



BHARAT HEAVY ELECTRICALS LIMITED
PROJECT ENGINEERING MANAGEMENT, NOIDA

Date-21-Jul-18

CORRIGENDUM- 01

PROJECT	:	3X800 MW PVUNL PATRATU TPP PHASE-1
PACKAGE	:	FUEL OIL HANDLING AND STORAGE SYSTEM
ENQUIRY NO	:	PE/PG/PA1/E-5989/2018 Dt. 03.07.2018

Type of Corrigendum			
Technical Corrigendum -	☒	Commercial Corrigendum -	☒

In reference to the above mentioned tender enquiry for **FUEL OIL HANDLING AND STORAGE SYSTEM** package

Please note the following.

1. Reply of pre-bid queries.
2. Please read technical specification no PE-TS-434-166-A001 instead of PE-TS-436-166-A001 & PE-TS-417-555-A001.
3. Plates for bottom, shell, roof for fuel oil and misc. tanks and piping for fuel oil system shall be issued free to bidders.

All the other terms and conditions of the tender enquiry remain unchanged. All the bidders are requested to quote accordingly.

Yours faithfully,

For and on behalf of BHEL

Vinit Kumar Verma
Dy. Manager

Sr.No	Docc No; Clause No; Pg No;	Description	Query	BHEL REPLY
1	NIT Page No: 1 of 7 delivery schedule for E&C	Within Four (04) months from the date of availability of front.	As there are so many storage tanks and huge quantity piping is there in this project, 4 months for erection and commissioning may not sufficient. Hence we request you to provide 8months from the date of site front availability	04 months is sufficient. Hence, please quote as per tender documnts only.
2	PE-TS-434-166-A001 Page No:32, Clause No:1.1.0 (4)	One number of drain oil tanks with steam heating coils	As per this clause we have to provide steam heating coils for drain tank where as in P&ID, the same is not shown. As heating is mandatory for drain tank, we assume steam coil is in our scope.	Steam coils are in bidder scope. Please refer revised P&ID attached with amendment-01.
3	PE-TS-434-166-A001 Page No:32, Clause No:1.1.0 (8)	Two numbers of LDO transfer pumps with twin simplex type strainers of matching capacity at the suction of each pump	As per this clause we have to provide dedicated twin simplex filters for each pump, whereas in P&ID common twin simplex filters are shown for both pumps. Kindly confirm which one to be considered	Bidder to follow P&ID.
4	PE-TS-434-166-A001 Page No:32, Clause No:1.1.0 (9)	100Nos of HFO hoses, 80nos of steam and condensate hoses	In P&ID it is shown as 96 numbers of HFO hoses. Kindly confirm which one is correct. Further as per our experience steam and condensate hoses quantity shall be same as HFO hoses. Kindly clarify the reason for difference.	Bidder to refer revised P&ID attached with amendment-01.
5	PE-TS-434-166-A001 Page No:32, Clause No:1.1.0 (12)	Control valves for controlling steam flow to coil heater, suction heater and drain oil tank	In P&ID control valve is not shown, however as it is mandatory for system, we are considering on-off type control valve for drain tank. Kindly confirm.	Bidder to refer revised P&ID attached with amendment-01.
6	PE-TS-434-166-A001 Page No:33, Clause No:1.1.0 (15)	Flow gauge and coriolis type mass flow meter shall be provided	Kindly provide data sheet for flow gauge	Flow gauge suitable for oil measurement shall be provided.Other detail shall be finalized during detail engineering.
7	PE-TS-434-166-A001 Page No:33, Clause No:1.1.0 (15)	one number of gravity type oil water sepatator shall be provided along with accessories	Kindly note OWS will be in civil construction and accessories like skimmer pipe will be provided by us.	Bidder to follow specification.
8	PE-TS-434-166-A001 Page No:33, Clause No:1.1.0 (18)	2nos of vertical single screw type drain oil pump motor 5 cum/hr shall be provided in drain oil tank	As per point No: 5 of page No:32 and as per P&ID we have to provide 10 cum/hr pumps for drain tank. We are not understood this pump requirement. Kindly clarify	Bidder to provide Two (2) nos. (1W+1S) Vertical Single screw type Drain oil pump motor set of capacity 10 m3/hr. in Drain oil tank.
9	PE-TS-434-166-A001 Page No:33, Clause No:1.1.0 (26)	Pipe will be free issued to bidder for fohs package	Kindly clarify steam tracer pipe also will be supplied by BHEL or it is in bidder scope. Further request you to clarify pipes required for nozzles of storage tanks also in BHEL scope or vendor scope	Steam tracer pipes are in BHEL scope.
10	PE-TS-434-166-A001 Page No:34, Clause No:1.1.0 (48)	Steel plates for shell roof and bottom of fuel oil tanks shall be free issued by BHEL	We understood the plates required for manholes, RF pads, Gusset plates, NaOH breather, Seal pot is in vendor scope. Kindly confirm	Steel plates for shell, roof and bottom of tanks shall be free issued by BHEL.Other plates are in bidder scope.
11	PE-TS-434-166-A001 Page No:44, Clause No:7.0.0	Terminal points	Kindly provide terminal points for instrument air	T.P for instrument shall be within 10m from dyke area.
12	PE-TS-434-166-A001 Page No:44, Clause No:7.0.0	At the TP BHEL shall supply 22MT/hr of steam	We request you to provide railway wagon capacity, No. of wagons to heat at a time, time required for heating purpose enabling us to calculate steam requirement. Further request you to provide unloading time of total wagons	Railway wagon capacity to be considered approx. 70.4 cum. No. of wagon to heat at a time is 50nos.Other parameter shall be finalized during detail engineering.
13	HFO P&ID	48 Nos of railway wagons ---m3 each	Kindly provide wagon capacity. As per this clause we understood total wagons are 48nos and the same to be heated at a time and hence steam shall be calculated for 48 wagons at a time. Kindly confirm whether our understanding is correct	
14	NTPC specification Page No:66, Clause No:1.03.00	receiving yard shall be designed to unload one full rake of 76Nos/48 Nos at a time	As per specification we have to provide 100Nos of hoses and as per this clause provision to provide for 76 numbers only. We have not got clarity based on these two statements, now you are requested to clarify whether my unloading header is designed only for 76 nos and other hoses will be handed over to BHEL or header to be designed for 100 wagons.	Please refer revised P&ID attached with amendment-01.
15	NTPC specification Page No:67 & 68, Clause No:2.01.02	Pumps quantity	Pumps quantity mentioned against this clause is contradicting the pups quantity mentioned in Page No:18 & P &ID. Against this clause sump pumps for drain trench and unloading header trench are not given. Kindly clarify	Bidder to follow P&ID.
16	NTPC specification Page No:68, Clause No:2.01.03 (d & e)	Against point "d" we have to provide 100 Nos of hoses and against point "e" we have to connect 50 nos of flexible hoses to tankers	Against these clauses we have understood that provision shall be made for 100 wagons in which 50 wagons to unload at a time. Please confirm whether our understanding is correct. If it is correct , please confirm us initial heating time for wagon	Bidder to follow specification. Other parameter shall be finalized during detail engineering. Please refer revised P&ID attached with amendment-01.

