



BHARAT HEAVY ELECTRICALS LIMITED/PEM-NOIDA

Corrigendum-5

PROJECT: 4X270 MW BHADRADRI TPS

Date: 19.09.2017

PACKAGE: EFFLUENT TREATMENT PLANT

ENQUIRY NO: E-5669/2017 Dtd. 04.08.2017

Dear all,

Please note the following.

1. Due date of tender submission is now extended from 19/09/2017 (02:00 pm) to 05/10/2017 till 2:00 pm and P1 shall be opened on 05/10/2017 at 3:00 pm.
2. Pre-bid queries of vendors are attached along with corrigendum-5.
3. Price format along with HSN code/SAC no is attached. Bidders shall follow the same and submit their priced and unpriced offer as per new attached price format only.
4. Bidders (who had already submitted their offer) are requested to review their offer once again and should incorporate all the necessary amendments, revisions updated over website till date. It should be complete in all respect.

Kindly ensure submission of offer on or before due date and time.

GURU DAS
DY.MGR/BOP-Ordering

PRICE FORMAT FOR INDIAN BIDDERS FOR ETP OF 4X270 MW BHADRADRI TPS																				
NAME OF PACKAGE:		EFFLUENT TREATMENT PLANT		SUPPLY							SERVICES							GRAND TOTAL		
TECHNICAL SPECIFICATION:		PE-TS-411-164-A001		HSN Code/ Service Activity No. (To be filled by the bidder)	UNIT	QTY	Unit Ex-works (INR) including of packing and forwarding	Total Ex-works (INR) including of packing and forwarding	GST@ %	GST in INR	Type of GST (CGST + SGST/UTGST) or IGST	TOTAL SUPPLY PRICE INCLUDING GST (INR)	SAC NO FOR SERVICE S	TOTAL E&C CHARGE S (INR)	Freight (INR)	TOTAL OF E&C and freight	GST @% ON E&C and freight (INR)(GST on freight shall be same as GST on E&C)	GST in INR	TOTAL E&C CHARGES and Freight INCLUDING GST (INR)	TOTAL LUMP SUM PRICE FOR SUPPLY AND E&C WITH GST (INR)
S. No.	DESCRIPTION			1	2	3	4	5=3*4	6	7=3+5	8	9	10	11=9+10	12	13=11*12	14	15=7+14		
1.0	Total lump sum firm price inclusive of all prevailing taxes, duties and other levies for SUPPLY PART , SERVICES PART & MANDATORY SPARES comprising of design (i.e. preparation and submission of drawing/ documents including " As Built " drawings and O&M Manuals) , engineering, manufacture, fabrication, assembly, inspection / testing at vendor's & sub-vendor's works, painting, maintenance tools & tackles (as applicable), fill of lubricants & consumables, chemicals as specified, mandatory spares alongwith spares for erection ,startup and commissioning as required, forwarding, proper packing, shipment and delivery at site,unloading, handling, transportation & storage at site, in site transportation, assembly, minor civil works, erection & commissioning, trial run at site, preparation of drawings in 3D (if applicable) and carrying out performance guarantee /Functional / Demonstration tests at site (As applicable), training of customer/ client O&M staff (if applicable) & final handing over to end customer in flawless condition for project and package specified above complete with all accessories for the total scope defined as per BHEL NIT & tender technical specification, amendment & agreements till placement of order.	8421 2190	Set	1								999433								
2.0	MAJOR BREAK-UP OF PRICES GIVEN IN 1.0 ABOVE.																			
2.1	Total lump sum firm price inclusive of all prevailing taxes, duties and other levies for SUPPLY PART comprising of design (i.e. Preperation and submission of drawing/ documents including " As Built " drawings and O&M Manuals) , engineering, manufacture, fabrication, assembly, inspection / testing at vendor's & sub-vendor's works, painting, maintenance tools & tackles (as applicable),fill of lubricants & consumables, chemicals as specified, alongwith spares for erection , startup and commissioning as required, forwarding, proper packing, shipment and delivery at site, preperation of drawings in 3D (if applicable) for project and package specified above complete with all accessories for the total scope defined as per BHEL NIT & tender technical specification, amendment & agreements till placement of order.	8421 2190	Set	1																
