HT Motors are excluded from Bidder Scope of Supply.	2	Set		
A.2	Spray water Pump along with drive motor assembly complete with all accessories as per specification - HT Motor is excluded from Bidder Scope of Supply.	1	Set		
A.3	Commissioning Spares-Hydrant water Pump				
	Commissioning spares as per manufacturer's recommendation. Minimum 1 Set of O rings & gaskets, for each pump & 1 Set of Commissioning spares for drive as per Manufacturer recommendation. 1 set stands for requirement for one no. of pump/drive assembly Bidder to furnish the list along with the offer. (Ref. Note-7) Commissioning Spares for HT Motors are excluded from Bidder Scope of Supply.	2	Set		
A.4	Commissioning Spares-Spray water Pump				
	Commissioning spares as per manufacturer's recommendation. Minimum 1 Set of O rings & gaskets, for each pump & 1 Set of Commissioning spares for drive as per Manufacturer recommendation. 1 set stands for requirement for one no. of pump/drive assembly Bidder to furnish the list along with the offer. (Ref. Note-7) Commissioning Spares for HT Motor is excluded from Bidder Scope of Supply.	1	Set		
B	MATERIAL SUPPLY: HYDRANT-SPRAY WATER PUMP WITH DIESEL ENGINE				
B.1	Hydrant water pump along with Diesel Engine Complete with all accessories as per specification.	2	Set		
B.2	Spray water pump along with Diesel Engine Complete with all accessories as per specification.	1	Set		
B.3	Commissioning spares-Hydrant water Pump				
	Commissioning spares as per manufacturer's recommendation. Minimum 1 Set of O rings & gaskets, for each pump & 1 Set of Commissioning spares for drive as per Manufacturer recommendation. 1 set stands for requirement for one no. of pump/drive assembly Bidder to furnish the list along with the offer. (Ref. Note-7)	2	Set		
B.4	Commissioning spares-Spray water Pump				
	Commissioning spares as per manufacturer's recommendation. Minimum 1 Set of O rings & gaskets, for each pump & 1 Set of Commissioning spares for drive as per Manufacturer recommendation. 1 set stands for requirement for one no. of pump/drive assembly Bidder to furnish the list along with the offer. (Ref. Note-7)	1	Set		
C	Special tools & tackles				
C.1	Special tools & tackles for Pump and Motor				

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SL NO	ITEM DESCRIPTION	QTY	UNIT	UNIT RATE (RS.)	TOTAL (RS.)
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	Special tools & tackles as per manufacturer's recommendations. 1 set stands for requirement for each pump, drive and other accessories. Bidder to furnish the list along with offer. Special Tools and Tackles for HT Motors are excluded from Bidder Scope of Supply.	1	Set		
C.2	Special tools & tackles for Pump and Diesel Engine				
	Special tools & tackles as per manufacture recommendations. 1 set standas for requirement for each pump, drive and other accessories. Bidder to furnish the list along with offer.	1	Set		
D	MANDATORY SPARES: Note:Prices for individual items to be quoted as indicated in the price bid format.[Refer Note 8]				
D.1	For Hydrant & Spray Pump:				
1	IMPELLER	1 NO. OF EACH TYPE AND SIZE	No.		
2	PUMP BEARINGS	1 NO. OF EACH TYPE AND SIZE	No.		
3	PUMP SHAFT	1 NO. OF EACH TYPE AND SIZE	No.		
4	BEARING RINGS	2 SET. OF EACH TYPE AND SIZE	Sets		
5	SHAFT SLEEVES	2 SET. OF EACH TYPE AND SIZE	Sets		
6	BUSHINGS	2 SET. OF EACH TYPE AND SIZE	Sets		
7	BEARING HOUSING (IF PROVIDED)	2 SET. OF EACH TYPE AND SIZE	Sets		
8	COUPLING AND NUTS (WITH BUSHES)	2 SET. OF EACH TYPE AND SIZE	Sets		
D.2	For Diesel Engine of Hydrant & Spray Pump:				
1	FUEL INJECTION NOZZLE	2 SET. OF EACH TYPE AND SIZE	Sets		
2	PISTON RING	1 COMPLETE SET FOR EACH CYLINDER.	Set		
3	FUEL FILTERS ELEMENTS AND SEALS	2 SETS	Sets		
4	LUBRICATING OIL FILTER ELEMENTS & SEALS	2 SETS	Sets		
5	ENGINE JOINTS, GASKETS AND HOSES	1 SETS	Set		
6	INLET VALVE	1 NO.	No.		
II	Optional Items				
E	Supervision charges for erection & commissioning at site				
E.1	Per diem rate for the supervision of Erection & commissioning of Hydrant-Spray Pump [Refer Note 12]	12	Days		
E.2	Travel expenses (inclusive of all other charges like visa fee (if applicable), insurance etc) from / to vendor works to site for Engineer per visit for supervision of erection & commissioning of Hydrant-spray Pump [Refer Note 12]	6	Visit		
E.3	Per diem rate for the supervision of Erection & commissioning of Motor for Hydrant-spray Pump[Motor driven] [Refer Note 10] - Supervision of E&C for HT Motors excluded from Bidder's Scope	6	Days		