Sr.No	Docc No; Clause No; Pg No;	Description	Query	BHEL REPLY
17	NTPC specification, Clause 4.01.01, Page No 76	Dimension of 3000 CuM Tank is 18 M Dia and 13 M hight	P&ID and Specification both are contradicting each other in P&ID it is mentioned as 18 M Dia and 14.5 M Height. Kindly confirm which one to be considered	Bidder to refer GAD of FOHS tanks attached with amendment-01.
18	NTPC specification Page No:77	Floor coil heating time is 36 hours	Generally initial heating time for coil heater shall be 72 hours to rise temperature from ambient to 50 deg C, hence request you to kindly cross check and confirm	Bidder to follow specification.
19	NTPC specification Page No:78	Suction heater data sheet	Kindly note flow is not given in suction heater data sheet and even in P&ID. To design the suction heater we request you to kindly confirm pressurising pump flow	Flow of suction heater is already mentioned in HFO P&ID. Tentative Flow is 200T/hr.
20	Section C/ C & I TECHNICAL SPECIFICATION FOR DCS BASED FUEL OIL UNLOADING & STORAGE SYSTEM /Clause No.7	Bidder to terminate all instrumentation and control elements in junction boxes. Number of Junction Boxes shall be sufficient and positioned in the field to minimize local cabling (max 12-15 mtrs) and trunk cable.	We feel The Instrumentation Cables from Field instruments to Field junction boxes are in our scope of supply. Further distribution is in Client scope. Please confirm.	The Instrumentation Cables from Field instruments to Field junction boxes are not in bidder's scope.Bidder to refer the page number 372 to 374 of the Technical specification No.: PE-TS-434-166-A001 for the scope of cables.
21	Section C/ C & I TECHNICAL SPECIFICATION FOR DCS BASED FUEL OIL UNLOADING & STORAGE SYSTEM /Clause No.19	Redundancy of sensors shall be provided by bidder (i) Triple redundancy for all analog and binary inputs required for protection of the system/drives. (ii) For all other control functions dual redundancy of the sensors shall be provided by the bidder.	As per clause you have asked for Triple redundancy but in P&ID you have shown only 2nos of Instruments (Level & Pressure). Please clarify	2 nos of instruments have been indicated in P&ID inline with the criteria (ii)For all other control functions dual redundancy of the sensors shall be provided by the bidder . However bidder to note that the qunaity shown in P&ID is the minimum requirement.During detail engineering if any additional instruments are required for the safe & reliable operation of plant, bidder shall supply the same without any price/delivery implication.
22		Instrument hookup fittings	Instrument fititngs like valves etc shall be considered as per Hookup drawing or P&ID. Please Clirify	C&I Instrument fittings shall be considered inline with instrument Hookup drawings .This is also subject to end user acceptance during detailed engineering.