2.2	Total lump sum firm price inclusive of all prevailing taxes, duties and other levies for the SERVICES PART comprising of unloading, handling, transportation & storage at site, in site transportation, assembly, minor civil works, erection & commissioning, final painting at site, trial run at site and carrying out performance guarantee /Functional / Demonstration tests at site (As applicable), training of customer/ client O&M staff (if applicable) & final handing over to end customer in flawless condition for project and package specified above complete with all accessories for the total scope defined as per BHEL NIT & tender technical specification, amendment & agreements till placement of order.	NA	Set	1								999433								
2.3	Total lumpsum firm price inclusive of all prevailing taxes, duties and other levies for Mandatory spares comprising of manufacture, fabrication, assembly, inspection / testing (as applicable) at vendor's & sub-vendor's works, painting, forwarding, proper packing, shipment, delivery at site & guarantee as per tender technical specification above, amendment & agreements till placement of order. (Price break up of mandatory spares is to be furnished as per Annexure- I).	8421 2190	Lot	1																
Points for consideration before filling above price schedule-																				
1.PRICES SHALL BE FIRM UNLESS OTHERWISE SPECIFICALLY INDICATED IN NIT .																				
2. Vendor to mention HSN Code in specific Column .																				
3. In case of discrepancy in GST rate corresponding to HSN code and quoted GST, the evaluation shall be done on quoted price and correct GST rate shall be considered for ordering (limited to quoted FOR Site price)																				
4. Unless the context requires otherwise, in all tenders and tender related documents any reference to taxes such as ED, CST/VAT, Services. Tax etc. shall refer to GST as implemented by GOI w.e.f. 1.07.2017.																				
5. CGST/SGST/UGST/GST shall be paid at actuals against documentary evidence but restricted to the amount and percentage in the order/contract.																				
6. In case, any GST credit is delayed/denied to BHEL due to non/delayed receipt of goods and/or tax invoice or expiry to timeline prescribed in the relevant Act for availing such ITC, or any other reasons not attributable to BHEL, tax amount shall be recoverable from the vendor/contractor along with interest levied/leviable on BHEL.																				
7. All taxes and duties other than CGST/SGST/UGST/GST shall be deemed to be included in the Ex-Works prices unless specified otherwise by the bidder in the price bid. No variation in other taxes and duties shall be payable by Purchaser.																				
8. Evaluation shall be done on the basis of total lump sump prices for complete supply and services.																				
9. Vendor to quote prices in words also.																				
10.Nature of GST on Services at project site shall not be allowed to change after bidding.																				
11. In case of discrepancy in GST rate corresponding to HSN code and quoted GST, the evaluation shall be done on quoted price and correct GST rate shall be considered for ordering (limited to quoted FOR Site price)																				
12.Bidder to note that GST rate on freight shall be same as GST rate on E&C																				
13. Total Ex-Works quoted for supply should be the same as total quoted in Annexure-I. In case of any discrepancy in total ex-works, lower total price (item wise breakup adjusted accordingly) will be considered for evaluation as well as ordering.																				
Particulars of bidder / authorised representative																				
Name	Designation	Signature	Date	Company Seal																

