

Name of Work : RWTP, RO-DMP, CPU & ZLD Plant for Panipat Refinery Expansion Project (P25) of M/s Indian Oil Corporation Limited (IOCL), India
Bidding Document: SG/B269-475-PA-T-8701/23

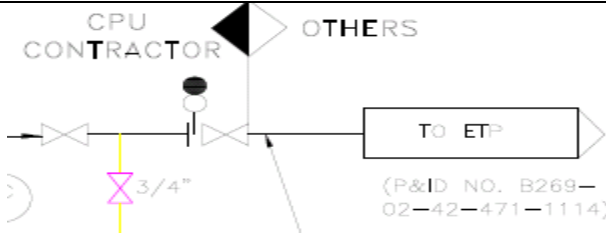
PRE-BID QUERIES (Bidder-1)

SL. No.	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
	PART/VOL.	PAGE NO.	CLAUSE NO.	SUBJECT		
1	Substation & Control Room (RWTP 122) Drg. No. B269-000-81-41-02506 Rev.A	2556-2558/7166			<p>In the referred drawing Ground floor plan, First floor plan & second floor plan of Substation & Control Room (RWTP-122) has been given.</p> <p>Following has been indicated in the referred drawings.</p> <p>(a) On Ground floor Clean Agent Room & Battery room has been indicated.</p> <p>(b) On First floor UPS room has been indicated</p> <p>(c) On Second floor UPS room & Battery room has been shown again.</p> <p>Please clarify following.</p> <p>(i) Whether we have to consider the UPS & Battery room shown on second floor or UPS room on first floor & Battery room on Ground floor</p> <p>(ii) We understand that the clean agent system should cover (a) Rack room (b) Console room (c) Engineering room (d) UPS room & (e) Battery room. Please confirm our understanding</p>	<p>i) Follow bid dwg. UPS, Battery Room on Second Floor cater to Control Room rooms on same floor. UPS, Battery on lower floors are for the Substation.</p> <p>ii) Bidder's understanding is correct.</p>
2	Substation & Control Room (RO DM) Drg. No. B269-000-81-41-02431 Rev.A	2559-2561/7166			<p>In the referred drawing Ground floor plan, First floor plan & second floor plan of Substation & Control Room (RO DM) has been given.</p> <p>Following has been indicated in the referred drawings.</p> <p>(d) On Ground floor Clean Agent Room & Battery room has been indicated.</p> <p>(e) On First floor UPS room has been indicated</p> <p>(f) On Second floor UPS room & Battery room has been</p>	<p>i) Follow bid dwg. UPS, Battery Room on Second Floor cater to Control Room rooms on same floor. UPS, Battery on lower floors are for the</p>

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					<p>shown again.</p> <p>Please clarify following.</p> <p>(iii) Whether we have to consider the UPS & Battery room shown on second floor or UPS room on first floor & Battery room on Ground floor</p> <p>(iv) We understand that the clean agent system should cover (a) Rack room (b) Console room (c) Engineering room (d) UPS room & (e) Battery room. Please confirm our understanding</p> <p>.</p>	<p>Substation.</p> <p>ii) Bidder's understanding is correct.</p>

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PRE-BID QUERIES (Bidder-2)

SL. No.	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
	PART/VOL.	PAGE NO.	CLAUSE NO.	SUBJECT		
71.	Part 2	891 of 7166	SOW	Guaranteed value	<p>Guaranteed value of pH, Iron as Fe, KMno₄ , Na + K as Na at Polished condensate outlet (CPU plant) is different in Scope of work and Process datasheet at polished condensate CPU plant.</p> <p>Kindly clarify which document shall be considered for Guaranteed value of CPU plant.</p>	<p>Polished condensate quality shall be as per Process Datasheet B269-476-02-DS-1901, Rev. No.- B.</p> <p>However, Kindly refer updated SOW B269-476-17-44-SS-1001 in Amendment for guarantee parameters of polished condensate quality</p>
72.	Part 5	2511 of 7166	P&ID	Batter Limit Condition	 <p>Kindly provide the battery limit condition of ACF backwash waste (CPU) line.</p> <p>Also provide battery limit condition for cooling water supply</p>	<p>ACF backwash waste line and cooling water supply & return battery limit conditions are provided in tender.</p>

SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
					and return line.	
73.	Part 5	2511 of 7166	P&ID	Block and bleed valve	<p>Block & bleed valve arrangements shall be provided at backwash inlet and regeneration (acid & alkali) inlet of individual MB.</p> <p>As per P&ID, there is no requirement for block and bleed valve at backwash inlet but requirement given in scope drawing.</p> <p>Kindly confirm the requirement.</p>	Block and bleed arrangement shall be provided.
74.	Part 2	899 of 7166	SOW	Pipe rack / Sleeper	<p>All piping at battery limit shall be left with flange connection. The ISBL piping shall be through pipe racks, pipe sleepers and trenches /underground lines as per the Engineering Specifications. U/G piping shall have a minimum cushion of 1.2 m below</p> <p>As per above clause, We understood that Pipe rack and pipe sleeper both are suitable for piping routing inside plant area for all package.</p>	Beyond the battery limit arrangement, within ISBL ,sleeper arrangement is not preferred and pipe rack arrangement is indicated as The sleeper arrangement restricts the mobility within the unit.
75.	Part 2	891 of 7166	SOW	Provision for Installation of one more chain in	<p>condensate to produce polished condensate. Two chains (1 working + 1 standby) each of 140 m3/h capacity along with provision for installation of one more chain of 140 m3/h in future for Alkylolation Unit shall be provided for the complex. This document constitutes</p> <p>As per above clause, Two Nos of chain (1 Working + 1 standby) shall be supply by contractor and provision for installation of one more chain for alkylolation unit shall be considered in Equipment layout.</p> <p>Kindly confirm.</p>	Bidder understanding is correct.
76.	Part 5	2163 of 7166	PDS	Discrepancy	<p>MOC of CPU feed pump is different in process datasheet and equipment list.</p> <p>Kindly confirm the MOC of CPU feed pump.</p>	MOC of CPU Feed pumps shall be C: SS304L; I: SS304L
77.	Part 5	2166 of 7166	PDS	Lining requirement	Kindly clarify the requirement of Glass Flake Vinyl Ester Lining for activated carbon filter for CPU plant.	Please follow tender


SL. No.	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
78.	Part 5	2166 of 7166	PDS	Temperature	Kindly provide operating and design temperature for suspect & pure condensate inlet to the CPU plant.	Operating & design conditions are already available in CPU process data sheet doc B269-476-02-DS-1901.
79.	Part 5	2170 of 7166	PDS	Design flow rate	<div> <div>DESIGN FLOW (m³/h)</div> <div>437</div> </div> <p>1) Design flow rate of CPU plant is 140 m3/hr but design flow rate of polished condensate tank is 437 m3/hr. Kindly clarify the same. 2) Design of polished condensate tank shall be as per residence time or shall be considered as given in Equipment list.</p>	1) Inlet flow based on polished and pure condensate flow 2) Polished condensate size is frozen in tender. No change in size to be done.
80.	Part 5	2171 of 7166	PDS	Capacity of pump	Why capacity of polished condensate transfer pump shall be 2 x 160 m3/hr instead of 1 x 140 m3/hr?	Please follow tender
81.	Part 5	2175 of 7166	PDS	Quantity of level transmitter	<div> <div>LEVEL TRANSMITTER (YES / NO) (TYPE)</div> <div>YES, 2 NOS</div> </div> <p>As per Process datasheet, quantity of level transmitter in acid/caustic dilution tank for MB is 2 Nos but as per P&ID, quantity of level transmitter in acid/caustic dilution tank for MB is 1 No. Kindly confirm the quantity of level transmitter in acid/caustic dilution tank for MB.</p>	2 nos. of level transmitter shall be provided for acid/caustic dilution tanks for MB
82.	Part 5	2175 of 7166	PDS	Morpholine dosing tank	Kindly clarify the requirement of morpholine dosing tank in CPU plant.	Morpholine from Morpholine dosing

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						tank in RODMP shall be dosed in CPU.
83.	Part 5	2511 of 7166	P&ID	On-off valve type	We understood that On-off valve type to be followed as per the P & ID .	For Auto on off valves, EDB B269-999-16-51-EDB-1001 shall be followed.
84.	Part 5	2511 of 7166	P&ID	Quantity of trim cooler for CPU	As per P&ID, Quantity of trim cooler for CPU plant is 2 Nos (1W+1S) But as per process datasheet of heat exchanger, Quantity of trim cooler for CPU plant is 1 No. Kindly confirm the Quantity of trim cooler for CPU plant .	Please follow as per exchanger PDS.
85.	Part 5	2308 of 7166	PDS	Flow rate	Kindly provide the individual flow rate of Suspect condensate and pure condensate of CPU plant.	The requirement is not clear. Already exchanger PDS shows the normal and max condensate flow for the unit to be designed.
86.	Part 5	2308 of 7166	PDS	Design parameter	We understood that design inlet parameter of feed inlet (i.e. provided in PDS of CPU plant) is combined parameter of suspect condensate and pure condensate. Kindly confirm our understanding.	Feed condensate properties mentioned in CPU specification is only Suspect condensate properties.
87.	Part 5	2511 of 7166	P&ID	Pipe size of Inlet /	As per P&ID, Line size of unpolished condensate inlet line	Please follow

SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
				Outlet	to heat exchanger is 12 " –A1A-IH and outlet line from heat exchanger is 14"-A1A-IH. Also as per P&ID-476-1117, outlet line from heat exchanger is 16"-A1A-IH. Kindly clarify the inlet/outlet line size of heat exchanger.	tender. The 16"-A1A line size shall be before TP-02.
88.	Part 5	2511 of 7166	P&ID	Unpolished line	Kindly clarify that why unpolished condensate water line connect to discharge line of ACF backwash waste transfer pump as well as connect to ACF backwash collection sump.	Please follow tender
89.	Part 5	2512 of 7166	P&ID	Line size of discharge header	We understood that line size of common discharge header of CPU feed pump is considered as higher because of flow rate of future installation for alkylation unit is also included in common discharge header. Kindly confirm our understanding.	Bidder understanding is correct.
90.	Part 5	2512 of 7166	P&ID	Drain from oil coalescer	Drain line from Oil coalecer unit shall be connected to the ACF backwash collection sump or ACF backwash transfer pump discharge header. Because of in sufficient pressure in drain line of oil coalescer , It should be connect to ACF backwash collection sump. Kindly clarify the same.	Please follow tender.
91.	Part 5	2514 of 7166	P&ID	Inlet/ Outlet line size	Line size of individual inlet / outlet of actiavted carbon filter is 8" but line size of indivudal inlet/outlet of Mixed bed exchanger is 6 " . Kindly clarify the same.	Inlet/outlet line size of MB exchanger shall be 8".
92.	Part 5	2512 of 7166	P&ID	Line size of Off spec	As per P&ID-476-1112 , Line size of off spec. MB is 10" – A1K. But as per P&ID-476-1114, Line size of off spec. MB is 8" –A1K. Kindly confirm the Line size of off spec. MB.	Line size of off spec. MB shall be 10"-A3A