Pre-bid Clarification				
Sub: Tender for Fuel Oil Handling and Storage System for PATRATU VIDYUT UTPADAN NIGAM LIMITED 3X800MW PVUNL PATRATU TPP PHASE-1 (Enq No Enquiry No- PE/PG/PA1/E-5989/2018 dated 3rd July, 2018)				
Sl. No.	Section/ Clause/ Page No.	Statement Of the referred clause	Clarification required	BHEL REPLY
Commercial				
1	E-59892018NIT E-Procurement, page 1 of 7 of pdf.	Security Deposit (SD) - No	We note that NO security deposit is required for this package. Please reconfirm. Also inform if any other type of guarantee is to be furnished after award of contract.	Bank Guarantee will be submitted by L1 bidder after award of contract as per tender documents.
2	E-59892018NIT E-Procurement, page 5 of 7 of pdf.	Note No. 16. : BGs should be in favour of BHEL-PSWR in place of PEM. L1 Vendor will be required to submit BGs for complete tender value to executing agency BHEL-PSWR. Refer enclosed Annexure B to NIT for BG Submission instead of format mentioned in GCC Rev 06.	Referring to Sl. No. 1 above, tender specifications are not clear regarding submission of BGs. Please clearly and inform what type of guarantee is to be furnished after award of contract along with the its form or instrument and validity etc. There is NO Annexure B attached to NIT for BG as mentioned in Notes, Sl. No. 16. of NIT.	Bank Guarantee will be submitted by L1 bidder after award of contract as per tender documents. For BG format please refer pg. no. 87 of the documents file.
3	OTHER DOCUMENTS, Page 2 of 12, 4.2 OTHER TAXES & LEVIES	4.2.1 All taxes/duties/Cess other than CGST/SGST/UTGST/IGST 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.	Any variation in taxes/duties/cess by govt., after the date of submission of bid shall be payable by Purchaser as per actuals against documentary evidence.	All taxes/duties/Cess other than CGST/SGST/UTGST/IGST 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. (Refer Cl No. 4.2.1 of GST related corrigenda to GCC Rev 06.)
Mechanical & Civil				
4	TECHNICAL SPECIFICATION FOR FUEL OIL HANDLING SYSTEM SPECIFICATION NO.: PE-TS-434-166-A001, SECTION I-A (SPECIFIC TECHNICAL REQUIREMENT-MECHANICAL)	Sl. No. 26) : Pipes will be free issued to bidder for Fuel oil handling system package. However, flanges, fasteners, gaskets, supports, pipe trestle within dyke and pump house as required etc. as applicable within the terminal point will be in vendor scope.	Please clarify that pipes required for steam tracing shall be supplied by BHEL as free issue.	Steam tracing pipes are in BHEL scope.
5	TS Part 5 of 8/Plot Plan (Dwg# PE-DG-434-100-M001)/1 of 5 and TS Part 4 of 8/Sketch of Layout of FOHS (Dwg# PE-DG-434-166-S001)/3 of 5	Main Tank Dyke Area in both the drawings is not matching	Please clarify which drawing to be considered.	Please refer plot plan attached with amendment-01.
6	TS Part 5 of 8/Plot Plan (Dwg# PE-DG-434-100-M001)/1 of 5 and TS Part 4 of 8/Sketch of Layout of FOHS (Dwg# PE-DG-434-166-S001)/3 of 5	Fuel Oil Pump House in both the drawings is not matching	Please clarify which drawing to be considered.	Please refer plot plan attached with amendment-01.
7	TS Part 4 of 8/Sketch of Layout of FOHS (Dwg# PE-DG-434-166-S001)/3 of 5	Forwarding Pump House Building	Please provide the location of Forwarding pump house.	Please refer plot plan attached with amendment-01.
8	TS Part 5 of 8/Plot Plan (Dwg# PE-DG-434-100-M001)/1 of 5	Location of Flash Tank	Please provide the location of condensate flash tank.	Location shall be near pump house and same shall be finalized during detail engineering.
9	Section 5 of 8/Plot Plan (Dwg# PE-DG-434-100-M001)/1 of 5	Location of Oil Water Separator	Please provide the location of OWS	Location shall be near pump house and same shall be finalized during detail engineering.
10	TS Part 4 of 8/P&ID (Dwg# PE-DG-434-166-A001)/2 of 5 and TS Part 1 of 8/2.01.03(e)/68 of 250	Size of Steam hoses	As per P&ID steam hoses are 75NB whereas in section 1 of 8 clause no. 2.01.03 page 68 of 250 it is given as 50NB. Please clarify the size of steam hoses.	Please refer revised P&ID attached with amendment-01.
11	TS Part 1 of 8(Section1A)/5.0.0/42 of 598 and TS Part 2 of 8/5.21.00/254 of 598	Civil Scope for FOHS	The Civil Scope for FOHS is contradicting with each other. We understand that TS Part 1 of 8(Section1A)/5.0.0/42 of 598 is to be followed. Please confirm.	Civil specification provided for bidder information.
12	TS Part 5 of 8/Plot Plan (Dwg# PE-DG-434-100-M001)/1 of 5, TS Part 4 of 8/Sketch of Layout of FOHS (Dwg# PE-DG-434-166-S001)/3 of 5 and TS Part 1 of 8(Section V1, Part- A) / 2.01.01(c)/67 of 598	Location of LDO Day Oil Tank	As per TS Part 1 of 8(Section V1, Part- A) / 2.01.01(c)/67 of 598 the LDO Day oil Tank is located in the vicinity of the auxiliary boiler which is contrary to the location shown in TS Part 4 of 8/Sketch of Layout of FOHS (Dwg# PE-DG-434-166-S001)/3 of 5. As per TS Part 5 of 8/Plot Plan (Dwg# PE-DG-434-100-M001)/1 of 5 Auxiliary boiler is roughly 600m away from the proposed location. Please clarify the Location of LDO Day Oil Tank to be considered.	Bidder to follow specification.
13	TS Part 1 of 8(Section V1, Part- B) /16.00.00/91 of 598	Height to which the tank is to be insulated	The height to which the tank shell for HFO/Drain oil is to be insulated is not mentioned. Does it mean the full tank shell is to be considered for insulation. Please confirm.	Full tank shell to be insulated.

Pre-bid Clarification				
Sub: Tender for Fuel Oil Handling and Storage System for PATRATU VIDYUT UTPADAN NIGAM LIMITED 3X800MW PVUNL PATRATU TPP PHASE-1 (Enq No Enquiry No- PE/PG/PA1/E-5989/2018 dated 3rd July, 2018)				
Sl. No.	Section/ Clause/ Page No.	Statement Of the referred clause	Clarification required	BHEL REPLY
	Commercial			
	Electrical and Instrumentation			
14	Section C; C&I Specific Technical Specification	Scope of HART calibrator	We believe HART Calibrator is not in our scope of supply	Universal Hand Held Calibrator is not in bidder's scope. However, all the transmitters (as applicable) supplied by bidder should have provision for calibration by Universal Hand Held Calibrator.
15	P&ID for HFO System (Dwg# PE-DG-434-166-A001 sheet 2 of 6) P&ID for LDO System (Dwg# PE-DG-434-166-A001 sheet 4 of 6)	It is indicated that Flow Gauge to be provided for both LDO and HFO at common discharge headers	Please clarify type of flow gauge to be provided. Also provide its Vendor Makes	Bidder to provide flow gauge suitable for oil measurement other details shall be provided during detail engineering. Make is subject to BHEL/NTPC acceptance which shall be finalised during detailed engineering. Bidder can propose new-sub vendor during contract stage which is subject to BHEL/end user approval without any commercial/delivery implication
16	Standard Electrical Scope	Mandatory Spare for Electrical	Please provide Mandatory Spare List for Electrical Items	Mandatory spares list is mentioned in Annexure-V.
17	Section C; C&I Specific Technical Specification Page 437 of 598	Local Control Panel	Please clarify whether any Local Control Panel to be considered for FOH System	Specification requirement is clear, bidder to follow specification.
18	Standard Electrical Scope	Commissioning Spares	Please provide O&M Spare List for Electrical and C&I Items	O&M spare is not mentioned in specification however bidder can recommend O&M spares if any required for the system.
19	Annexure IV-1 LDO Characteristics	Density other parameters are missing	Please provide density of LDO and other parameters. This is required of selection of Coriolis type flowmeter	Density of fuel oil is as below:- 1. HFO- 950-975 Kg/m3. 2. LSHS -925 Kg/m3. 3. HPS -855 Kg/m3. 4. LDO -855-875 Kg/m3 above value are tentative. Other parameter shall be provided during detail engineering.
20	Annexure IV-3 HFO Characteristics	Density other parameters are missing. Also three types of HFO are mentioned	Please provide density of HFO and other parameters. This is required of selection of Coriolis type flowmeter. Also which type HFO to be considered for selection of flowmeter	