ANNEXURE-I LIST OF MANDATORY SPARES				Doc No:	PE-PF-411-164-A001					
				Rev No:						
				Date of issue						
NAME OF PROJECT:				4X270 MW BHADRADRI TPS						
NAME OF PACKAGE:				EFFLUENT TREATMENT PLANT						
TECHNICAL SPECIFICATION:				PE-TS-411-164-A001						
S. N.	DESCRIPTION	UNIT	QTY	HSN Code	unit exworks price (INR)	Total Ex-works duly packed (INR)	GST Rate %	GST (INR)	Type of GST (IGST/CGST + SGST/UTGST)	
1	VERTICAL SUMP PUMPS – (FOR EACH TYPE AND SIZE)			8421 2190						
i	Complete Casing including suction (if applicable) bell	Set	1							
ii	Impeller	Set	1							
iii	Impeller key	Number	1							
iv	Wearing rings (Impeller & Casing ; as applicable)	Set	2							
v	Impeller Shaft, line shaft and head shaft	Set	1							
vi	Shaft Sleeves	Set	2							
vii	Stuffing box	Set	1							
viii	Coupling between Pump & motor, bushes, pins with all fasteners & coupling Guards.	Set	1							
ix	Line Shaft Couplings (if applicable)	Set	1							
x	Impeller, Line and Head shaft bearings (as applicable)	Set	1							
xi	Gland Packing & Gland Assembly	Set	1							
xii	Mechanical seal as applicable	Set	1							
2	HORIZONTAL CENTRIFUGAL PUMPS (FOR EACH TYPE AND SIZE)									
i	Impeller for each type	Set	1							
ii	Wearing rings – Impeller for each type (if applicable)	Set	1							
iii	Wearing rings – Casing for each type (if applicable)	Set	1							
iv	Shaft for each type	Set	1							
v	Shaft Sleeves for each type	Set	1							
vi	Stuffing box for each type	Set	1							
vii	Coupling between Pump & motor, bushes, pins with all fasteners & coupling Guards	Set	1							
viii	Pump bearings for each type	Set	1							
ix	Gland Packing & Gland Assembly for each type	Set	1							
x	Mechanical seal as applicable	Set	1							
xi	Impeller key	Number	1							
3	AGITATORS (FOR EACH TANK AS APPLICABLE)									
i	Agitator Assembly with Gear Box	Set	1							
4	MOTOR									
i	Motor bearing for each type of pump	Set	1							
5	MANDATORY SPARES FOR CONTROL SYSTEM AND MEASURING INSTRUMENTS									
5.1	Mandatory Spares for Temperature Elements and Thermowells									
5.1.1	Thermocouple / RTD elements (10% of each type and length of elements, or a minimum of one number, whichever is more.)	Lot	2							
5.1.2	Thermowells for each type of temperature sensors (10% or a minimum of one for each type, whichever is more.)	Lot	2							
5.2	Mandatory Spares for Electronic Transmitters (for pressure, DP, Flow, level, Temperature) and Electrical Transducers.									
5.2.1	Transmitters and Electrical Transducers (10% of total number of offered for each model and type for the project or a minimum of one number, whichever is more)	Lot	2							
5.3	Mandatory spares for local gauges/switch (for Pressure, DP, Temperature, Flow, level, etc.)									
5.3.1	Local gauges/ Switch (for Pressure, DP, Temperature, Flow, level, etc.) (10% of total number of instruments offered for each model and type for the project or a minimum of one number, whichever is more.)	Lot	2							
5.4	Programmable Logical Control (PLC)									
5.4.1	Function controller and control modules (10% of number for each type or minimum of 4 number for each type whichever is high.)	Lot	2							
5.4.2	Process I/O cards and drive modules (10% of the number of cards offered for the project from each category.)	Lot	2							
5.4.3	All other type of electronic modules like CPU of workstation, Power supply modules, communication modules, modules for Data highway / modules for LAN, controllers not covered above (10% of each type or minimum of 2 nos. of each type whichever is more).	Lot	2							
5.4.4	All cards, controllers, lamp and other components used in LVS.	Lot (10%)	2							
5.4.5	Control logic power supply fuses at each current rating (Three times the one hundred percent spare replacement).	Lot	2							
5.4.6	Electric to pneumatic converters (10% of each type utilized with automatic control system using pneumatic drives or a minimum of one of each type, whichever is more.)	Lot	2							
5.4.7	Plug-in type keyboard	2 No. of each type								
5.4.8	Dot matrix Printer	No.	2							
5.4.9	CRT	No.	2							
5.4.10	DVDs	Nos.	40							