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E.4	Travel expenses (inclusive of all other charges like visa fee (if applicable), insurance etc) from / to vendor works to site for Engineer per visit for supervision of erection & commissioning of Motor for Hydrant-Spray Pump[Motor driven][Refer Note 12]. Supervision of E&C for HT Motors excluded from Bidder's Scope	3	Visit		
E.5	Per diem rate for the supervision of Erection & commissioning of Diesel engine of Hydrant-Spray Pump(Diesel Engine driven) [Refer Note 12]	6	Days		
E.6	Travel expenses (inclusive of all other charges like visa fee (if applicable), insurance etc) from / to vendor works to site for Engineer per visit for supervision of erection & commissioning of Diesel Engine for Hydrant-Spray(Diesel Engine driven) [Refer Note 12]	3	Visit		
F	2 Years Recommended Spares				
	Recommended spares list for two years normal operation along with unit price breakup for Pump, Drives & other accessories. (List with price break up to be enclosed) (1 set stands for quantity required for the replacement of one pump, drive (or) accessories)	As per List	Set		
	TOTAL				
Notes:					
1) Bidder to quote strictly as per BHEL's NIT requirements.					
2) Bidder to note that this is a LUMP SUM Turn-Key Order. However (a) Changes to the tender specification during execution of the project for successful operation of the system need to be carried out by bidder and commercial implications if any will be settled suitably. (b) Unit rates quoted by bidder shall be applicable for any changes in BOQ during detailed engineering stage.					
3) Main offer consists of those items which will be part of main order after successful bidder is identified. Optional Items consists of those items which need to be quoted by bidder but may or may not be ordered by BHEL. Bidders are instructed to provide the pricing details listed under Main offer and Optional items as per the prescribed format.					
4) Prices quoted by bidders for items under main offer : Sl. No. I [A to D] will be considered for evaluation of lowest bidder. However, BHEL reserves the right (a) To include any of the optional items in scope of supply (as per customer contract requirements) and accordingly consider the same in evaluation. Any such scope increase and change in evaluation will be intimated to vendor during technical evaluation(before price bid opening). (b) To place PO for any of the Optional items with in the contract period. Hence bidders need to mandatorily quote reasonable prices for all optional items considering such requirement and keep the validity of the prices till the end of contract period.					
5.a) For all items including Optional items, prices to be furnished in this prescribed price bid format only for each individual item. No combined prices, common prices or any other format will be accepted and such bids may be liable for rejection. 5.b) Bidder must not change the indicated item description, quantity & units in the price bid format. Bidder should only fill the unit rates & total price. 5.c) Bidder to quote for all the items as per price bid format. Incomplete/partial offer may be liable for rejection.					
6) Bidder to quote the base rates only. All other commercial charges for packing, freight, transportation, insurance, taxes & duties etc., shall be indicated separately.					
7 a.) Commissioning spares are those spares which are required at the time of commissioning and shall be recommended(as per bidders experience) and quoted by bidder. However commissioning spares indicated in the price bid format shall be quoted as minimum. 7.b) Commissioning spare consumed over and above the recommended commissioning spares, during commissioning shall be supplied free of cost by the equipment vendor.					

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8)With respect to Mandatory Spares; A) If any of above items indicated by the specified name are not applicable, bidder to offer alternative item serving the same function as per equipment's design and indicate below the item being replaced. B) If bidder is not able to meet the above note, then bidder may mention "Not Applicable". However, if found applicable during detailed engg. stage or alternative item as per equipment design can serve the same function, bidder to supply the specified quantity with out any delivery and commercial implications to BHEL.					
9) Reference document: BHEL Specification PY51282 R00 & all its annexures.					
10) Unpriced price bid format indicating as quoted against each applicable item shall be submitted duly signed & stamped along with technical offer by bidder as a token of concurrence that prices are submitted in this format only. The offer shall be liable for rejection in case if un-priced price bid format is not submitted or any modification is carried out in price bid format.					
11) In case the systems are being supplied from outside India, reputed Third Party Inspection like Llyods or equivalent has to be considered and the charges should be included in the Main offer. For those bidders who are supplying from India, such third party inspection charges need not be considered and same will be arranged by BHEL/BHEL nominated inspection agency.					
12) With respect to Supervision charges,Optional prices to be quoted by bidder & the same shall be considered for L1 bidder evaluation. Referring to SI no E.1 TO E.2, Hydrant-Spray water pump, For the purpose of Quotation, total no of 12 man days for Pump will be covered in 6 visits [1 visit for each pump] have been considered. payment against SI.No D.1 TO D.2 above shall be made as per the actual number of visits and man days required for the supervision of the complete E&C activities as per these diem rates. Referring to SI no E.3 TO E.4, Motor , For the purpose of Quotation, total no of 6 man days for Motor will be covered in 3 visits [1 visit for each motor] have been considered. Payment against SI.No E.3 TO E.4 above shall be made as per the actual number of visits and man days required for the supervision of the complete E&C activities as per these diem rates. Referring to SI no E.5 TO E.6, Diesel Engine , For the purpose of Quotation, total no of 6 man days for Diesel Engine will be covered in 3 visits [1 visit for each Diesel Engine] have been considered. Payment against SI.No E.5 TO E.6 above shall be made as per the actual number of visits and man days required for the supervision of the complete E&C activities as per these diem rates. Purchase Order for supply of main items, (A to D) shall be placed by BHEL-Hyderabad. For Supervision of E&C,LOI shall be placed by PE&SD- and PO By BHEL PSSR.					