Pre-bid Clarification

Sub: Tender for Fuel Oil Handling and Storage System for PATRATU VIDYUT UTPADAN NIGAM LIMITED

3X800MW PVUNL PATRATU TPP PHASE-1

(Enq No Enquiry No- PE/PG/PA1/E-5989/2018 dated 3rd July, 2018)

Sl. No.	Section/ Clause/ Page No.	Statement Of the refered clause	Clarification required	BHEL Reply
	Mechanical			
1	Technical Specification Part 3 of 8 and 4 of 8/P&ID (Dwg# PE-DG-434-166-A001) sheet 6 of 6 and (Dwg# PE-DG-434-166-A001)/sheet 2 of 6 and Technical Specification Part 1 of 8/1.1.0-8)/ 2.01.03-d) and e), page 32/68 of 598	Mismatch between quantities of Hoses in P&ID Vs. Technical specficiation, Part- 1 of 8.	As per HFO P&ID, there are 48 railway wagons are mentioned and no. of HFO Hoses mentioned are 96, whereas in Technical Specifications Part- 1 of 8, page 32 of 98, there are 100 nos. HFO hoses. There are 80 nos. Steam & Condensate hoses, Please clarify the correct no. of HFO and Steam & Condensate Hoses to be Considered.	Please refer revised P&ID attached with amendment -01
2	Technical Specification Part 4 of 8 /P&ID (Dwg# PE-DG-434-166-A001)/sheet 6 of 6	Isolation Valves for Steam	Steam Isolation valves in Unloading hoses has been shown as Ball valves, please confirm	Please refer revised P&ID attached with amendment-01.
3	Technical Specification Part 3 of 8 /P&ID (Dwg# PE-DG-434-166-A001)/sheet 4 of 6	Spare Isolation valve	LDO P&ID shows 200NB outlet isolation valves as Motorised Gate Valve but 200NB spare Isolation valve is shown as manual, Please confirm.	Bidder to follow specification.