5.4.11	Printer ribbons /inking mechanism for colour printer.	Nos.	20							
5.4.12	Ribbons for dot matrix printer.	Nos.	60							
5.4.13	Data highway cable with adequate connectors.	meters	500							
5.4.14	Hard disc drive unit as offered for system complete with accessories.	No.	2							
5.4.15	Interface cables for each type	Sets	4							
5.4.16	Power supply modules of each type and rating	Lot (10%)	2							
5.4.17	Interposing / coupling relays of each type.	2 Lot (5% of total quantity)								
5.5	MANDATORY SPARES FOR UN-INTERRUPTIBLE POWER SUPPLY SYSTEM									
5.5.1	Fuses (3 times, the one hundred percent spare replacement fuses shall be furnished with each panel board.)	Lot	2							
5.5.2	Electronic modules for UPS , Charger, static switch & stabilizer and DC power supply system with each set consisting of at least one number of each type of electronic module for inverters, chargers, static switch, stabiliser etc.	Set	2							
5.5.3	Battery cells	Lot (10%)	2							
5.5.4	Thyrister without heat sink	Lot (10%)	2							
5.5.5	Semiconductor fuse	2 Lot (10%)	2							
5.6	Mandatory Spares for Control Panels / Desks									
5.6.1	Crimping Pins	2 Rolls	2							
5.6.2	Bulbs for indicating lights (Three times the one hundred percent spare replacement)	Lot	2							
5.6.3	control circuit fuses of each current rating (Three times, the one hundred percent spare replacement)	Lot	2							
5.6.4	Push buttons, electrical control switches and Illuminated push buttons etc	2 Lot (5% of total quantity)								
6	VALVES AND PIPING									
i	Piping valves - Complete assembly	5% or min. 1 no. (whichever is more) for each size, type & rating for total population								
7	BLOWER (FOR EACH TYPE AND SIZE)									
i	Impeller with lock nuts & washers	Set	1							
ii	Shaft	Set	1							
iii	Bearings of Blowers	Set	1							
iv	Suction filter Assembly	Set	2							
8	SCREW PUMPS (FOR EACH TYPE AND SIZE)									
i	Shaft for each type	Set	1							
ii	Shaft Sleeves for each type	Set	1							
iii	Coupling between Pump & motor, bushes, pins with all fasteners & coupling Guards	Set	1							
iv	Pump bearings for each type	Set	1							
v	Gland Packing & Gland Assembly for each type	Set	1							
9	LIST OF MANDATORY SPARES FOR HOIST AND CHAIN PULLEY BLOCK									
	ELECTRIC HOIST (for each type and rating, hoists)									
1.	Mechanical Items									
1.1	Bearings for long travel wheels	Set	2							
1.2	Bearings for gear boxes for each type of hoist	Set	2							
1.3	Break liners for all the brakes	100% of total population of each type & size								
1.4	Oil seals	100% of total population of each type, size rating								
1.5	Brake springs for all brakes	100% of total population of each type, size rating								
1.6	Wire ropes for hooks	100% installed on each crane and hoist								
1.7	Solenoid coils for brakes	Set	2							
1.8	Overload relay for motors	Nos.	2							
1.9	Limit switches for hoists and travel mechanisms	Set	2							
1.10	Spare motors for hoists	Nos.	2							
1.11	Long travel machinery									
1.12	i. Gear wheel	Set	1							
1.13	ii. Internal clip	Nos.	2							
1.14	iii. Pinion	No.	1							
2	Electrical Items									
2.1	415 Volt Motor (Upto 30 KW Rating)									
	i) Driving End & Non-Driving End Bearing	3 Set for each type and rating of Motor								
	ii) Cooling Fan	2 Nos. for each type and rating of Motor								
	iii) Motor Terminal Block	5 Nos. for each type and rating of Motor								
	iv) Complete Set of Coupling	1 Set of each application								
3	C&I Items									
3.1	Back-up panel mounted devices (Selector switches/ Push buttons/ Indicators etc.	5% of installed capacity								
3.2	Lamps/ LEDs	10% of the total quantity								
3.3	Blank Tiles	10% of installed capacity								
3.4	MCBs	10% of each type & rating								
3.5	Fuses/ Fuse holder	10% of each type & rating								
	Chain pulley block (for each capacity and type of chain pulley blocks)									
i	Load chain wheel	No.	1							
ii	Load chain stripping fork	Nos.	5							
iii	Hand chain wheel	Nos.	2							
iv	Ratchet pawl	No.	1							
v	Locking ratchet wheel	Nos.	2							
vi	Guide roller	Nos.	2							
vii	Brake disc	Nos.	2							
GRAND TOTAL							NA		NA	