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93.	Part 5	2512 of 7166	P&ID	Inlet line to Unpolished tank	As per P&ID-476-1115, Polished condensate transfer pump discharge line is connect to Unpolished condensate tank but as per P&ID-476-1112, there is no inlet line from Polished condensate transfer pump discharge. Kindly clarify the same.	Polished condensate transfer pump off spec to be routed to Unpolished condensate tank
94.	Part 5	2517 of 7166	P&ID	Bypass line of Heat exchanger	We understood that by pass line of heat exchnager is 12" instead of 14" as inlet line size of polished condensate water is 12" Kindly confirm our understanding.	Bidder understanding is correct.
95.	Part 5	2309 of 7166	PDS	Requirement of future installation pump	<div> <div>d) TWO UNPOLISHED CONDENSATE FEED PUMPS (1 OPERATING + 1 STAND-BY) EACH OF 140 M3/HR</div> <div>RATED CAPACITY. ONE OPERATING PUMP OF SIMILAR CAPACITY TO BE INSTALLED FOR ALKYLATION UNIT IN FUT</div> </div> Kindly clarify the scope of supply ,installation, piping and fitting of one operating feed pump of CPU plant which shall be require for alkylaton unit in future.	Necessary stub connection shall be provided for future installation of Feed Pump.
96.	Part 5	2309 of 7166	PDS	Off spec from MB	<div> <div>PROVISION SHALL BE PROVIDED FOR ROUTING OFFSPEC. CONDENSATE FROM CPU TO UNPOLISHED</div> <div>CONDENSATE TANKS AS WELL AS TO OWS.</div> </div> As per above clause, provision shall be provided ofor routing off spec from MB system to OWS. But as per P&ID, there is no provision for routing off spec from MB system to OWS. Kindly clarify the same.	Bidder to develop during detail engineering.
97.	Part 5	2311 of 7166	PDS	Scope Clarity	<div> <div>26. FUTURE PIPING CONNECTIONS, FLANGES AND SPACE FOR THE FUTURE EQUIPMENTS, PIPING, INSTRUMENTS, PIPING</div> <div>FITTINGS ETC SHALL BE PROVIDED TO INSTALL THE CHAIN (OIL COALSCER, ACTIVATED CARBON FILTERS AND MIXED</div> <div>BED) FOR FUTURE ALKYLATON UNIT.</div> </div> Kindly clarify the scope of equipment, Piping , instrument	Necessary stub connections shall be provided for future installation of CPU

SL. No.	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
					and piping fitting of installation of chain (Oil coalscer, ACF and MB) for future alkylation unit.	Chain.
98.	Part 2	983 of 7166	PDB	Note 2	ETP Treated Water (Note-2) Detail of Note-2 is missing in Process design basis of RO-DM.	Note-2 stands deleted
99.	Part 2	983 of 7166	PDB	Document Missing	Below listed document is not found in tender . 1)DM Plant Process Datasheet No.: B269-475-02-42-DS-1601	Refer Page no 2306 of 7166
100.	Part 5	2516 of 7166	P&ID	Location OF acid & caustic tank	Kindly clarify that Location of acid & caustic measuring/dilution tank of CPU plant shall be considered in Chemical house of RO-DM plant or shall be considered near CPU area.	Shall be considered near CPU area.
101.	Part 2	983 of 7166	PDB	Design flow rate	As per process design basis, Design flow rate inlet to Blow down storage tank is equal to the combined design flow rate Cooling Tower Blow down from CT-1 & CT – 2, Blow Down from Process Units & Blow down from Utility Boiler. Design flow rate for BD storage tank = 434 + 35 + 32 = 501 m3/hr But as per process datasheet, Design flow rate for BD storage tank is 617 m3/hr. It means that provided design flow rate for BD storage tank in process datasheet is including internal recycle backwash water/ Supernatant water (i.e. approx. 116 m3/h) Kindly clarify the same for proper mass balance of effluent stream inlet to BD storage tank.	Bidder understanding is correct. However, mass balance to be developed by the bidder during detailed engg.
102.	Part 2	983 of 7166	PDB	Effluent stream	As per Process design basis , Total three Nos. of effluent streams are inlet to Blow down storage tank . 1) Cooling Tower Blow down from CT-1& CT – 2 2) Blow Down from Process Units	Design temp = 75 deg C, Design Pr = 15 kg/cm2.g

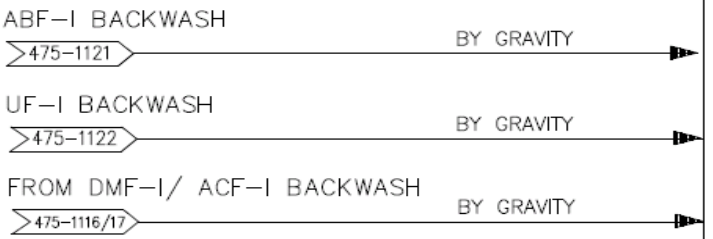
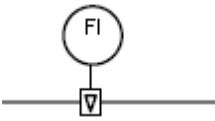
SL. No.	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
					<p>3) Blow down from Utility Boiler</p> <p>But as per P&ID-475-1111, Combined effluent line shall be provided for all above streams.</p> <p>Hence Kindly provide combined design parameter inlet to the Blow down storage tank.</p>	
103.	Part 2	2459 of 7166	PFD	RWTP HRSCC Clarified Water	 <p>As per PFD, RWTP clarified water shall be routed to UF-I feed collection tank.</p> <p>But there is no line available at battery limit from RWTP package.</p> <p>Kindly clarify the same.</p>	The clarified water line from RWTP stands deleted.
104.	Part 2	789 of 7166	Scope of work	Design Flow rate	<p>As per Scope of work and PFD,</p> <p>Design flow rate of RO-II skid = Design flow rate of RO-I permeate + Design flow rate of RO-III permeate + Design flow rate of RO-IV permeate</p> <p>Design flow rate of RO-II skid = $750 + 164 + 59.5 = 973.5$ m³/h</p> <p>But as per process datasheet and equipment list, Design flow rate of RO-II skid is 964 m³/hr .</p> <p>Kindly confirm design flow rate of RO-II skid.</p>	Please follow tender. However, mass balance to be developed by the bidder during detailed engg.
105.	Part 2	789 of 7166	Scope of work	Design Flow rate	<p>As per Scope of work and PFD,</p> <p>Design flow rate of MB system = Design permeate flow rate of RO-II system = 868 m³/hr</p> <p>But as per process datasheet and equipment list, Design</p>	Please follow tender.

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					<p>flow rate of MB system is 850 m3/hr .</p> <p>So kindly clarify about balance flow rate (i.e.18 m3/hr) which will be continuous stored in degassed water tank.</p>															
106.	Part 2	795 of 7166	Scope of work	Cooling water	<p>Cooling water supply for the compressed air system shall be in scope of the contractor.</p> <p>Shall we taken cooling water from available battery limit line for compressed air system?</p> <p>If not then please clarify from where we shall get required cooling water for compressed air system.</p>	Raw water shall be made available to the bidder at plant battery limit. Its usage as cooling water (including treatment if required) and further recycling shall be in the scope of the bidder.														
107.	Part 2	2464 of 7166	P&ID	Provision for chemical waste	<p>24. PROVISION OF ROUTING UF CHEMICAL WASTE TO OWS SHALL BE PROVIDED.</p> <p>There is no provision is provided for routing UF chemical waste to OWS in P&ID of UF system.</p> <p>Kindly clarify the requirement of routing chemical waste from UF system to OWS.</p>	The Note stands deleted.														
108.	Part 2	792 of 7166	Scope of work	Battery limit condition	<table border="1"> <tr> <td>RO-I Permeate to Treated</td><td>Pressure</td><td>Kg/cm2g</td><td></td><td>6</td><td>-</td><td>8</td></tr> <tr> <td>Raw Water make-up line</td><td>Temperature</td><td>°C</td><td>-</td><td>Amb.</td><td>-</td><td>-</td></tr> </table> <p>RO-I permeate line is combined with treated raw water make up line and going to RO-I feed collection tank.</p> <p>So kindly clarify why battery limit condition is provided RO-I permeate line as this line is not going to the outside battery limit.</p>	RO-I Permeate to Treated	Pressure	Kg/cm2g		6	-	8	Raw Water make-up line	Temperature	°C	-	Amb.	-	-	RO-I permeate line is routed to OSBL via bidirectional flow line. The battery limit conditions shall be updated in amendment.
RO-I Permeate to Treated	Pressure	Kg/cm2g		6	-	8														
Raw Water make-up line	Temperature	°C	-	Amb.	-	-														

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109.	Part 5	2466 of 7166	P&ID	Pipe class	Kindly clarify pipe class of backwash waste from backwash waste holding sump-I is A93A or A3A?	Shall be A93A
110.	Part 5	2466 of 7166	P&ID	Line size	Kindly provide the line size of drain from blow down collection tank to ACF backwash sump(CPU).	Provided in tender
111.	Part 5	2468 of 7166	P&ID	Line size	If quantity of HRSCC-I and Flash mixing tank – I are 2 W then inlet line size to Flash mixing tank – I and HRSCC-I is 10"-A93A instead of 14"-A93A. Kindly confirm the same.	Please follow tender
112.	Part 4	1998 of 7166	PDS	MOC of HRSCC –I	MOC of HRSCC – I is RCC Epoxy coated or Epoxy lined ? Kindly confirm.	HRSCC-I shall be RCC Epoxy coating
113.	Part 4	2000 of 7166	PDS	Head of Filter feed pump – I	Head of filter feed pump – I is different in Equipment list and process datasheet. Kindly confirm the head of filter feed pump – I.	Head of filter feed pump shall be 45 m
114.	Part 4	1998 of 7166	PDS	Flow rate of HRSCC –I	Flow rate of HRSCC –I is different in Equipment list and process datasheet. Kindly confirm the Flow rate of HRSCC –I.	Flow Rate of HRSCC-I shall be 308 m3/h. Capacity of HRSCC-I shall be 370 m3/h.
115.	Part 4	2006 of 7166	PDS	Flow rate of Filter air blower- I	Flow rate of Filter air blower- I is different in Equipment list and process datasheet. Kindly confirm the Flow rate of Filter air blower- I.	Flow rate of Filter air blower- I shall be 630 Nm3/h
116.	Part 4	2000 of 7166	PDS	Head of Filter feed pump – I	Hydraulic calculation for Head of head of filter feed pump – I shall be design as per routing treated water line to UF-I feed collection tank or shall be as per routing treated water line to ABF-I. Kindly clarify the same.	Please follow tender
117.	Part 5	2476 of 7166	P&ID	Auto Backwash filter	If backwash system of auto backwash filter is timer based or based on differential pressure across the filter then why manual valve provided instead of auto valve at inlet/outlet	Please follow tender.

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					of auto backwash filter.													
118.	Part 4	2021 of 7166	PDS	Pressure requirement	<div>4 THE RO-I FEED PUMP MOTOR & HEAD SHALL BE DESIGNED FOR PRESSURE REQUIREMENT OF ATLEAST 2 APPROVED MAKES OF RO-I MEMBRANES AT THE END OF THIRD YEAR.AT 15 DEG C DESIGN WATER TEMPERATURE AND 2.0 KG/CM2.G RO-I PERMEATE PRESSURE</div> <p>If requirement of head(Differential & Discharge) for RO-I feed pump shall be less as compare to the provided minimum head (Differential & Discharge) in datasheet then shall we considered minimum head as per tender requirement or shall we considered as per requirement of head as per RO projection.</p> <p>This is applicable for all the RO system.</p> <p>Kindly clarify.</p>	Minimum head as per tender datasheet shall be considered.												
119.	Part 4	2021 of 7166	PDS	Discharge Pressure requirement	<table><tr><td>SUCTION PRESSURE (kg/cm2 a)</td><td>3.0 (NOTE-4)</td></tr><tr><td>MAXIMUM SUCTION PRESSURE (kg/cm2.g)</td><td>NOTE-1</td></tr><tr><td>DISHARGE PRESSURE (kg/cm2.a)</td><td>17 (NOTE-4) (MINIMUM)</td></tr><tr><td>DIFFERENTIAL PRESSURE (kg/cm2.g)</td><td>20 (NOTE-4) (MINIMUM)</td></tr></table> <p>Kindly check the minimum requirement of discharge pressure of RO-I feed pump. It shall be higher than differential pressure of RO-I feed pump.</p>	SUCTION PRESSURE (kg/cm2 a)	3.0 (NOTE-4)	MAXIMUM SUCTION PRESSURE (kg/cm2.g)	NOTE-1	DISHARGE PRESSURE (kg/cm2.a)	17 (NOTE-4) (MINIMUM)	DIFFERENTIAL PRESSURE (kg/cm2.g)	20 (NOTE-4) (MINIMUM)	Shall be updated In amendment				
SUCTION PRESSURE (kg/cm2 a)	3.0 (NOTE-4)																	
MAXIMUM SUCTION PRESSURE (kg/cm2.g)	NOTE-1																	
DISHARGE PRESSURE (kg/cm2.a)	17 (NOTE-4) (MINIMUM)																	
DIFFERENTIAL PRESSURE (kg/cm2.g)	20 (NOTE-4) (MINIMUM)																	
120.	Part 2	790 of 7166	Scope of Work	Design temperature	<table><tr><th>System/Parameter</th><th>Value (Hold)</th></tr><tr><td>SDI at each UF Outlet</td><td>≤ 3</td></tr><tr><td>Total Dissolved Solids in RO-I permeate</td><td>≤ 100 mg/l</td></tr><tr><td>Total Dissolved Solids in RO-II permeate</td><td>≤ 10 mg/l</td></tr><tr><td>Total Dissolved Solids in RO-III permeate</td><td>≤250 mg/l</td></tr><tr><td>Total Dissolved Solids in RO-IV permeate</td><td>≤350 mg/l</td></tr></table> <p>We understood that guaranteed value of all RO permeate water shall be considered at design temperature given in respective datasheet of RO system skid.</p> <p>Kindly confirm our understanding.</p>	System/Parameter	Value (Hold)	SDI at each UF Outlet	≤ 3	Total Dissolved Solids in RO-I permeate	≤ 100 mg/l	Total Dissolved Solids in RO-II permeate	≤ 10 mg/l	Total Dissolved Solids in RO-III permeate	≤250 mg/l	Total Dissolved Solids in RO-IV permeate	≤350 mg/l	Bidder understanding is correct.
System/Parameter	Value (Hold)																	
SDI at each UF Outlet	≤ 3																	
Total Dissolved Solids in RO-I permeate	≤ 100 mg/l																	
Total Dissolved Solids in RO-II permeate	≤ 10 mg/l																	
Total Dissolved Solids in RO-III permeate	≤250 mg/l																	
Total Dissolved Solids in RO-IV permeate	≤350 mg/l																	