PRE BID CLARIFICATION SCHEDULE				
Project:	3 x 800MW PVUNL PATRATU TPP PHASE-1			
Package:	FUEL OIL UNLOADING AND STORAGE SYSTEM & Misc. Tanks			
Sr.No.	Section/Clause/ Page No.	Statement of the referred clause	Clarification/ Confirm action required	BHEL REPLY
A	Mechanical			
1	P&ID for HFO system, Drg. No. PE-DG-434-166-A001, Rev.00, Sht. 02 of 06. P&ID for Steam & Condensate system, Drg. No. PE-DG-434-166-A001, Rev.00, Sht. 06 of 06. SPECIFICATION NO. PE-TS-434-166-A001 / Page no. 66 of 598 / Cl. No. 1.05.00	96 numbers HFO unloading hoses for 48 wagons is shown in PID 80 numbers Steam hoses shown in PID 96 numbers x 50NB condensate hoses shown in PID Note 8: BTPN wagons are not equipped with heating facility, so no heating arrangement is provided for wagon heating. Only unloading header tracing will be done un U/L area. Each rail wagon (TOH type) for HFO/LSHS/HPS shall have steam heating arrangement for heating of HFO to 50 deg. C, LSHS to 70 deg. C and HPS to 85 deg. C for free flowing of the oil. Bulk heating will be performed by the serpentine heater at the bottom of wagons. For heating purposes, steam shall be provided by Bidder.	Referred clauses are contradicting on number of hoses, number of wagons and wagon type. Please clarify. As per Note 8 in steam PID, wagon heating is not envisaged for BTPN wagons. Please confirm this point incase wagons are BTPN type. Also steam and condensate hoses are not required. If heating of wagons is required, we propose 25NB condensate hose instead of 50NB. If heating of wagons is required, please clarify the initial temperatures of wagons for each type of fuel. Please clarify total time required for heating (if applicable) and unloading of wagons.	Bidder to follow specification and provide steam & condensate system considering wagons with heating coils. Further, Please refer revised P&ID attached with amendment-01.
2	P&ID for Steam & Condensate system, Drg. No. PE-DG-434-166-A001, Rev.00, Sht. 06 of 06.	80 numbers 75NB Steam hoses are shown in the PID.	Both referred clauses are contradicting each other regarding the sizes of steam hoses. Please clarify.	Please refer revised P&ID attached with amendment-01.
3	SPECIFICATION NO. PE-TS-434-166-A001 / Page no. 68 of 598 / Cl. No. 2.01.03-e	50 NB flexible hoses each of 8000 mm length with coupling & fitting for connecting to wagons. Eighty (80) nos. hoses will be supplied for steam service and eighty (80) nos. for condensate service.		
4	SPECIFICATION NO. PE-TS-434-166-A001 / Page no. 18 & 20 of 598 / Oil characteristics	--	Densities of HFO, LSHS, HSP & LDO oils are not mentioned in the oil characteristics datasheet. Please provide.	Density of fuel oil is as below:- 1. HFO- 950-975 Kg/m3. 2. LSHS -925 Kg/m3. 3.HPS -855 Kg/m3. 4.LDO -855-875 Kg/m3 above value are tentative. Other parameter shall be provided during detail engineering.
5	P&ID for HFO system, Drg. No. PE-DG-434-166-A001, Rev.00, Sht. 02 of 06. SPECIFICATION NO. PE-TS-434-166-A001 / Page no. 66 of 598 / Cl. No. 1.07.00	Unloading header size - 500NB A 450 NB HFO/LSHS/HPS unloading header with hundred (100) Numbers hose connections for connecting neoprene rubber flexible hoses (100 nos.) to railway wagons shall be provided. 5% spare connection has been kept in the unloading header.	In the referred P&ID of HFO system, Unloading header size is given as 500NB. But in referred clause unloading header size is mentioned as 450NB. Please clarify which size to be considered as both sizes are satisfying the velocity criteria given in the specification.	Bidder to follow P&ID.
6	SPECIFICATION NO. PE-TS-434-166-A001 / Page no. 32 of 598 / Clause. No. 1.1.0 - 5 SPECIFICATION NO. PE-TS-434-166-A001 / Page no. 33 of 598 / Clause. No. 1.1.0 - 18	Two (2) nos. (1W+1S) Vertical Single screw type Drain oil pump motor set of capacity 10 m3/hr. in Drain oil tank. Two (2) nos. (1W+1S) Vertical Single screw type Drain oil pump motor set of capacity 5 m3/hr. in Drain oil tank.	Both referred clauses are contradicting each other regarding the capacity of drain oil pumps in drain oil tank. Please clarify.	Bidder to provide Two (2) nos. (1W+1S) Vertical Single screw type Drain oil pump motor set of capacity 10 m3/hr. in Drain oil tank.
7	SPECIFICATION NO. PE-TS-434-166-A001 / Page no. 33 of 598 / Clause. No. 1.1.0 - 18 P&ID for LDO system, Drg. No. PE-DG-434-166-A001, Rev.00, Sht. 04 of 06.	Two (2) (1W+1S) nos. LDO transfer pump motor set each of capacity 25 cu.m/hr. with twin simplex type strainers of matching capacity at the suction of each pump. In P&ID, only one set of twin simplex strainers are being indicated in common suction of two LDO transfer pumps.	Both referred clauses are contradicting each other. Please clarify whether only one set of twin simplex strainers to be considered in common suction of 2Nos transfer pumps or one set of twin simplex strainers to be considered in each suction of transfer pumps.	Bidder to follow P&ID.
8	SPECIFICATION NO. PE-TS-434-166-A001 / Page no. 33 of 598 / Clause. No. 1.1.0 - 23 SPECIFICATION NO. PE-TS-434-166-A001 / Page no. 33 of 598 / Clause. No. 1.1.0 - 26	Complete Fuel oil piping including steam tracing, drain piping, vent piping, valve, s, insulation & cladding (for restricting heat loss and maintaining out side temp below 60 deg. C) etc. as applicable to Fuel oil unloading & storage system. Pipes will be free issued to bidder for Fuel oil handling system package. However, flanges, fasteners, gaskets, supports, pipe trestle within dyke and pump house as required etc. as applicable within the terminal point will be in vendor scope.	From the referred clauses we understood that pipes along with steam tracing are free issued by BHEL. Please confirm.	confirmed.
9	P&ID for Steam & Condensate system, Drg. No. PE-DG-434-166-A001, Rev.00, Sht. 05 of 06.	Notes: 4. Steam traps for suction heater & floor coil heater of storage tank shall be of IB type. All other steam traps shall be TD type.	As most of the approved vendors are regretting to quote IB type steam traps for high flow rates. However we propose ball float type steam trap instead of IB type. Please confirm. Also provide specification/datasheets for steam traps.	Bidder to follow specification.
10	SPECIFICATION NO. PE-TS-434-166-A001 / Page no. 58 of 598 / DATA SHEET FOR PIPES, FITTINGS, FLANGES & ACCESSORIES for Misc. Tanks	MOC for Pipes - stainless steel pipe as per ASTM A-321 , Gr. TP-304, Seamless, Sch. 40	we understood that, in the referred datasheet, by mistake MOC for ss pipes is given as ASTM A-321 instead of ASTM A-312 . Please confirm.	confirmed.
11	SPECIFICATION NO. PE-TS-434-166-A001 / Page no. 58 of 598 / DATA SHEET FOR PIPES, FITTINGS, FLANGES & ACCESSORIES for Misc. Tanks	Dimensional standard for 32NB Handrail pipe - As per ANSI B-36.10, Plain ends	For IS 1239 Part-1 pipes, dimensional standard ANSI B6.10 is not applicable. For IS1239 Pipes will have its own dimensional standard.	Dimensional standard shall be as per IS1239 Part-1 .Medium grade.
12	P&ID for HFO system, Drg. No. PE-DG-434-166-A001, Rev.00, Sht. 02 of 06.	Terminal points for HFO & LDO Pressuring pumps supply future connection.	We presume terminal point for future connection is also 1000mm from Pressurising pump house. Please confirm.	Noted.
13	P&ID for HFO system, Drg. No. PE-DG-434-166-A001, Rev.00, Sht. 02 of 06.		Level transmitters are not shown for DOT in P&ID, whereas for all other tanks and sumps 2 numbers LTs are shown. Please clarify requirement of LTs for drain oil tank.	Instruments to be provided for DOT.Please refer P&ID attached with amendment-01
14	SPECIFICATION NO. PE-TS-434-166-A001 / Page no. 33 of 598 / Cl. 1.1.0 SPECIFICATION NO. PE-TS-434-166-A001 / Page no. 68 of 598 / Cl.2.01.02	21)Two (2) nos. (1W+1S) sump pump motor set in of capacity 10 m3/hr. in unloading header trench. 21) Two (2) nos. (1W+1S) sump pump motor set in of capacity 10 m3/hr. in unloading area drain trench. 22)Two (2) nos. (1W+1S) sump pump motor set in of capacity 10 m3/hr. in unloading Pump House. (g) Two (2) nos sump pumps of capacity 10 cu.m /hr each at the sump in HFO unloading pump house complete with all accessories of drive and mounting as specified.	Both BHEL and customer specification is contradicting each other regarding scope of supply of sump pumps. BHEL specification calls for supplying of Two (2) nos. (1W+1S) sump pumps (of 10m³/hr capacity) each in unloading header trench, unloading area drain trench & unloading Pump House. But customer specification calls for supplying of only (2) nos. (1W+1S) of 10m³/hr capacity sump pumps in unloading pump house. Please clarify.	Bidder to follow BHEL specification.
15	General		In HFO and LDO PID, Flow gauges are shown in common discharge line. We understood that it is only sight flow indicator without any flow measurement. Please confirm. If not, please provide the specifications.	Bidder to provide flow gauge suitable for oil measurement other details shall be provided during detail engineering.