Note: Mandatory spares listed above is bare minimum requirement. In case any additional mandatory spares requirement is covered elsewhere in the tender specification apart from specified above, same shall be deemed to have been covered in bidders scope of supply.

Particulars of bidder / authorised representative			
Name	Designation	Signature & Company Seal	Date

[illegible]

TENDER Specification		Vendor QUERIES Dated 15.07.2017	BHEL REPLY
Clause 2.97 SCOPE OF SUPPLY	Pipe racks shall be provided by BHEL wherever available. However, where pipe racks are not available the pipe shall run on pipe pedestals. All auxiliary steel structures (U-clamps, nuts, bolts, channels etc.) for fixing the pipe on the pedestal or trestles shall be in the scope of bidder. If buried piping is required, Wrapping, coating and protection of all the buried pipe is also in bidder's scope & shall be as per IS 10221.	We understand that all pipe rack and pedestals shall be provided BHEL. Kindly confirm In case of buried piping excavated earth will be reused for refilling of excavated area Kindly provide detailed drg about pipe rack routing with elevation details so that we can estimate Auxiliary steel structures required for overground piping & cost estimation of buried piping.	Pipe rack and RCC pedestals shall be provided by BHEL. Pipe rack elevation shall be 11.5 m on which ETP piping shall be routed. Detailed pipe rack drawing shall be provided during detailed engineering. Excavation and backfilling are in BHEL scope.
Clause 2.124.2 SCOPE OF SUPPLY	Pipe distances from sumps outside ETP area upto inside ETP area and inside ETP area to respective location have been indicated in P & ID. Bidder to note that no commercial settlement / adjustment shall be entertained for variation upto +/- 10% of pipe lengths during detailed engineering. Distances given are from one area to other area only, however inside piping in respective area shall be in bidder's scope which has to be suitably consider by bidder as additional.	Kindly confirm any upward variation in piping length beyond 10% shall be compensated by BHEL ?	Pipe distances are final including variation of variation of +/- 10%.
Clause 2.128 SCOPE OF SUPPLY	Chemicals i.e. Bio dispersant, UF cleaning chemical, scale inhibitor, SMBs, Na2CO3 and RO cleaning chemical for continuous operation of entire ETP plant for 1 year and for pre commissioning, commissioning, trial and demonstration / PG test activities.	We understand that basic chemicals Acid, alkali, PE, FeCl3, NaOCl, lime and alum are in bhel scope since precommissioning stage. Kindly clarify You are also requested to specify trial run & pg test period to estimate chemical qty.	Acid, alkali, PE, FeCl3, NaOCl, lime and alum Chemicals are excluded from bidder's scope.
SCOpe of service Clause 6.0	Minor civil work like chipping of foundation, grouting below base plate for all structures, equipment, grouting of anchor bolts wherever these are not placed in the foundation during casting of foundation itself, excavation & filling of earth for buried pipes if and as required. To the extent possible, vendor shall ensure to supply all foundation bolts timely so as to facilitate placement of these bolts while casting the foundation. Wrapping, coating and protection of all the buried pipe shall be as per IS 10221	Kindly provide detailed drg about pipe rack routing with elevation details so that we can estimate Auxiliary steel structures required for overground piping & cost estimation of buried piping.	Pipe rack and RCC pedestals shall be provided by BHEL. Pipe rack elevation shall be 11.5 m on which ETP piping shall be routed. Detailed pipe rack drawing shall be provided during detailed engineering.