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121.	Part 4	2032 of 7166	PDS	Diameter of DG tower	As per surface flow rate , calculate diameter of degasser tower is higher than provided diameter of degasser tower in process datasheet . Kindly check and confirm.	Provided diameter is minimum requirement. Same shall be updated by bidder as per requirement.
122.	Part 5	2485 of 7166	P&ID	Document Missing	P&ID of DM water Storage tank is missing in tender document P&ID no. : B269-02-42-475-1111 And also process datasheet of DM water storage tank is missing.	Refer Page 2518 of 7166
123.	Part 4	2039 of 7166	PDS	MOC of MB Blower	Kindly note that MOC of MB air scouring blower shall be C: CI Gr. 260 ,I: CI Gr. 260 , S: EN-8 instead of CS. Kindly check and confirm	Please follow tender
124.	Part 4	2046 of 7166	PDS	Quantity of HRSCC – II sludge sump agitator	As per process datasheet , Quantity of HRSCC – II sludge sump agitator are 2 Nos. But as per Equipment list, Quantity of HRSCC – II sludge sump agitator is 1 No. Kindly confirm the quantity of HRSCC – II sludge sump agitator.	Quantity of HRSCC – II sludge sump agitator shall be 2 nos.
125.	Part 5	2464 of 7166	P&ID	Drain destination	11. OVER FLOW AND DRAIN CONNECTION 'D' SHALL BE PROVIDED FOR ALL ABOVE GROUND SUMP & TANKS WITH DRAIN DESTINATION TO BETWEEN WASTE COLLECTION SUMP-1. We understood that overflow and drain from all sump & tanks (connection 'D') shall be routed to backwash waste collection sump – I. Kindly confirm our understanding.	Bidder understanding is correct.

SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
126.	Part 5	2495 of 7166	P&ID	Routing of Piping	 <p>As per P&ID, Separate line from ABF-I backwash , UF-I backwash and DMF-I/ ACF-I backwash shall be backwash waste collection sump – I.</p> <p>Shall we combine all backwash waste water line and provide common inlet to backwash waste collection sump-I.</p> <p>Kindly confirm.</p> <p>This is applicable for backwash waste collection sump-II.</p>	Please follow tender. Drain network to be developed by bidder.
127.	Part 4	2065 of 7166	PDS	Flow rate	Kindly check and confirm the flow rate of RO-IV feed pump. It should be 108 m3/hr.	Please follow tender.
128.	Part 5	2505 of 7166	P&ID	Requirement of Bypass arrangement	 <p>Kindly clarify requirement of bypass arrangement on flow indicator (rotameter) or else we shall provide spool piece during maintenance of flow indicator.</p>	Please follow tender
129.	Part 4	2072 of 7166	PDS	Capacity of Dosing pump	<p>As per process datasheet, capacity of Antiscalant Solution Dosing Pumps for RO-III & IV is 25 LPH ,</p> <p>But as per Equipment list, capacity of Antiscalant Solution Dosing Pumps for RO-III & IV is 100LPH.</p> <p>Kindly confirm the capacity of Antiscalant Solution</p>	Capacity of Antiscalant Solution Dosing Pumps for RO-III & IV is 25 LPH

SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
					Dosing Pumps for RO-III & IV.	
130.	Part 4	2073 of 7166	PDS	Capacity of Dosing pump	<p>As per process datasheet, capacity of Antiscalant Solution Dosing Pumps for ZLD Evaporator is 100 LPH ,</p> <p>But as per Equipment list, capacity of Antiscalant Solution Dosing Pumps for ZLD Evaporator is 25 LPH.</p> <p>Kindly confirm the capacity of Antiscalant Solution Dosing Pumps for ZLD Evaporator.</p>	Capacity of Antiscalant Solution Dosing Pumps for ZLD Evaporator is 100 LPH
131.	Part 4	2073 of 7166	PDS	Quantity of Dosing pump	<p>As per process datasheet, quantity of Antiscalant Solution Dosing Pumps for ZLD Evaporator are 2 Nos (1W+1S) ,</p> <p>But as per Equipment list, quantity of Antiscalant Solution Dosing Pumps for ZLD Evaporator are 3 Nos (2W+1S).</p> <p>Kindly confirm the quantity of Antiscalant Solution Dosing Pumps for ZLD Evaporator.</p>	Quantity of Antiscalant Solution Dosing Pumps for ZLD Evaporator shall be 2 Nos (1W+1S)
132.	Part 4	2073 of 7166	PDS	Recirculation line	<p><u>2 RECIRCULATION LINE SHALL BE PROVIDED FOR THE PUMP SYSTEM</u></p> <p>Kindly clarify the requirement of recirculation line in dosing pump system as there is no recirculation line shall be provided in p&id of dosing system.</p>	Recirculation line shall be provided for chemical dosing tanks and centrifugal pumps
133.	Part 4	2081 of 7166	PDS	Quantity of centrifuge	<p><u>ONE DEDICATED CENTRIFUGE EACH FOR HRSCC-I, HRSCC-II AND LIME SODA CLARIFIER SLUDGE.</u></p> <p>If one dedicated centrifuge shall be require for HRSCC-I, HRSCC-II and Lime Soda clarifier sludge then qunatity of centrifuge shall be 3W + 0S instead of 2W + 1S.</p> <p>Kindly clairfy the same.</p>	Noted
134.	Part 4	2083 of 7166	PDS	CIP system for UF system	<p>If we require CPI system for both UF system then shall we taken tapping from RO - cip system or shall we need to provide separate CIP system for UF system.</p>	CIP system for UF-I & II shall be common. CIP for

SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY					EIL/IOCL REPLY										
					Kindly confirm.					RO-I/II/III/IV shall be common. No connection between CIP of UF & RO systems.										
135.	Part 4	2087 of 7166	PDS	Bulk storage tank	We understood that bulk storage tank and unloading pump for Fecl3 dosing system has been removed from scope of supply. Kindly confirm our udnerstanding.					Bidder understanding is correct										
136.	Part 4	2094 of 7166	PDS	Quantity of Dosing pump	As per process datasheet, quantity of Lime Solution Dosing Pumps for RODM HRSCC-I& II are 2 Nos (1W+1S) , But as per Equipment list, quantity of Lime Solution Dosing Pumps for RODM HRSCC-I& II are 3 Nos (2W+1S). Kindly confirm the quantity of Lime Solution Dosing Pumps for RODM HRSCC-I& II.					Quantity of Lime Solution Dosing Pumps for RODM HRSCC-I & II shall be 2 Nos (1W+1S)										
137.	Part 4	1909 of 7166	Equipment list	Dosing system	<table><tr><td>2(1W+1S)</td><td>475-T-130 A/B</td><td>Chemical Dosing Tank</td><td>Effective Capacity: 1 m³ Size: 1.0 m dia x 1.3 m LD + 0.3 m FB each + 0.2 m DVD</td><td>Solid FRP</td></tr><tr><td>2(1W+1S)</td><td>475-P-154 A/B</td><td>Chemical Dosing Pump</td><td>Capacity: DDE Head : DDE</td><td>C: PP/PVDF, D:TEFLON</td></tr></table> Kindly provide the destination of above dosing tank and pump.					2(1W+1S)	475-T-130 A/B	Chemical Dosing Tank	Effective Capacity: 1 m ³ Size: 1.0 m dia x 1.3 m LD + 0.3 m FB each + 0.2 m DVD	Solid FRP	2(1W+1S)	475-P-154 A/B	Chemical Dosing Pump	Capacity: DDE Head : DDE	C: PP/PVDF, D:TEFLON	The Tank and pump set stands deleted
2(1W+1S)	475-T-130 A/B	Chemical Dosing Tank	Effective Capacity: 1 m ³ Size: 1.0 m dia x 1.3 m LD + 0.3 m FB each + 0.2 m DVD	Solid FRP																
2(1W+1S)	475-P-154 A/B	Chemical Dosing Pump	Capacity: DDE Head : DDE	C: PP/PVDF, D:TEFLON																
138.	Part 4	797 of 7166	Scope of Work	MOC of piping	<table><tr><td colspan="3">Cleaning Chemicals</td><td colspan="2">CPVC</td></tr></table> As per Scope of work, MOC of Piping for cleaning chemical is CPVC. But as per P&ID, MOC of piping of RO- CIP chemical line is A1K. Kindly confirm MOC of piping for RO CIP cleaning.					Cleaning Chemicals			CPVC		Line PMS as per pressure rating and line size shall be determined by the bidder for RO CIP.					
Cleaning Chemicals			CPVC																	

SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY			EIL/IOCL REPLY
139.	Part 4	797 of 7166	Scope of Work	MOC of piping	Sodium Bisulphite	A1K		MOC of piping for Sodium bisulphite shall be A1K.
					<p>As per Scope of work, MOC of piping for Sodium bisulphite is A1K.</p> <p>But as per P&ID, MOC of piping of Sodium bisulphite line is A91S.</p> <p>Kindly confirm MOC of piping for Sodium bisulphite.</p>			
140.	Part 4	797 of 7166	Scope of Work	MOC of piping	From inlet isolation valve (manual) of MB up to outlet isolation valve (manual) of MB including all frontal piping for MB and piping on MB. Caustic (up to 5%)	CPVC or Equivalent		MOC of MB frontal piping shall be A1K.
					<p>Kindly confirm that MOC of MB frontal piping shall be considered as per Scope of work or shall be considered as per P&ID of MB system.</p>			
141.	Part 4	2126 of 7166	PDS	Location of Naocli dosing system	16 NaOCl SHALL BE STORED IN UF SHED. STORAGE AREA FOR 20 DAYS TO BE PROVIDED IN UF SHED			Bidder understanding is correct
					<p>From above clause, Weudnerstood that NaOCL dosing tank and dosing pump shall be located in UF shed.</p> <p>Kindly confirm our understanding.</p>			
142.	Part 4	2126 of 7166	PDS	HCL dosing pump	<p>As per P&ID, Some of HCL dosing pumps are diectly taking suction from bulk storage tank.</p> <p>Hence we understood that it shall be located outside chemical house.</p>			Bidder understanding is correct
143.	Part 4	2126 of 7166	PDS	Bulk Storage tank	<p>We understood that shed is not require for Bulk storage tanks.</p> <p>Kindly confirm our understanding.</p>			Please follow tender
144.	Part 4	1909 of 7166	Equipment list	Shed requirement	UF-RO-MB SHED	50 m W x 100 m L X 6 m Clear Height	Precoated galvalume steel sheet roofing and side cladding	Please follow tender.
					<p>We udnerstood that shed shall be required for UF and RO</p>			