PRE BID CLARIFICATION SCHEDULE				
Project:	3 x 800MW PVUNL PATRATRU TPP PHASE-1			
Package:	FUEL OIL UNLOADING AND STORAGE SYSTEM & Misc. Tanks			
Sr.No.	Section/Clause/ Page No.	Statement of the referred clause	Clarification/ Confirm action required	BHEL REPLY
16	SPECIFICATION NO. PE-TS-434-166-A001 / Page no. 353 of 598 / Sketch of Layout of FOHS (Drg.No. PE-DG-434-166-S001, Rev.00) SPECIFICATION NO. PE-TS-434-166-A001 / Page no. 356 of 598 / Plot plan (Drg.No. PE-DG-434-100-M001, Rev.00)		Layout arrangement of Tankfarm area, Unloading & pressurising pump houses shown in the referred drawings are not matching. Please clarify which shall be considered for estimation.	Please refer plot plan attached with amendment-01.
17	SPECIFICATION NO. PE-TS-434-166-A001 / Page no. 72 of 598 / Cl. No. 1.01.06	(b) Unless otherwise specified, for all flanged connections, Contractor shall furnish suitable counter flanges and necessary nuts, bolts and gasket materials. The flanges and counter flanges shall be fabricated by the Contractor from plates.	From the referred clause, we understood that material for flanges shall be IS2062 plate fabricated. Please confirm.	Please follow specification.
18	P&ID for HFO system, Drg. No. PE-DG-434-166-A001, Rev.00, Sht. 01 of 06, Notes	8. Size of inlet & outlet spare connections shall be same as inlet and out let nozzles.	1. As per referred note, size of inlet spare connections shall be same as inlet nozzles. However in the HFO PID inlet is given as 400NB and inlet spare connection is given as 200NB. Please clarify. 2. Also provide the size of spare nozzle N11.	Please refer revised P&ID attached with amendment-01.
19	P&ID for HFO system, Drg. No. PE-DG-434-166-A001, Rev.00, Sht. 02 of 06	HFO storage tank.		
20	P&ID for HFO system, Drg. No. PE-DG-434-166-A001, Rev.00, Sht. 01 & 02 of 06	Valve selection criteria for fuel oil line: 300NB & Below - Ball/plug valve Above 300NB - Gate valve	From the referred statement, Oil lines valves shall be either ball or plug for line sizes 300NB & below. But from P&IDs we understood that valves for line sizes 200NB & below shall be ball and for line sizes 250NB & 300NB shall be plug. Please clarify whether ball valves can be used in line sizes 250NB & 300NB.	
21	SPECIFICATION NO. PE-TS-434-166-A001 / Page no. 43 of 598 / Cl. No. 7.0.0 Terminal points P&ID for HFO system, Drg. No. PE-DG-434-166-A001, Rev.00, Sht. 02 of 06	Effluent from Oil Water Separators: Water pit of OWS. Further, pumps and piping up to CMB be under ETP scope. Oil water separation pit - water pit	Please clarify the scope of instruments and valves coming in this pit.	Bidder to follow P&ID.
22	SPECIFICATION NO. PE-TS-434-166-A001 / Page no. 54 of 598 / DATA SHEET FOR CONDENSATE STORAGE TANK SPECIFICATION NO. PE-TS-434-166-A001 / Page no. 59 of 598 / Cl. No. 2.17.03	SUGGESTED DIMENSION (DIA & HEIGHT) / PLATE THICKNESS - 10 X 8.5M / MINIMUM (SHELL & ROOF) PLATE THICKNESS 8MM & BASE PLATE THICKNESS 10MM 1.03 Size (Dia & Height)/Plate Thickness - 9mx8.2m minimum , Shell & Roof plate Thickness 8mm and Base plate thickness 10mm	Both referred clauses are contradicting each other regarding the dimensions of condensate storage tank. Please clarify.	Bidder to follow dimension indicated in GAD of condensate storage tank attached with tender specification. Further dimension shown are minimum and same shall be as per approved design calculation.
23	SPECIFICATION NO. PE-TS-434-166-A001 / Page no. 59 of 598 / Cl. No. 2.17.03 / 1.10 SPECIFICATION NO. PE-TS-434-166-A001 / Page no. 355 of 598 / GA drawing of Misc. Tank (Condensate storage tank)	c) Nozzle connection for Instrument/spare - Three (3) nos. for each tank	From the referred clause, 3 spare nozzles shall be provided for each condensate tank. Where as in GA drawing only 2 No. spares are indicated in nozzle schedule. Please clarify.	Nozzle sizes and quantities are tentative and same shall be finalized during detail engineering. Bidder to provide the same without any cost implication to BHEL.
24	SPECIFICATION NO. PE-TS-434-166-A001 / Page no. 355 of 598 / GA drawing of Misc. Tank (DM water storage tank)	--	In nozzle schedule, two nozzles (N9 & N13) are indicated for same service i.e. recirculation line for CPU resin transfer pumps. Please clarify whether two nozzles are required.	