Exclusion Clause 8.6	Acid, alkali, PE, FeCl3, NaOCl, lime and alum Chemicals	We understand that basic chemicals Acid, alkali, PE, FeCl3, NaOCl, lime and alum are in bhel scope since precommissioning stage. Kindly clarify	Acid, alkali, PE, FeCl3, NaOCl, lime and alum Chemicals are excluded from bidder's scope.
Mandatory Spares S NO 8	6.1 Piping valves - Complete assembly 5% or min. 1 no. (whichever is more) for each size, type & rating for total population	Please clarify whether pipes are also required as spare ? If yes , should we consider Field piping for spares ?	Only Spares of valves are required.
Scope of Supply 2.94	Two nos. RIO panels are in bidder's scope for all effluent lifting sumps located outside boundary of ETP area.	we will not supply cables JB/SVB to RIO panels. We are refering Electrical scope matrix for cable scope mentioned in Section IB.	Tender specification is clear. Please follow the same. In addition, Electrical scope sheet also applicable for control and instrumentation / signal cable required for control and instrumentation system. Screened control cable is meant for electrical as well as for instrument cable / signal cable.
Scope of Supply 2.95	2.0 km fiber optical cable are in bidder's scope for communication between RIO panels and PLC located in ETP area.	We will supply fo cable 2kms (running length) but cable trays/conduit will not be supplied by us	Tender specification is clear. Please follow the same.
C&I Sensor Redundancy	Following redundancy criteria shall be met: 1. Two out of three measurements philosophy shall be adopted for all CLCS (Closed Loop Control System) and Protection for reliability of operation. The control system shall select the median value for the normal control purpose. In case of deviation of one transmitter output from the other two, the same shall be automatically isolated and average output of the remaining transmitters shall be fed to the control and measurement system and the control loop in this case shall be maintained on auto, with an alarm on the operator's work station as well as on the engineer's station. In case of failure of the two remaining transmitters in circuit, deviation of one transmitter output is more than the pre-set limit compared to the other transmitter, there shall be automatic bump less transfer to manual and Changeovers shall have suitable alarms in the operator's work station as well as engineer's station. 2. For signal compensations, separate signals from separate transmitters other than used for measurement & control shall be used. 3. For OLCS (Open Loop Control System) all sensors used for the protection shall be triple redundant All sensors for permissive and interlock shall be dual redundant	We are following the tender p&id for quantification of instrument. Your redundancy criteria in POINT 1,2,3 mentioned in Section IC not shown in tender P&ID. Hence we will provide the instruments shown as tender P&ID. Kindly confirm	Only singal instrumentation have been shown in tender P & ID however redundancy criteria to be followed in line with tender specification requirement.