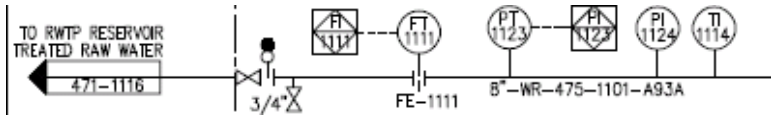
SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
					system not for MB system. Kindly confirm our understanding.	
145.	Part 4	1909 of 7166	Equipment list	Dimension of Chemical House	As per Equipment list , height of chemical house (12m) is including ground floor and first floor.	Bidder understanding is correct
146.	Part 4	1909 of 7166	Equipment list	Dimension	We understood that total height (including ground floor and first floor). of centrifuge building is 6m. Kindly confirm our understanding.	Bidder understanding is correct
147.	Part 6	2564 of 7166	Scope drawing of piping B/L	Battery limit	As per scope drawing of Piping, All the incoming/outgoing pipings shall routed on pipe rack at outside the scope battery limit. Also as per scope drawing inside the scope battery limit, all the incoming/outgoing pipings shall be routed on pipe rack. So shall we route all the incoming/outgoing pipings on Pipe sleeper instead of Pipe rack inside the scope battery limit ? Kindly confirm.	Beyond the battery limit arrangement, within ISBL ,sleeper arrangement is not preferred and pipe rack arrangement is indicated as the sleeper arrangement restricts the mobility within the unit.
148.	Part 6	2564 of 7166	Scope drawing	Storm water drain disposal	Kindly provide bottom level at tie point of storm water drain.	Bed level of storm water drain shall be provided during detailed engineering.
149.	Part 6	2564 of 7166	Scope drawing	Pipe rack width	Kindly note that width of pipe rack located at battery limit is occupied large area of plant. Can bidder change width of pipe rack as per their design philosophy?	The exact width of pipe rack has not been mentioned in the drawing B269-475-16-43-SK-8701. The actual width of the pipe rack shall be

SL. No.	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
						decided by the bidder based on the number of lines and the pipe sizes.
150.	Part 6	2550 of 7166	Scope drawing	Pipe rack/Pipe sleeper requirement	We understood that Pipe rack and pipe sleeper both are suitable for piping routing inside plant area.	Beyond the battery limit arrangement, within ISBL ,sleeper arrangement is not preferred and pipe rack arrangement is indicated as the sleeper arrangement restricts the mobility within the unit.
151.	Part 6	2550 of 7166	Scope drawing	Minimum width Road for vehicular movement	Kindly specify the requirement of minimum width of road for vehicular movement.	Bidder to follow Engineering design basis.
152.	Part 6	2550 of 7166	Scope drawing	Cross section of pipe rack at battery limit	Kindly provide cross section of pipe rack/sleeper at battery limit with height of pipe rack.	<p>The tentative coordinates of the OSBL pipe rack interface with RWTP & RO-DM-ZLD-CPU package limit is indicated in B269-487-16-43-SK-8701.</p> <p>The tentative Portal Cross-section Width is 6M /8M. No. of portals in the cross-section shall be finalised during detailed engineering</p>

SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
						The tentative elevations are 106.250 & 108.750.
153.	Part 6	2550 of 7166	Scope drawing	Design condition at battery limit	Kindly clarify that design conditioned of battery limit lines to be considered at grade level or at pipe rack?	Design conditions of battery limit lines to be considered at grade level.
154.	Part 5	2432 of 7166	Indicative Layout	Relocation of Unit	We understood that equipment allocated in indicative layout is just for the our reference only. We can change the location of any equipments as per our design philosophy except substation building and control room building. Kindly confirm our understanding.	Please follow tender. OISD norms to be followed for equipment layout and distance from OSBL units to be maintained as per OISD.
155.	Part 5	2432 of 7166	Indicative Layout	Combined RCC unit	Shall we combined RCC tanks/equipment with common wall if require?	Please follow tender
156.	-	-	-	Changes in Tanks	We understand that all the Storage Tank MOC, size and type can be changed as per the space provided in layout. Please confirm our understanding.	Please follow tender
157.	-	-	-	Scope of Sludge disposal	Please clarify the scope of the sludge disposal during Pre-commissioning, trial run for 30 days before commissioning; commissioning and PGTR.	Sludge disposal during pre-commissioning, trial run, commissioning and PGTR shall be in bidder's scope
158.	-	-	-	Days for Commissioning	Please provide the minimum days to be consider for the commissioning.	Please follow tender
159.	-	-	-	Governing Document	Please provide order of precedence in case of any mismatch found in the documents.	Bidder to follow bid document


SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
160.	-	-	-	AC requirement in the Operator Room	Please clarify the requirement of the AC in the operator Room.	Please follow tender
161.	Part 4	2126 of 7166	PDS	CIP system	CIP system shall be located in UF/RO shed or Chemical house. Kindly clarify.	CIP shall be located in UF/RO shed
162.	Part 4	2783 of 7166	PDS	Operation during trial run	Pre-commissioning, trial run for 30 days before commissioning; commissioning; Kindly confirm that scope of operation of plant during trial run for 30 days before commissioning .	Shall be in bidder's scope.
163.	Part 1	631 of 7166	-	Loading criteria	We understood that datum value (in BkW) shall be average of the total guaranteed shaft power (in BkW) of all the qualified bidder. Kindly confirm our understanding.	Bidder understanding is correct
164.	Part 2	868 of 7166	O&M	Scope of work	We understood that O&M of condensate polishing unit (PNCP area) shall be not in bidder scope.	Bidder understanding is correct
165.	Part 2	868 of 7166	O&M	Scope of work	What is PRDS system.	Pressure Reducing and Desuperheating System
166.	Part 2	872 of 7166	O&M	Scope of work	Annexure-I specifies minimum spares to be kept in stock & handed over to IOCL by the Contractor for 2 years Operation & Maintenance contract of the plant. All other spares We understood that after completion of O&M contract , Minimum spare as per annexure –I to be handed over to IOCL by contactor. Kindly confirm our understanding.	Bidder understanding is correct

SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY				EIL/IOCL REPLY				
167.	Part 2	872 of 7166	O&M	Scope of work	<div>- Arrangement for Conveyance of the Chemical Sludge generated in the Raw Water Treatment Plant and Chemical Sludge and Dried Salts generated in RO based DM Plant & Condensate Polishing Unit and Zero Liquid Discharge Plant and their Disposal to the Secured Landfill shall be done by M/s IOCL.</div> <div>We understood that transportation and disposal cost of chemical sludge and dried salts from plant area to secured landfill shall be done by M/s IOCL.</div> <div>Kindly confirm our understanding.</div>				Bidder understanding is correct				
168.	Part 5	2518 of 7166	P&ID	Discrepancy	<div>As per P&ID B269 – 02-42-475-1111, Line size of treated effluent from ETP is 10"-A1A.</div> <div>But as per P&ID B269-17-44-475-1111, Line size of treated effluent from ETP is 12"-A1A.</div> <div>Kindly confirm the Line size of treated effluent from ETP at battery limit of RO-DM.</div>				Line size of 12" to be considered.				
169.	Part 5	2518 of 7166	P&ID	Discrepancy	<div>As per P&ID B269 – 02-42-475-1111, Line size of DM water outlet is 16"-A1K.</div> <div>But as per P&ID B269-17-44-475-1111, Line size of DM water outlet is 18"-A1K.</div> <div>Kindly confirm the Line size of DM water outlet at battery limit of RO-DM.</div>				DM Water outlet line already mentioned as 18" in P&ID.				
170.	Part 2	792 of 7166	Scope of Work	Battery limit condition	<table><tr><td>DM Water to OSBL</td><td>Pressure</td><td>Kg/cm2g</td><td>As per Process Datasheet No.: B269-475-02-42-DS-1601</td></tr></table> <div>1)We understood that DM water storage tank and DM water transfer pump shall be in bidder scope. Tie in point at battery limit of DM water outlet is at discharge of DM water transfer pump not at MB outlet header.</div> <div>Kindly confirm our understanding.</div>				DM Water to OSBL	Pressure	Kg/cm2g	As per Process Datasheet No.: B269-475-02-42-DS-1601	1. Bidder understanding is correct 2. Follow as per Pump PDS.
DM Water to OSBL	Pressure	Kg/cm2g	As per Process Datasheet No.: B269-475-02-42-DS-1601										

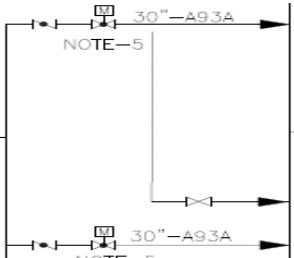
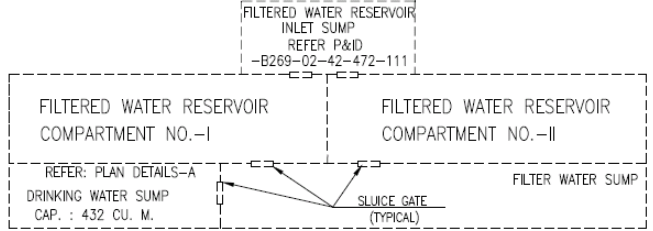
SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
					2) As per Process datasheet, required pressure at battery of RO-DM unit is not given. Hence we are considering differential pressure of DM water transfer pump as per process datasheet only. Kindly confirm.	
171.	Part 5	2518 of 7166	P&ID	Battery limit line	 <p>As per P&ID B269 – 02-42-475-1111, there is outgoing line provided from RO-DM plant to RWTP reservoir treated raw water.</p> <p>But in P&ID of RO-DM plant, there is no line going to RWTP from RO-DM plant at battery limit.</p> <p>Kindly clarify about this line.</p>	Treated water line from RODM plant (line no 8"-WR-475-1101-A93A) shall be deleted. 10"-WR-475-1102-A93A shall be considered as two way line. Surplus RO Permeate generated in RODM plant shall be routed to CW makeup header.
172.	Part 5	2518 of 7166	P&ID	Discrepancy	<p>As per P&ID B269 – 02-42-475-1111, Line size of LP steam at battery limit is 2"-A2A-IH.</p> <p>But as per P&ID B269-17-44-475-1111, Line size of LP steam at battery limit is 4"-A2A-IH.</p> <p>Kindly confirm the Line size of LP steam at battery limit of RO-DM.</p>	As per Rev-0 P&ID, 4" LP steam line to be considered.
173.	Part 5	2518 of 7166	P&ID	Discrepancy	<p>As per P&ID B269- 02-42-475-1111 & as per P&ID B269-17-44-475-1111, all battery limit line and instruments are repeated.</p> <p>Kindly clarify that which P&ID shall be consider for Battery limit line and instrument.</p>	In Battery limit P&ID(B269-17-44-475-1111) instrument tag numbers are not mentioned to avoid

SL. No.	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
						repetition. Please note that instruments mentioned in P&ID are minimum requirement however Vendor to provide new instruments based on their final design.
174.	Part 5	2519 of 7166	P&ID	Document Missing	9. PACKAGE VENDOR TO PROVIDE THE PIPING,INSTRUMENTATION, SAMPLING CONNECTION etc. ON COOLING WATER LINES IN LINE WITH BEDB PART-B SECTION 6.4.2 FOR ALL INDIVIDUAL COOLING WATER CONSUMERS. Document BEDB part-B is missing in tender document.	Refer page 810 of 7166
175.	Part 5	2519 of 7166	P&ID	Discrepancy	As per P&ID B269 – 02-42-476-1111, Line size of Cooling water supply at battery limit is 20"-A93A. But as per P&ID B269-17-44-476-1111, Line size of Cooling water supply at battery limit is 16"-A93A. Kindly confirm the Line size of Cooling water supply at battery limit of RO-DM.	i) CWS & CWR header to RODM/CPU/ZLD package B/L shall be 20". ii) Refer P&ID B269-476-17-44-1111, for package interface. Line size shown in this P&ID are preliminary. Vendor to finalize the line size based on their detail

SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY																
						engineering requirement.																
176.	Part 5	2263 of 7166	PDS	Heat Exchanger	<table><tr><th colspan="2">SUSPECT CONDENSATE</th><th colspan="2">POLISHED CONDENSATE</th></tr><tr><th>IN</th><th>OUT</th><th>IN</th><th>OUT</th></tr><tr><td>Case-1 / Case-2</td><td>Case-1 / Case-2</td><td>Case-1 / Case-2</td><td>Case-1 / Case-2</td></tr><tr><td>226400 / 351400</td><td>226400 / 351400</td><td>419700 / 294700</td><td>419700 / 294700</td></tr></table> <p>As per datasheet of heat exchanger, Flow rate of suspect condensate + pure largest pure condensate is 351.4 m3/hr. As per datasheet of CPU package, Flow rate of suspect condensate + pure largest pure condensate + flow rate of future alkylation unit is 375 m3/hr.</p> <p>Hence we understood that flow rate of future alkylation unit is 23.6 m3/hr. Kindly confirm.</p>	SUSPECT CONDENSATE		POLISHED CONDENSATE		IN	OUT	IN	OUT	Case-1 / Case-2	Case-1 / Case-2	Case-1 / Case-2	Case-1 / Case-2	226400 / 351400	226400 / 351400	419700 / 294700	419700 / 294700	351.4 m3/hr is including future alkylation requirement (without any margin). Please proceed as per attached data sheet for design.
SUSPECT CONDENSATE		POLISHED CONDENSATE																				
IN	OUT	IN	OUT																			
Case-1 / Case-2	Case-1 / Case-2	Case-1 / Case-2	Case-1 / Case-2																			
226400 / 351400	226400 / 351400	419700 / 294700	419700 / 294700																			
177.	Part 5	2263 of 7166	PDS	Flow rate of Cooling water	<table><tr><th colspan="2">COOLING WATER (NOTE-6, 7)</th></tr><tr><th>IN</th><th>OUT</th></tr><tr><td>Case-1 / Case-2</td><td>Case-1 / Case-2</td></tr><tr><td>647000 / 647000</td><td>647000 / 64700</td></tr></table> <p>As per PID line size of Cooling water inlet to heat exchanger is 8". Which is not suitable for 647 m3/hr flow rate of cooling water.</p> <p>Kindly clarify the same.</p>	COOLING WATER (NOTE-6, 7)		IN	OUT	Case-1 / Case-2	Case-1 / Case-2	647000 / 647000	647000 / 64700	As per Process P&ID (B269-02-41-476-1111) 16" line size shown for CPU unit. Bidder to reconfirm the size based on package hydraulics.								
COOLING WATER (NOTE-6, 7)																						
IN	OUT																					
Case-1 / Case-2	Case-1 / Case-2																					
647000 / 647000	647000 / 64700																					
178.	Part 5	2263 of 7166	PDS	Operating temperature	<p>Why operating temperature of Polished condensate water is different for Case -1 and Case -2 ?</p> <p>As operating temperature of polished condensate water will be same for both the case.</p>	The operating temperature provided in PDS is correct. In Case-2, all condensate are passing through Feed Polish & CW exchanger.																

SL. No.	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
179.	Part 5	2519 of 7166	P&ID	Discrepancy	Backwash waste from ACF backwash collection sump shall be routed to battery and transfer to ETP system. This line is not provided in P&ID B269 – 02-42-476-1111. Kindly clarify the same.	Refer P&ID B269-476-17-44-1111
180.	Part 5	2512 of 7166	P&ID	Drain route	 Kindly provide full of ABS and provide the routing overflow rate and drain of CPU feed tank.	ABS: ABF backwash Sump Rest to be calculated by bidder
181.	Part 5	2330 of 7166	PDS	Temperature of polished condensate	As per Process datasheet of polished condensate tank of CPU plant (PNCP) , Operating temperature of Polished condensate is ambient. But as per datasheet of heat exchanger, Operating temperature of Polished condensate is 68.7 degree c. Kindly clarify the operating temperature of Polished condensate.	Follow as per Exchanger PDS. Polished condensate temp 68.7 deg C is ok.
182.	Part 4	1933 of 7166	PDS	Retaining wall	<p><u>9 THE LAMELLA CLARIFIER AND UF FEED SUMP & PUMP SHALL BE A SINGLE STRUCTURE</u></p> From above clause, We understood that common wall structure to be provide for lamella clarifier and UF feed sump. Kindly clarify the same.	Lamella clarifier and UF Feed Sump shall be separate structure
183.	Part 4	1941 of 7166	PDS	Freed board of backwash waste holding sump	Kindly note that 0.5 Freed board of backwash waste holding sump is not sufficient as drain from all units shall be transfer to backwash waste holding sump through process drain network. Kindly check and revised free board.	Free board of 0.5 m is minimum requirement. Bidder shall increase the same if required during detailed

SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL
						REPLY
						engineering.
184.	Part 4	1945 of 7166	PDS	MOC	As per process datasheet, MOC of HRSCC(Backwash) is RCC epoxy lined but as per equipment list MOC of HRSCC(Backwash) is RCC epoxy coated. Kindly confirm the MOC of HRSCC(backwash) for RWTP.	MOC of HRSCC (backwash) shall be RCC Epoxy coated
185.	Part 4	1948 of 7166	PDS	Flow rate of clarified water transfer pump (RWTP)	As per equipment, Flow rate of HRSCC outlet water is 340 m3/hr and flow rate of clarifier water transfer pump is 200 m3/hr So kindly clarify about the balance flow rate of 140 m3/hr.	Balance of water shall be bypassed to UF Feed Sump.
186.	Part 2	976 of 7166	PDB	Capacity of treated water reservoir	<div> <div>Treated Water Reservoir</div> <div>1 (Two Compartments)</div> <div>8 hrs. retention capacity of treated water</div> </div> Kindly clarify that Capacity of treated water reservoir is consider as per 8 hrs. of retention time or shall be considered as 16400 m3.	Capacity of Treated water reservoir shall be 16400 m3.
187.	Part 4	1982 of 7166	PDS	Cover Requirement for treated water reservoir	Kindly clarify the cover requirement for treated water reservoir (RWTP).	The reservoir is RCC covered.
188.	Part 4	1983 of 7166	PDS	Cover Requirement for treated water sump	Kindly clarify the cover requirement for treated water sump (RWTP).	The sump is RCC covered.
189.	Part 4	1983 of 7166	PDS	Document missing	Kindly note that below listed document is missing in tender document: - P&ID of RAW water system : B269-02-42-472-1111	Latest Process P&ID for Raw water system shall be attached along with amendment.
190.	Part 6	2551 of 7166	P&ID	P&ID of Drinking water	Kindly provide MOC of Drinking water transfer pump (P-4801A/B/C).	Refer data sheet B269-81-41-DS-44801 attached in

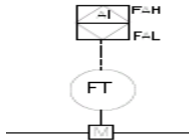
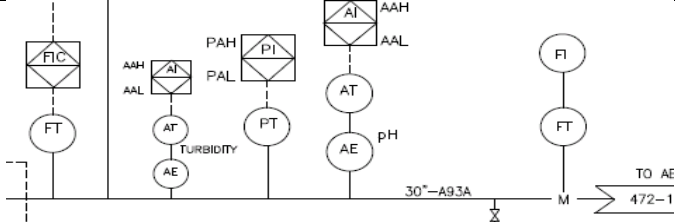
SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
						tender. Page no. 2344 of 7166
191.	Part 6	2445 of 7166	P&ID	P&ID of treated water reservoir	 <p>As per P&ID , Two separator header from UF outlet header shall be connected to treated water reservoir compartment-I&II.</p> <p>Kindly clarify reason to provide additional tapping from inlet header of treated water reservoir compartment-I to treated water reservoir compartment-II with gate valve.</p>	additional tapping from inlet header of treated water reservoir compartment-I to treated water reservoir compartment-II with gate valve is not required. Same shall be updated in amendment
192.	Part 6	2445 of 7166	P&ID	Details of filtered water reservoir	 <p>The details of filtered water reservoir in P&ID B269-17-44-472-1111 and P&ID B269-999-81-41-34222 is not matching with each other.</p> <p>Kindly clarify which P&ID to be follow for costing.</p>	Please follow tender
193.	Part 6	2451 of 7166	P&ID	P&ID of Drinking water	Kindly provide the dimension of drinking water sump.	Refer P&ID No. B269-999-81-41-34222 attached with

SL. No.	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
						the tender for Drinking water sump capacity, Sizing shall be fix during detail engineering accordingly
194.	Part 6	2451 of 7166	P&ID	P&ID of Drinking water	Scope and details of filter water sump and filtered water reservoir inlet sump is in not clear. Kindly brief scope of work and details of filter water sump and filtered water reservoir inlet sump.	Refer P&ID B269-02-42-472-1111 for filter water reservoir inlet sump
195.	Part 4	1955 of 7166	PDS	Type of Pump	As per process datasheet, type of pump for Fe ₂ (SO ₄) ₃ /PAC dosing pump is horizontal centrifugal. but as per P&ID, type of pump for Fe ₂ (SO ₄) ₃ /PAC dosing pump is positive displacement diaphragm. Kindly confirm the type of Fe ₂ (SO ₄) ₃ /PAC dosing pump.	Fe ₂ (SO ₄) ₃ /PAC dosing pump is horizontal centrifugal
196.	Part 2	768 of 7166	Scope of work	Utilities at battery limit	The following utilities will be supplied at the common battery limit of the RWTP/RODM/ZLDP . CPU battery limit : Kindly note that battery limit location of RWTP and RODM/ZLD/CPU plant shall be provided on different location of plant. Hence utilities of plant for RWTP and RODM/ZLD/CPU plant shall be supplied at individual battery limit of respective plant. Kindly confirm the same.	Bidder understanding is correct
197.	Part 5	2445 of 7166	P&ID	% Caustic at battery limit	Kindly provide % of caustic available at battery limit of RWTP.	20% caustic
198.	Part 5	2454 of 7166	P&ID	Quantity of Lime slaker pump	As per P&ID, Quantity of lime slaker pump is 3 Nos and as per datasheet and equipment list, Quantity of lime slaker	Quantity of lime slaker pump is 2 Nos.

SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY				
					<p>pump is 2Nos.</p> <p>Kindly confirm the quantity of lime slaker pump.</p>	Same shall be updated in amendment.				
199.	Part 2	975 of 7166	PDB	NaOCl dosing facility	<p>water shall be routed to a separate drinking water sump after mixing with NaOCl (Food Grade) for disinfection (Post-Chlorination). The requirement of drinking water for refinery is</p> <p>Kindly clarify the requirement of Naocl dosing system in drinking water system</p>	Please follow tender				
200.	Part 4	1896 of 7166	Equipment list	Quantity of Filter Backwash pump-I	<p>As per process datasheet, Quantity of Filter Backwash pump-I are 3 Nos. But as per Equipment list, Quantity of Filter Backwash pump-I is 2 Nos.</p> <p>Kindly confirm the quantity of Filter Backwash pump-I.</p> <p>Same query is for Filter air scouring blower – I.</p>	Quantity of Filter Backwash pump-I shall be 2 Nos. Quantity of Filter air scouring blower – I shall be 2 nos.				
201.	Part 4	2109 of 7166	Process Datasheet	Holding period of each tank	<table><tr><td>HOLDING PERIOD OF EACH TANK (hrs) (MIN)</td><td>10 DAYS REQUIREMENT IN RWTP/ETP/RODMP/CPU/PROCESS</td></tr></table> <p>As per process datasheet, Holding period of caustic storage tank is 10 days.</p> <table><tr><td>2</td><td>Tank sizes indicated are minimum requirements. Higher tank sizes (equivalent to 20 days requirement) to be provided if required.</td></tr></table> <p>But in note 2 of process datasheet, Holding period of caustic storage tank is 20 days.</p> <p>Kindly confirm the holding period of caustic storage tanks.</p>	HOLDING PERIOD OF EACH TANK (hrs) (MIN)	10 DAYS REQUIREMENT IN RWTP/ETP/RODMP/CPU/PROCESS	2	Tank sizes indicated are minimum requirements. Higher tank sizes (equivalent to 20 days requirement) to be provided if required.	Each tank shall have 10 days storage of 20% caustic. Total 20 days inventory is required.
HOLDING PERIOD OF EACH TANK (hrs) (MIN)	10 DAYS REQUIREMENT IN RWTP/ETP/RODMP/CPU/PROCESS									
2	Tank sizes indicated are minimum requirements. Higher tank sizes (equivalent to 20 days requirement) to be provided if required.									
202.	Part 4	2111 of 7166	Process Datasheet	Agitator for tank	<p>As per process datasheet, Agitator is required for CEB-I HCL dosing tank, CEB-II NaOH tank and CEB-III NaOCL tank.</p> <p>But in P&ID and equipment list, Agitator is not required for CEB-I HCL dosing tank , CEB-II NaOH tank and CEB-III NaOCL tank.</p> <p>Kindly clarify the requirement of agitator for CEB-I HCL dosing tank , CEB-II NaOH tank and CEB-III NaOCL tank.</p>	Agitator is not required for CEB-I/II/III tanks.				

SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY		
203.	Part 4	2079 of 7166	Process Datasheet	Caustic dosing for RO-II	In P&ID, Caustic dosing pump for RO-II system is not provided. Kindly provide the location of suction pipe of caustic dosing pump for RO-II.	Shall be updated in Amendment		
204.	Part 2	801 of 7166	Scope of Work	Drain from chemical area	Chemical drain from RO-DM area should be routed to a neutralization pit and after neutralization shall be routed to the backwash waste holding sump-II in RODM section. Kindly clarify the same.	Bidder understanding is correct		
205.	Part 4	1917 of 7166	Equipment list	Height of MB (CPU)	Height of MB (CPU) Unit is different in process datasheet and equipment list. Kindly confirm the height of MB (CPU) Unit.	Height of MB (CPU) shall be 2.8 m		
206.	Part 5	2162 of 7166	Process Datasheet	Capacity of CPU feed tank	<table><tr><td>RESIDENCE TIME (hrs) (@ DESIGN FLOW) (MINIMUM)</td><td>17</td></tr></table> As per process datasheet, Effective capacity of CPU feed tank is 4553 m3 but as per provided residence time at design flow rate, effective capacity of CPU feed tank is 6375 m3. Hence kindly confirm the effective capacity of CPU feed tank.	RESIDENCE TIME (hrs) (@ DESIGN FLOW) (MINIMUM)	17	The residence time of CPU Feed tank shall be 12 hours
RESIDENCE TIME (hrs) (@ DESIGN FLOW) (MINIMUM)	17							
207.	Part 5	2170 of 7166	Process Datasheet	Capacity of Polished condensate tank	<table><tr><td>RESIDENCE TIME (hrs) (@ DESIGN FLOW) (MINIMUM)</td><td>16</td></tr></table> As per process datasheet, Effective capacity of polished condensate tank is 5366 m3 but as per provided residence time at design flow rate, effective capacity of polished condensate tank is 6992 m3. Hence kindly confirm the effective capacity of Polished condensate tank.	RESIDENCE TIME (hrs) (@ DESIGN FLOW) (MINIMUM)	16	The residence time of polished condensate tank shall be ~12 hours
RESIDENCE TIME (hrs) (@ DESIGN FLOW) (MINIMUM)	16							
208.	Part 4	1920 of 7166	Equipment list	Existing equipment details	Kindly provide the details of equipment of existing PNCP RO DMP & CPU which shall be utilized for new CPU plant.	Details are already provided in the		

SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY		
						tender. Further details as required shall be provided during detailed engineering.		
209.	Part 2	983 of 7166	Process Design basis	Design parameter	We understood that Maximum parameter of cooling tower blow down water shall be consider for Design of RO-DM plant. Kindly confirm our understanding.	Bidder understanding is correct		
210.	Part 5	2459 of 7166	PFD	CIO2 Dosing	As per PFD, CIO2 shall be dose in Blow down collection tank and UF- I feed collection tank. But in P&ID and SOW, there is no CIO2 dosing connection in blow down collection tank and UF-I feed collection tank. Kindly clarify the requirement CIO2 dosing system in RO-DM section.	No CIO2 dosing envisaged in RODMP. Latest revision of SFD shall be provided in amendment.		
211.	Part 2	789 of 7166	Scope of work	Design Flow rate	As per Scope of work and PFD, Design flow rate of UF-I skid = Design flow rate of Filter Outlet + Design Flow rate of ETP treated + Design flow rate of ZLD distillate Design flow rate of UF-I skid = 600 + 450 + Design flow rate of ZLD distillate. Hence Design flow rate of UF-I skid is more than 1000 m3/hr (as provided in equipment list and process datasheet). Kindly confirm design flow rate of UF-I skid.	Please follow tender		
212.	Part 4	1931 of 7166	PDS	Suspended solid	<table><tr><td>SUSPENDED SOLIDS (MAXIMUM) (mg/l)</td><td>500 max at Peak Flow, 200 max at Normal Flow</td></tr></table>	SUSPENDED SOLIDS (MAXIMUM) (mg/l)	500 max at Peak Flow, 200 max at Normal Flow	Maximum suspended solids
SUSPENDED SOLIDS (MAXIMUM) (mg/l)	500 max at Peak Flow, 200 max at Normal Flow							

SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
					<p>As per process datasheet , Maximum value of suspended solid is 200 ppm at normal flow for RWTP inlet water</p> <p>But as per process design basis Maximum value of suspended solid is 40 ppm at normal flow for RWTP inlet water.</p> <p>Kindly confirm the maximum value of suspended solid at normal flow for RWTP inlet water.</p>	<p>value shall be considered as 200 ppm for design at RWTP inlet.</p> <p>However, 40 ppm shall be considered for design of UF skids.</p>
213.	Part 5	2438 of 7166	P&ID	Bypass arrangement	 <p>As per P&ID 472-1112, Kindly clarify the requirement of By pass arrangement for magnetic flow transmitter or else we shall consider spool piece for the same.</p>	<p>By pass arrangement for FT shall not be required.</p>
214.	Part 6	2555 of 7166	Scope drawing	Road width for RWTP area	<p>8. ALL APPROACH ROADS FROM MAIN ROAD AROUND SCOPE BATTERY UNIT SHALL BE IN PACKAGE CONTRACTOR'S SCOPE. WIDTH OF THE APPROACH ROADS SHALL BE MINIMUM 9.0 M WIDE. THE LOCATION OF APPROACH ROAD</p> <p>We understood that width of approach road inside the RWTP area shall be minimum 9.0 m wide.</p> <p>Kindly confirm our understanding.</p>	<p>Bidder understanding is correct</p>
215.	Part 5	2442 of 7166	P&ID	Flow transmitter	 <p>Kindly specify the reason to provide two nos of flow transmitter on common discharge header of UF feed pump.</p>	<p>Location of FT shall be updated in amendment</p>

SL. No.	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
216.	Part 4	1942 of 7166	PDS	Flow rate of Backwash waste transfer pump	<p>As per Process datasheet, flow rate of backwash waste transfer pump(RWTP) is 300 m3/hr. While design flow rate of HRSCC (Backwash) is 340 m3/hr.</p> <p>Hence kindly confirm flow rate of backwash waste transfer pump (RWTP).</p>	Please follow tender
217.	Part 4	1948 of 7166	PDS	Flow rate of Clarified water transfer pump	<p>As per Process datasheet, flow rate of Clarified water transfer pump (RWTP) is 200 m3/hr. While design flow rate of HRSCC (Backwash) outlet is 340 m3/hr.</p> <p>Hence kindly confirm flow rate of Clarified water transfer pump (RWTP).</p>	Refer response to query 185
218.	Part 4	11899 of 7166	Equipment List	Design flow rate	<p>As per equipment list, Design Flow rate of RO-II permeate system is 868 m3/hr.</p> <p>While for design Flow rate of MB system is 850 m3/hr.</p> <p>Kindly let us know about routing of balance flow of 18 m3/hr.</p>	Please follow tender
219.	Part 1	631 of 7166	-	Loading criteria	<p>We understood that design temperature (i.e. 30 c) shall be considered for guaranteed power consumption of RO feed pump.</p> <p>Kindly confirm our understanding.</p>	Please follow tender
220.	Tenderdocument _Part 2.pdf	836 of 7116	4.0	Evaporator Section – Type of Evaporator	<p>As mentioned in the tender document, “Multiple effects (Minimum FOUR EFFECTS for good steam economy and maximum condensate recovery) falling film cum forced circulation evaporators with thermal vapour recompression (TVR) system are envisaged.”</p> <p>Also it is mentioned, “the type of evaporator shall be based on bidder’s experience”.</p> <p>From the above we understand that the type of evaporator shall be bidder’s choice and shall not necessarily be falling film cum forced circulation. Please confirm.</p>	Bidder understanding is correct

SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
221.	Tenderdocument _Part 2.pdf	833 of 7166	4.0	Storage of Salt generated from Centrifuge	<p>As mentioned in the tender document, "The dryer unit (ATFD or Pusher Centrifuge) units located at the elevated Technical Structure shall be able to provide for the bottom withdrawal of dried product (salts) into 3 Nos. Salt Storage Sheds."</p> <p>Please confirm the distance of this salt storage sheds from the MEE shed.</p>	Shall be developed by the bidder during detailed engineering.
222.	Tenderdocument _Part 2.pdf	833 of 7166 & 837 of 7166	4.0	Collection of salt generated from Dryer Unit	<p>As mentioned on Pg. 833 of 7166 in the tender document, "The Dryer (ATFD or Pusher Centrifuge) units located at the elevated Technological Structure shall be able to provide for the bottom withdrawal of dried product (salts) into 3 Nos. Salt Storage Sheds. The discharge from each of the Dryer Units shall be conveyed to all Three Storage Sheds through Chutes."</p> <p>Also</p> <p>As mentioned on Pg. 837 of 7166, "The solids shall be discharged to a dumpster of adequate capacity for further disposal".</p> <p>Kindly clarify whether the dried salt collection shall be through chute or in dumpster.</p>	The dried salt collection shall be through chute in salt storage sheds. The details shall be reviewed during detailed engineering.
223.	Tenderdocument _Part 2.pdf	833 of 7166	4.0	Collection of salt generated from Dryer Unit	<p>As mentioned on Pg. 833 of 7166 in the tender document, "The Dryer (ATFD or Pusher Centrifuge) units located at the elevated Technological Structure shall be able to provide for the bottom withdrawal of dried product (salts) into 3 Nos. Salt Storage Sheds. The discharge from each of the Dryer Units shall be conveyed to all Three Storage Sheds through Chutes."</p> <p>From the above we understand that the connection between the Pusher Centrifuge and Salt Storage Shed shall be through Chute. We would like to bring to your</p>	The location of salt storage shed shall be confirmed by the bidder and the details shall be reviewed during detailed engineering.