25	P&ID for Steam & Condensate system, Drg. No. PE-DG-434-166-A001, Rev.00, Sht. 05 of 06.	Notes: 4. Shell surface of F.O storage tanks shall be insulated.	Please clarify whether complete shell to be insulated or partially. If partially insulated, provide the height to be considered.	Complete shell to be insulated.
26	SPECIFICATION NO. PE-TS-434-166-A001 / Page no. 43 of 598 / Cl.No. 7.0.0	Terminal points	Kindly provide terminal points for condensate, PRDS spray water, and instrument air. Also provide spray water temperature to be considered.	Terminal point shall be near tank farm area within 10m.
27	SPECIFICATION NO. PE-TS-434-166-A001 / Page no. 81 of 598 / Cl.No. 5.01.10 P&ID for HFO, LDO and Steam & Condensate system, Drg. No. PE-DG-434-166-A001, Rev.00.	Velocity criteria Pipe sizes	Both pipe sizes & velocity criteria are provided. Please clarify which to be followed.	Bidder to follow P&ID.
28	SPECIFICATION NO. PE-TS-434-166-A001 / Page no. 74 & 75 of 598 / Cl.No. 3.00.00 TECHNICAL SPECIFICATION SECTION-VI / Page no. 238 of 598.	Painting specification Surface preparation & Painting	The painting specification given in both the referred clauses are contradicting each other, however we are considering surface preparation & painting for HFO, LDO, Drain oil tank as given in page no. 74, 75 of 598. Please clarify. As painting specification for uninsulated piping is not given, we are considering painting given for uninsulated tanks (External surface) for the same. Please confirm.	Bidder to follow painting specification attached in section -IA. Painting is subject to customer approval and same shall be provided without any cost implication to BHEL.
29	SPECIFICATION NO. PE-TS-434-166-A001 / Page no. 52 of 598 / DATA SHEET FOR DM WATER STORAGE TANKS / Sl.No. 18,19 & 20	AS PER CUSTOMER'S APPROVED PAINTING SCHEDULE FOR TANK, BREATHER AND SEAL POT. REFER SUB SECTION-A-14 AND CL. 16.00.00 OF SECTION VI, PART B OF NTPC SPECIFICATION	Referred clause calls for surface preparation and painting specification as per SUB SECTION-A-14 AND CL. 16.00.00 OF SECTION VI, PART B OF NTPC SPECIFICATION which is not found in tender. However we are considering surface preparation and painting for DM water storage tank as given in GA drg. No. PE-DG-434-167-A002, Rev.00. Please confirm.	Refer amendment. Please note that painting is subject to customer approval. Same shall be provided without any cost implication to BHEL.
30	SPECIFICATION NO. PE-TS-434-166-A001 / Page no. 54 of 598 / DATA SHEET FOR CONDENSATE STORAGE TANKS / Sl.No. 20,21,22	AS PER CUSTOMER'S APPROVED PAINTING SCHEDULE FOR TANK, BREATHER AND SEAL POT. REFER SUB SECTION-A-10 OF SECTION VI, PART B OF NTPC SPECIFICATION	Referred clause calls for surface preparation and painting specification as per SUB SECTION-A-10 OF SECTION VI, PART B OF NTPC SPECIFICATION which is for Low pressure piping and the same is not applicable. Hence we are considering surface preparation and painting for Condensate storage tank as given in GA drg. No. PE-DG-434-167-A004, Rev.00. Please confirm.	Specification requirement is clear, bidder to follow specification.
31	SPECIFICATION NO. PE-TS-434-166-A001 / Page no. 39 of 598 / cl.no. 2.3 a)	Bottom plate shall be 10.0 mm thick (minimum). Minimum 8 mm (excluding tolerance on plate as per relevant IS) thick plates including corrosion allowance shall be provided for shell plates and minimum 8 mm for roof plates for all tanks.	Referred clause calls for minimum thickness for Misc tanks. We presume that these are not applicable for HFO and LDO tanks. Please confirm.	Please refer GAD OF FOHS Tanks attached in amendment-01.
B	Electrical, Control & Instrumentation			
1	SPECIFICATION NO. PE-TS-434-166-A001 / Section IA / Page 43 of 598	j) Exclusion as indicated in Electrical & C&I portion of technical specification	We have not find any exclusions relevant to electrical and C&I scope in respective specifications. Please provide.	Specification requirement is clear, bidder to follow specification.
2	TECHNICAL SPECIFICATIONS, SECTION VI, PART-B, BID DOC. NO.:cs-9585-001-2, SUB SECTION A-21, FO-UNLOADING SYSTEM, Cl. No: 11.00.00, PAGE 87 OF 598.	9. Pipe Insulation a) Rock wool Mattress 100 kg/cu.m. b) Glass wool Mattress 64 kg/cu.m. c) Mineral wool Preformed Pipe Section 140-150 kg/cu.m.	Particular type of material (preformed sections or LRB Mattresses) to be considered for Thermal Insulation is not given in the referred specifications. Hence we are considering LRB mattresses with 100kg/M3 density. Please confirm.	Bidder to follow specification. Other detail shall be finalized during detail engineering.