1. 415 V AC (3 Phase, 3 Wire) supply shall be provided by BHEL at a single point as per 'Electrical scope split sheet' in Electrical portion of the specification. Further distribution to various instruments/Equipment shall be in Bidder's scope. Bidder to include the necessary power distribution board in his scope. Any power supply other than the above, if required for any instrument/equipment has to be derived from the above supply & all the necessary hardware for the same shall be in Bidder's scope.

All fields cabling for instruments/motor/pump/blower to JB is in bidder's scope and details are given elsewhere in this spec. JB to PLC shall be provided by BHEL as free issue whereas cable schedule, cable interconnections and wiring diagram for the same shall be in bidders' scope.

All cable & cable trays required for equipments/instruments in bhel scope as per scope matrix enclosed in Tender

As per electrical scope matrix section IB , all power,control ,screened cable and instrumentation cable is in bhel scope. Kindly confirm.

Tender specification is clear. Please follow the same.

Tender specification is clear. Please follow the same.

			Pipe elevation from Ground	Data Required Sump Depth(in mts)	Under ground Piping length (in mts)	Overground Piping length (in mts)	Pipe rack avialability (in mts)
PIPE MOC	pipe size	Length Provided (in mts) Area					
CS	50	1180 Transformer Yard oily Waste Collection for Unit -4 (to COMMON Oily Sump)	BHEL REPLY: Height of pipe rack on which pipe routing shall be done during detailed engineering is 11.5 m.	BHEL REPLY: Depth sumps may vary from 2.0 to 4.0 m.	BHEL REPLY: Pipe racks shall be provided by BHEL wherever available in line with plot plan attached with technical specification. However, where pipe racks are not available, the pipe shall run on pipe pedestals or buried.	BHEL REPLY: Pipe racks shall be provided by BHEL wherever available in line with plot plan attached with technical specification. However, where pipe racks are not available, the pipe shall run on pipe pedestals or buried.	BHEL REPLY: Pipe racks shall be provided by BHEL wherever available in line with plot plan attached with technical specification. However, where pipe racks are not available, the pipe shall run on pipe pedestals or buried.
CS	50	30 Transformer Yard oily Waste Collection for Unit -3 (to COMMON Oily Sump)					
CS	50	30 Transformer Yard oily Waste Collection for Unit -2 (to COMMON Oily Sump)					
CS	50	30 Transformer Yard oily Waste Collection for Unit -1 (to COMMON Oily Sump)					
CS	150	426 waste Water Collection pit from Boiler Area 1&2 (to COMMON OILY Sump)					
CS	150	600 waste Water Collection pit from Boiler Area 3&4 (to common Oily Sump)					
CS	100	930 SSF backwash Waste sump 1					
CS	100	1250 SSF backwash Waste sump 2					
CS	125	930 SSF CLEAR WATER TRANSFER PUMP TO CW forebay -1					
CS	125	1250 SSF CLEAR WATER TRANSFER PUMP TO CW forebay -2					
CS	65	620 ESP Waste Water transfer Pumps for UNIT 1 (to ash water Clarifier)					
CS	65	570 ESP Waste Water transfer Pumps for UNIT 2 (to ash water Clarifier)					
CS	65	624 ESP Waste Water transfer Pumps for UNIT 3 (to ash water Clarifier)					
CS	65	620 ESP Waste Water transfer Pumps for UNIT 4 (to ash water Clarifier)					
CS	100	150 Boiler blow down transfer unit 1 (to forebay 1)					
CS	150	350 Boiler blow down transfer unit 2 (to forebay 1)					
CS	100	145 Boiler blow down transfer unit 3 (to forebay 2)					
CS	150	255 Boiler blow down transfer unit 4 (to forebay 2)					
pvc		300 ETP clarifier Sludge transfer (to PT Plant Sludge sump)					
ss 316		300 RO permeate Transfer (to PT plant clarified Water storage tank)					
pvc		600 RO Reject disposal (to ash Water sump)					



TITLE:
4 X 270 MW BHADRADRI TPS

SPECIFICATION NO. PE-TS-411-164-A001

TECHNICAL SPECIFICATION FOR
EFFLUENT TREATMENT PLANT

REV. NO. 00

DATE : 24/07/2017

PRE BID CLARIFICATION SCHEDULE

All clarification from the Technical Specification shall be filled in by the BIDDER clause by clause in this format only.

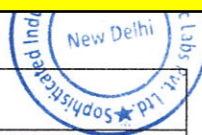
VOLUME	SECTION	CLAUSE NO.	PAGE NO.	SPECIFICATION REQUIREMENT	CLARIFICATION	REASONS FOR CLARIFICATION
II-B	I	42.0			*	
	Subsection	43.60	244 of 537	—		
	-IA					

Datasheet-A

* MCF Feed Pump Capacity is $54 \text{ m}^3/\text{hr}$ & Permeate Recovery is 55% for both stages^(I & II). So on this basis to get a permeate flow $50 \text{ m}^3/\text{hr}$ is not possible. Kindly Clarify

BHEL REPLY: Bidder to note that minimum requirement has been indicated in tender specification. Bidder to refer Note no. 2 indicated in data sheet A page no. 252 of 537 of which clause reproduced once again here "Bidder to note that intermediate capacities of different item / equipment have been mentioned in the Tender drawing / specification. However minor modification may take place during detailed engineering to meet the overall system requirement of overall RO permeate of $2 \times 25 \text{ m}^3/\text{hr}$ ". Hence bidder to design the system to meet the tender specification requirement.

PARTICULARS OF BIDDER / AUTHORISED REPRESENTATIVE				
<i>Saurabh</i>	ACM	<i>[Signature]</i>	16.9.17	
NAME	DESIGNATION	SIGNATURE	DATE	COMPANY SEAL



535.2