PRE BID CLARIFICATION SCHEDULE				
Project:	3 x 800MW PVUNL PATRATU TPP PHASE-1			
Package:	FUEL OIL UNLOADING AND STORAGE SYSTEM & Misc. Tanks			
Sr.No.	Section/Clause/ Page No.	Statement of the referred clause	Clarification/ Confirm action required	BHEL REPLY
	TECHNICAL SPECIFICATIONS SECTION VI, PART-B, SUB-SECTION - A-13 , THERMAL INSULATION, Page 249 of 598	2.01.00 Insulation Materials : Type # 2:Piping system & equipment with operating temp. in range of 60- 400 deg.C Type # 3:Piping system of 350 NB and below with temp. in range of 60 – 500 degC Type # 4: Piping system of 350 NB and below with operating temp. in range of 60-400 deg.C		
3	TECHNICAL SPECIFICATIONS, SECTION VI, PART-B, BID DOC. NO.:cs-9585-001-2, SUB SECTION A-21, FO-UNLOADING SYSTEM, Cl. No: 11.00.00, PAGE 87 OF 598.	14. Hexagonal wire mesh, Up Galvanized steel of 10-13 mm to 400 deg. C aperture and 0.71 mm diameter	Both referred clauses are contradicting regarding wire diameter. Please confirm which to be considered.	Detail mentioned in "TECHNICAL SPECIFICATIONS, SECTION VI, PART-B, BID DOC. NO.:cs-9585-001-2, SUB SECTION A-21, FO-UNLOADING SYSTEM, Cl. No: 11.00.00, PAGE 87 OF 598." shall prevail.
	TECHNICAL SPECIFICATIONS SECTION VI, PART-B, SUB-SECTION - A-13 , THERMAL INSULATION, Page 250 of 598	5. Hexagonal wire mesh: Wire mesh netting shall be 10 to 13 mm aperture atleast 0.56mm diameter wire.		
4	TECHNICAL SPECIFICATIONS, SECTION VI, PART-B, BID DOC. NO.:cs-9585-001-2, SUB SECTION A-21, FO-UNLOADING SYSTEM, Cl. No: 11.00.00, PAGE 88 OF 598.	11. Sheathing (cladding) material As per ASTM B-209-1060 TEMPER-H-14 (or) As per IS 737 Gr.19000/H2. a) For a dia of insulated surface of 450mm and above for flat surfaces - 16 SWG with lightly Bonded Mattress b) For a dia of insulated surfaces up to 450 mm - 20 SWG with lightly Bonded Mattress c) For a dia of insulated surfaces up to 450 mm - 20 SWG (with Preformed Pipe Sections)	Cladding material thicknesses details given under the referred clauses are contradicting each other. Please confirm which thicknesses to be considered.	Detail mentioned in TECHNICAL SPECIFICATIONS, SECTION VI, PART-B, BID DOC. NO.:cs-9585-001-2, SUB SECTION A-21, FO-UNLOADING SYSTEM, Cl. No: 11.00.00, PAGE 88 OF 598.shall prevail.
	TECHNICAL SPECIFICATIONS SECTION VI, PART-B, SUB-SECTION - A-13 , THERMAL INSULATION, Page 250 of 598	2.02.00 Cladding Material & Accessories shall be as specified here under. Cladding - Aluminum ASTM B-209-1060 temper H14 or IS:737 Gr.19000/H2 Thickness of sheathing: (a) 18SWG (1.219mm) for diameter for insulated surface 450 mm and above and for flat surfaces (b) 20 SWG (0.91 mm) for diameter of insulated surface 150 mm and above upto 450 mm. (c) 22 SWG (0.71 mm) for diameter of insulated surface 150 mm and below. (d) 16 SWG ribbed Aluminum for Steam Generator outer casing		
5	SECTION-C, C & I TECHNICAL SPECIFICATION FOR DCS BASED FUEL OIL UNLOADING & STORAGE SYSTEM Page 435 of 598	13) 415 V/230 V AC Power supply shall be provided by BHEL at a single point, further distribution to various instruments/equipment of the system shall be in bidder scope. Bidder to include necessary power distribution board, changeover circuit in his scope. Any power supply other than the above, if required by any instrument/equipment has to be derived by the bidder from the above supply & all necessary hardware for the same shall be in bidder scope. Bidder to submit the power requirement along with the bid.	As there is no panels, UPS, UPS ACDB or DCDBs etc are involved in our scope, this clause is not applicable. Please confirm.	The specification requirement is clear. The purpose of this clause is that if any power is required for Equipment/instrument supplied by bidder, BHEL will provide the power at single point. Further distribution is in bidder's scope.
6	SECTION-C, C & I TECHNICAL SPECIFICATION FOR DCS BASED FUEL OIL UNLOADING & STORAGE SYSTEM Page 436 of 598	20) The PDBs (in bidders scope) provided for distribution of UPS loads shall be as per following guidelines. Each PDB shall be provided with input feeder monitoring through potential free contact wired to DCS.The output feeders from the PDB shall be provided with separate fuse & MCB's. 10% spare feeders (min. 1 no.) with MCB & fuses for each rating shall be provided in Bidder's each PDB.	As there is no UPS, UPS ACDB or DCDBs involved in our scope, this clause is not applicable. Please confirm.	
7	SECTION-C, C & I TECHNICAL SPECIFICATION FOR DCS BASED FUEL OIL UNLOADING & STORAGE SYSTEM Page 437 of 598	30) Local control panel if any required for operation shall be in bidder scope	As per P&ID and tender specification all instruments are connected directly DCS. Hence Local Control Panel is not applicable and same is not considering. Please confirm.	
8	SECTION-C, C & I TECHNICAL SPECIFICATION FOR DCS BASED FUEL OIL UNLOADING & STORAGE SYSTEM Page 457 of 598	SPECIFICATIONS FOR PR. GAUGE, D.P. GAUGE, TEMP. GAUGE AND LEVEL GAUGE. Temperature gauge	In the referred specification calls for capillary only for temperature gauges. For pressure measurements (ie., gauges, switches & transmitters) there is no capillary indicated. Please clarify whether capillary is required or not.	Specification requirement is clear, bidder to follow specification.The accessories required and not mentioned specifically shall also be in the scope of Bidder.
9	SECTION-C, C & I TECHNICAL SPECIFICATION FOR DCS BASED FUEL OIL UNLOADING & STORAGE SYSTEM/CONTROL VALVES, ACTUATORS & ACCESSORIES/ Cl. No. 7.00.00/ Page 475 of 598	11) Hand Held Hart Calibrator: Universal Hart Calibrator to be provided (for quantity, refer Part-A: Contract quantities of the specification).	Referred Part-A: contract quantities of the specifications is found in the tender document. Please provide.	Universal Hand Held Calibrator is not in bidder's scope. However, all the transmitters (as applicable) supplied by bidder should have provision for calibration by Universal Hand Held Calibrator.
C	General			
1	General	--	Along with the tender you have provided a Price schedule with breakup. And in online you have uploaded an othe price schedule format. Please confirm which we have to consider.	Please fill the prices in online system as well as in excel sheet and this price schedule (excel) have to uploaded in e-procurement system in price bid form.