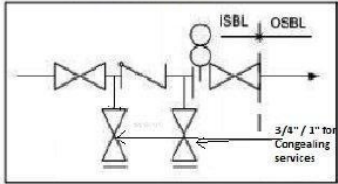
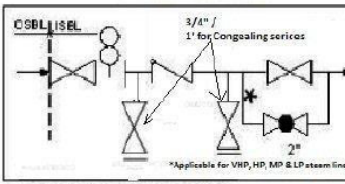
SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
					notice that discharge of salt through chute to salt storage shed through such a long distance is not possible. Hence, we propose to first collect the salt in trolley, bag it and then store the bags in salt storage shed. Please confirm on the same.	
224.	Tenderdocument _Part 2.pdf	833 of 7166	4.0	Storage of Salt generated from Centrifuge	<p>As mentioned in the tender document, "The dryer unit (ATFD or Pusher Centrifuge) units located at the elevated Technical Structure shall be able to provide for the bottom withdrawal of dried product (salts) into 3 Nos. Salt Storage Sheds."</p> <p>Also the size of Shed is provided.</p> <p>Please confirm the number of days to be considered for storage of salt.</p>	Please follow tender
225.	Tenderdocument _Part 2.pdf	833 of 7166	4.0	Collection of salt generated from Dryer Unit	<p>As mentioned on Pg. 837 of 7166, "The solids shall be discharged to a dumpster of adequate capacity for further disposal".</p> <p>Kindly clarify:</p> <ol style="list-style-type: none"> 1. What kind of dumpster (hand pulled with wheels OR Tractor pulled) is required and how much should be the minimum volume of each dumpster. 2. If the dumpster needs to be pulled by tractor then please specify the scope of supply for tractor. 3. At what location shall be the dry solids disposed? And what shall be the distance? 4. Disposal of dry solids shall be in Contractor's scope or not? If yes, then please provide the location for disposal of dry solids. 	<p>The dried salt collection shall be through chute in salt storage sheds.</p> <p>The details shall be reviewed during detailed engineering.</p> <p>Disposal of dried solids during commissioning, pre-commissioning, trial run and PGTR shall be in the contractor's scope including the location identification for disposal and collection, bagging</p>

SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
						and transportation.
226.	-	-	-	-	Kindly confirm the operating hours of MEE system shall be 20 hrs or 24 hrs.	Please follow tender
227.	-	-	-	-	LP steam at a Normal pressure of 4.0 kg/cm2g shall be available at the battery limit. Same shall be used for MEE system. Hence, we understand that Pressure Reduction and De-superheating package facilities are not required. Please confirm.	MP steam shall be utilized for ZLD
228.	Tenderdocument _Part 2.pdf	823 of 7166	2.0	Acid/Alkali proof tiling	Please confirm if Acid/Alkali proof tiling shall be applicable in MEE Shed also.	Bidder understanding is correct
229.	Tenderdocument _Part 2.pdf	833 of 7166	4.0	MOC of Technological Structure of MEE	We understand that the MOC of Technological Structure of MEE shall be entirely of Structural Steel, only the ground floor shall be RCC paved. Please confirm on the same.	Bidder understanding is correct
230.	Tenderdocument _Part 2.pdf	833 of 7166	4.0	Requirement of deaerator	Kindly clarify why deaerator is required prior to MEE system.	Please follow tender
231.	Tenderdocument _Part 2.pdf	835 of 7166	4.0	Treatment Philosophy Discharge sludge Clarifier – of from	As mentioned in the tender document, "The sludge generated from the clarifier in the ZLD Unit shall be dewatered through a centrifuge and the solids shall be sent for disposal." Please confirm if a dedicated centrifuge is required for ZLD section OR the sludge removed from this clarifier can be routed to centrifuge provided for RWTP plant.	Please follow tender
232.	-	-	-	-	Kindly specify the fouling factor to be considered shell side and tube side.	Shall be as per system supplier recommendation.
233.	Tenderdocument _Part 2.pdf	834 of 7166	4.0	Location of storage of dosing chemicals	With reference to chemicals required for MEE system, kindly confirm the following: 1. No. of days to be considered for storage of	Please follow tender

SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
					<p>Antiscalant, Antifoam and HNO₃.</p> <p>2. The location of storage of Antiscalant, Antifoam and HNO₃.</p> <p>3. The dosing tank & dosing pumps required for Antiscalant, Antifoam and HNO₃ shall be placed on first floor of chemical house.</p>	
234.	Tenderdocument_Part 2.pdf	838 of 7166	4.0	Collection of Condensate	<p>As mentioned in the tender document, "The distillate from the plant shall be condensed, stored and pumped for recycle in the UF Feed Tank in RODM Plant. The ZLD plant shall be provided with condensate collection tanks for the Evaporator and Dryer Units Individually. The condensate from both the condensate tanks shall be pumped to the UF Feed Tank in RODMP."</p> <p>Kindly clarify the following:</p> <ol style="list-style-type: none"> 1. Condensate is not generated from Pusher Centrifuge hence condensate collection tank for the Evaporator and Dryer Units Individually is not envisaged. Please confirm. 2. There are two working and one standby chains of MEE system. The condensate tank and condensate transfer pump to be provided shall be common for all the three chains OR dedicated condensate tank with condensate transfer pump needs to be provided for each chain. Please confirm. 	<ol style="list-style-type: none"> 1. Please follow tender 2. Common condensate tank and pump shall be provided for ZLD
235.	P&ID	-	-	P&ID for ZLD Plant	<p>With reference to the tender P&ID provided for ZLD Plant, A line is shown for Distillate/Condensate coming out of the MEE system is routed to UF Feed Collection Tank. AND another line is shown for the recovered condensate that is collected in recovered condensate tank. Along with the recovered condensate, a line from RO-1A permeate header is connected to this tank.</p> <p>Kindly explain the two different types of condensates</p>	The distillate/recovered condensate shall stored in condensate tank and routed to UF Feed Collection

SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
					<p>(Distillate & Recovered) coming out of the MEE system?</p> <p>Does it mean that steam and process condensate needs to be collected separately from the MEE system? If yes, then we would like to bring to your notice that it is not possible to separate the steam and process condensate as Thermo Vapour Recompressor (TVR) is provided in the system.</p> <p>In view of the above, kindly explain the two different types of condensates mentioned in the P&I Diagram.</p>	Tank.
236.	Tenderdocument _Part 2.pdf	982 of 7166 & 838 of 7166	1.0 & 4.0	Location of discharge of Distillate / Condensate generated from MEE system	<p>As mentioned in tender document, "The reject water from the DM plant shall be routed to the Zero Liquid Discharge Plant which shall process the Waste stream from the RODM Plant to generate Condensate and Distillate equivalent to Treated Raw Water quality which shall be sent to the Treated Raw Water Reservoir and Dried Solids that shall be sent for Disposal."</p> <p>Also</p> <p>As mentioned in the tender document, "The distillate from the plant shall be condensed, stored and pumped for recycle in the UF Feed Tank in RODM Plant. The ZLD plant shall be provided with condensate collection tanks for the Evaporator and Dryer Units Individually. The condensate from both the condensate tanks shall be pumped to the UF Feed Tank in RODMP."</p> <p>From the above, we understand that the condensate/distillate generated from MEE system shall be routed to UF feed tank of RO-DMP. Please confirm if our understanding is correct.</p>	Bidder understanding is correct
237.	Tenderdocument _Part 2.pdf	839 of 7166	4.0	Minimum Instrumentation Required for ZLD	As mentioned in the tender document, "Pressure Reduction and De-superheating System (PRDS) along with the required Flow Transmitter, Pressure and Temperature	MP steam shall be utilized for ZLDP

SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
				System	Transmitters and Control Valves. Pressure and Temperature Transmitters at the outlet line of de-superheated Steam from the PRDS shall also be provided.” We understand that LP steam at Normal Pressure of 4.0 kg/cm2g shall be available at the battery limit of ZLD unit and same shall be used for MEE system. As the available steam pressure is 4.0 kg/cm2g then the requirement of PRDS system is not envisaged. Kindly confirm if our understanding is correct.	
238.	Tenderdocument _Part 2.pdf	840 of 7166	4.0	Type of level instrument	As mentioned in the tender document, “All the tanks shall be provided with two (2) Nos. level measurement instruments. Primary level measurement instrument shall be non-contact Radar type. Secondary Level indication shall be a Level Gauge.” From the above, kindly confirm if Two numbers of Level Transmitter (Radar Type) and One number of Level Gauge is required on each tank. OR One number of Level Transmitter (Radar Type) and One number of Level Gauge is required on each tank. Please confirm on the above.	2 nos. LTs non contact radar type shall be provided. Loop powered LI from one LT shall be provided. For all Bulk chemical storage tanks, LG shall also be provided.
239.	Tenderdocument _Part 2.pdf	840 of 7166	4.0	Type of level instrument	As mentioned in the tender document, “Pressure and Temperature control valves as required for the smooth operation and Control of the evaporator and Dryer units shall be provided.” Please clarify the location where these pressure and temperature control valves are required in MEE system.	Shall be finalized by ZLD system supplier
240.	Tenderdocument _Part 2.pdf	841 of 7166	5.0	Velocity Criteria	Kindly provide the velocity criteria for: 1. Steam line 2. Vapour line	velocity criteria 60 m/sec maximum

SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
241.	Tenderdocument_Part 2.pdf	842 of 7166	5.0	Valve Selection	Kindly provide the valve type to be used for following services: 1. Steam line 2. Vapour line	Valve type to be considered as per P&ID & PMS
242.	-	-	-	-	Kindly provide P&ID for Multiple Effect Evaporator System.	Shall be developed by ZLD system supplier
243.	-	-	-	-	We understand that the instrumentation for Zero Liquid Discharge Plant provided in this section is the minimum to be followed. Please Confirm.	Bidder understanding is correct
244.	Tenderdocument_Part 2.pdf	813 of 7166	5.4.1	Selection of Tube Diameter and Thickness	Please confirm if it is mandatory to follow the tube diameter and thickness provided in this section for design of heat exchangers.	Please follow tender
245.	Tenderdocument_Part 2.pdf	820 of 7166	9.1	Battery Limit Isolation	<p>As mentioned below in the tender document:</p> <p>... The Battery limit isolation for all the incoming and outgoing Process and Utility lines from Process units shall be configured</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>For outgoing lines</p>  </div> <div style="text-align: center;"> <p>For incoming lines</p>  </div> </div> <p>From the above we understand that, for all the incoming and outgoing Process & Utilities Lines from the Battery Limit, the above shown valve arrangement needs to be provided. Please confirm if our understanding is correct.</p>	Refer Section 9.2 for isolation valve requirement for utility services.
246.	Tenderdocument_Part 2.pdf	986 of 7166	2.2	Quantity of Evaporator and Dryer Units	As mentioned in the tender document, "The Design Capacity of the Zero Liquid Discharge (ZLD) Plant shall be 50m3/hr. The Zero Liquid Discharge Plant shall comprise of a multi-effect Evaporator Unit followed by a Dryer Unit.	Please refer your own query below.

SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
					<p>Three (2 working and 1 standby) Multi-Effect Evaporator Units, each with processing capacity of 25 m3/hr Feed Water for and Two Units (1 working and 1 standby) Dryer Unit, each with processing capacity of 5 m3/hr for processing the Concentrated Brine from the Evaporator Outlet envisaged.”</p> <p>From the above, we are unable to understand the quantity of Dryer Units required for ZLD Plant.</p> <p>Two Units (1 working and 1 standby) dryer Units means, “One working for two working chains of MEE system and one standby dedicated for standby chain of MEE system is required?</p> <p>OR</p> <p>Two Units (1 working and 1 standby) dryer unit is required for each chain of MEE system?</p> <p>Please Clarify on the above.</p>	
247.	Tenderdocument _Part 2.pdf	1915 of 7166	-	Equipment List of ZLD Package – Quantity of Dryer unit	<p>As mentioned in the notes of Equipment List, “In case of ATFD dryer, at least two dryers for each chain to be provided. In case of Pusher Centrifuge as dryer, at least one Pusher Centrifuge for each chain to be provided.”</p> <p>We understand that we have to follow above philosophy for considering the quantity of dryer unit. Please confirm if our understanding is correct</p>	Bidder understanding is correct
248.	Tenderdocument _Part 2.pdf	995 of 7166	3.2.1	Quantity of Dryer Unit	<p>In the particular section, it is mentioned, the quantity of Dryer unit shall be 1 working + 1 standby for each chain of MEE system.</p> <p>We understand that the MEE chain shall be 2 working + 1 standby. Hence, 1 working + 1 standby of dryer unit is not</p>	Please refer the query and its response above

SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
					<p>required for each chain of MEE as the third chain of MEE is itself a complete standby.</p> <p>In view of the above, we request you to kindly confirm us the exact quantity of dryer unit to be considered.</p>	
249.	Tenderdocument _Part 2.pdf	987 of 7166	2.1.1.1	Quality of ZLD Plant Feed	<p>We understand that the table provided in Section 2.1.1.1 is the quality of RO reject to be fed to ZLD Plant.</p> <p>The Hardness mentioned in the table is 2000 mg/l. Also, lime and soda ash dosing is envisaged for reduction of hardness before feeding to MEE system. Hence, kindly confirm the hardness level required before feeding to MEE system. i.e. how much reduction of hardness shall be considered from 2000 mg/l.</p>	Shall be developed by the bidder
250.	Tenderdocument _Part 2.pdf	993 of 7166	6.3	Moisture content in salt generated from Dryer Unit of ZLD Plant	<p>As mentioned in the tender document, "the solids/salts shall be disposed of as solids or crystals (having moisture content less than 8%) from the plant."</p> <p>But Under section 2.13 Performance and Guarantee Page 830 of 7166, it is mentioned 10% of moisture content in dry solids.</p> <p>Hence, we understand that the moisture content required in dry solids generated from Dryer unit shall be 10%. Please confirm if our understanding is correct.</p>	Bidder understanding is correct
251.	Tenderdocument _Part 2.pdf	994 of 7166	-	MOC	<p>Kindly specify Material Of Construction for following:</p> <ol style="list-style-type: none"> 1. Pusher Centrifuge (Wetted Parts and Non-Wetted Parts) 2. Vacuum pumps 	As per ZLDP system supplier compatible with the process fluid quality
252.	Process Datasheets	2136 of 7166	-	Process Datasheet of ZLD feed tank	<p>The Quantity of ZLD feed tank mentioned in Process datasheet is 1 No.</p> <p>Whereas, the quantity of ZLD feed tank mentioned in Equipment List is 2 Nos. (2W).</p>	The quantity of ZLD Feed tanks shall be 1nos.

SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
					Please clarify the quantity of ZLD feed tank and capacity of each tank to be considered.	
253.	Process Datasheets	2159 of 7166	-	Process Datasheet of Recovered Condensate Pumps	<p>The Liquid Handled in the Process Datasheet is mentioned as "ZLD Condensate & RO Permeate."</p> <p>The quantity of pumps mentioned is 2(1W + 1S).</p> <p>Please confirm if this pump is to be used for two different purposes i.e. transfer of condensate to UF feed tank and transfer of RO permeate to treated raw water reservoir.</p>	Please follow tender
254.	-	-	-	Spare Philosophy for MEE Recirculation Pumps	<p>As mentioned in the tender document, 3 (2W + 1S) chain each having capacity of 25 m³/hr is required for Evaporator (MEE) system.</p> <p>Please note that it is not advisable to provide bends in the recirculation pump lines of MEE system as it may cause chocking. Also, it is not advisable to provide installed standby for the recirculation pumps as it will also cause chocking over a period of time and would also increase in number of bends leading to uneasy operations.</p> <p>Hence, if one of the recirculation pump goes into maintenance in any one of the working MEE system chain then it would be difficult to isolate that non-working recirculation pump and connect the standby pump provided in complete standby chain of MEE system. Also, the same stands true for vacuum pumps and ML recycle pumps.</p> <p>In view of the above we propose to provide following standby arrangement for recirculation and other pumps:</p> <ol style="list-style-type: none"> 1. One common store standby recirculation pump between stage 1 of all the three chains of MEE. 2. One common store standby recirculation pump between stages 2, 3 & 4 of all the three chains of 	<ol style="list-style-type: none"> 1. Noted 2. One common standby for each stage across the 3 MEE units. Total 4 store standby for MEE recirculation pumps. 3. Each vacuum pump shall have a hot standby. (1 working + 1 standby) for each MEE chain. 4. Noted <p>These are minimum requirements and shall be confirmed by ZLD system supplier during detailed</p>

SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
					<p>MEE.</p> <p>3. One common store standby vacuum pump between all the three chains of MEE.</p> <p>4. One common store standby ML recycle pump between all the three chains of MEE.</p> <p>Please confirm if above spares pump arrangement is acceptable.</p>	engineering.
255.	-	-	-	Flushing connection required in fire water network	Please confirm the size of Flushing connection with isolation valve to be provided in fire water network.	<p>i) line size less than 12" header : 4"</p> <p>ii) line size 12" to 18" header : 6"flushing line to nearest drain with valve</p> <p>flushing line to nearest drain .</p>
256.	-	-	-	Size of Riser – Fire water network	Please specify the size of riser to be considered in the Fire Network System.	Refer,as per EDB no B269-999-81-41-EDB-1002 ,attached in tender
257.	-	-	-	Restricted Orifice – Fire water network	<p>As mentioned in the tender document, “RO at Landing/Hydrant outlets to reduce the pressure to 7 kg/cm2g.”</p> <p>We understand that the RO shall be provided at both the outlets valves of hydrant. Please Confirm.</p>	Bidder understanding is correct.
258.	-	-	-	Pressure at tapping point – Fire water network	Please provide the available pressure to at tapping point for design of Fire Water Network.	Refer document no:B269-475-17-44-SOW-5000. Rev.b ,attached in tender
259.	-	-	-	Detail of existing	Kindly provide the layout showing existing fire network	Refer drg no:B269-

SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
				fire water network	header around the plant with details (i.e. location, routing, line size) of existing fire water header.	475-81-45-30101, rev.A

PRE-BID QUERIES (Bidder-3)						
NAME OF THE PROJECT			RWTP, RO-DMP, CPU & ZLD PLANT for Panipat Refinery Expansion Project (P25) of M/s Indian Oil Corporation Limited (IOCL), India			
Sl. No.	Bid Document Reference	Tender Notice Page No	Section or Clause Ref	Reference as per Tender	Bidder's Query	Client reply
	Technical-A					
1	B269-999-16-50-EDB-1001 Engineering Design Basis- Electrical	29 of 49 1028 of 7166	5.5.4 SPECIFIC EQUIPMENT LOCATIONS	10 Energy saver panel with Lighting transformers - Panel mounted type lighting transformer	All Light fixtures shall be of LED type. Please clarify the requirement of energy saving panel.	Bidder to that Energy Saver panel is not envisaged. Contractor's scope of supply & work is for Panel mounted type lighting transformer.
2	B269-999-16-50-EDB-1001 Engineering Design Basis- Electrical	40 of 49 1039 of 7166	5.9.2 CONTROL PHILOSOPHY	9 ELCB at Incomer of Lighting / Power Panels - Yes(ELCB shall be provided in Outgoing of LDB/ASB) (Refer Note-6) Note:6. Combined ELCB + MCB for each lighting outgoing circuit at local lighting distribution panel shall be provided and ELCB shall be rated for 30mA in field and 300mA in Indoors.	1) LDB, ELDB & LP Incomer of Lighting /Power panels need not be provided with ELCB as mentioned in 5.9.2 CONTROL PHILOSOPHY. Please confirm our understanding is correct. 2) Incoming and Outgoing Feeders for Lighting Panel shall as mentioned below. a) Indoor Lighting Panels - Incomer shall be MCB and outgoing shall be RCBO instead of MCB+ELCB (RCBO shall be 100mA for Lighting circuits and 30mA for Small power circuits b) Outdoor Lighting Panels - Incomer shall be MCB and outgoing shall be RCBO instead of MCB+ELCB (RCBO shall be 30mA for outdoor Lighting and small power circuits) 2) ASB - Please confirm all single phase small power sockets shall be fed from Lighting panel with separate circuits for small power sockets. Only 3 phase welding receptacles shall be fed from ASB 3)Outgoing feeders for Welding Receptacles need not be provided with ELR, Hence feeders for Welding receptacles shall be SFU. Please confirm our understanding is correct.	1) Bidder's understanding is partly correct for the referred clause 5.9.2 (9) of Eng. Design Basis-Electrical B269-999-16-50-EDB-1001. As per this clause, ELCB shall be provided in outgoing of LDB/ASB and shall be read in conjunction with reply at 2(a & b) below. 2) a & b : CONTRACTOR shall provide separate RCBO & MCB or separate ELCB & MCB for each lighting outgoing circuit at local lighting distribution panel. Common RCBO/ ELCB + MCB unit is not acceptable. ELCB/ RCBO shall be rated for 30mA in field and 300mA in Indoors. ASB : Single phase small power sockets shall be fed from Power Panel only. Power Panel shall be fed from ASB and Lighting Panels shall be fed from LDB. 3) Bidder's understanding is correct for Welding receptacles feeding arrangement.
	B269-475-16-50-0001, REV- B KEY SINGLE LINE DIAGRAM	2566 of 7166	RODMP/ZLDP/CPU SUBSTATION (S/- 112)	LDB/ELDB - Outgoing - SFU + ELCB NLP / ELP- Incomer with MCB + Outgoing with MCB+ELCB ASB - Outgoing - SFU + ELR / SFU		
	6-51-0083, REV 6 SPECIFICATION FOR LIGHTING INSTALLATION	5 of 13 5077 of 7166	3.1 Lighting and Power Panels	3.1.2 The Incomer shall be with MCB and ELCB unit unless otherwise specified. 3.1.4 All MCBs shall be M9 category as per IS 8828 and sensitivity of ELCBs shall be 100mA - 300mA unless otherwise specified.		
3	B269-999-16-50-EDB-1001 Engineering Design Basis- Electrical	38 of 49 1036 of 7166	5.6.16 CABLE SIZES	The Power and Control cables shall have the following minimum cross sectional areas 3 Lighting - 2.5 sqmm (copper) Notes: 1.) For lighting inside the building, minimum 1.5 sqmm copper conductor, PVC Insulated wire shall be used in conduit system (for circuit and point wiring), with proper colour coding. Wires shall be PVC insulated and shall be of 660 Volts grade as per IS694. Conductor shall be of stranded copper and size shall be minimum 1.5 Sq. mm for lighting, 2.5 Sq. mm for 15A power socket circuits and 4 sq. mm for split A/C power socket circuits.	Minimum Wire size for lighting is mentioned as 2.5 sq.mm in Cl. 5.6.16 (EDB-Electrical) whereas in the Cl. 3.9 Wires (Specification for Lighting Installation) it is mentioned as 1.5 Sq. mm. Lighting wires shall be minimum 1.5 Sq. mm for lighting, 2.5 Sq. mm for 15A power socket circuits as mentioned in the Cl. 3.9 WIRES (Specification for Lighting Installation). Please confirm.	Bidder to follow Eng. Design Basis-Electrical B269-999-16-50-EDB-1001 which is Project Design Basis. Also note that 6-51-0083 is the standard specification for other than project specific requirements and shall be read in conjunction.
	6-51-0083, REV 6 SPECIFICATION FOR LIGHTING INSTALLATION	7 of 13 5079 of 7166	3.9 WIRES			
4	B269-999-16-50-EDB-1001 Engineering Design Basis- Electrical	43 of 49 1040 & 1041 of 7166	5.11 ELECTRICAL EQUIPMENT FOR HAZARDOUS AREAS 5.11.1 NOTES	2.3 Irrespective of the area classification (whether zone 1 or zone 2), all lighting fixtures within the storage areas shall be flameproof type. 2.4 Irrespective of the area classification (whether zone 1 or zone 2), all motors and lighting fittings within the pump house/pump station/compressor house/other facilities associated with offsite tank farm and within the loading/unloading gantries shall be of flameproof type. 2.7 Building such as Compressor sheds inside the process area shall be designed to allow adequate ventilation to allow area classification as Zone-2. Lighting equipment, EOT crane etc. in the shed shall be flameproof type. All other electrical equipment shall be suitable for Zone-1 or Zone-2 area depending on extent of hazard.	Since there is no hazardous area in the Water Plant package, all electrical equipment including Light fixtures, socket, JBS, Switchboxes etc. Inside the Water plant area (safe area including Storage, Pump house, Compressor house,etc.) shed shall be non-Flameproof type except Battery Room which shall be provided with Group-IIC Flameproof Fixture. Pl confirm our understanding is correct	Bidder to note that Hazardous Area Classification (HAC) is not applicable as these are Safe Area plants. However, in case any hazardous substance is handled in these packages the requirement of corresponding Hazardous Area Equipments shall be complied by Contractor. Further Wherever Contractor is supplying/ installing any hazardous area equipments in these plant areas, then same shall be supported with necessary statutory certificates and PESO approval.
5	6-51-0083, REV 6 SPECIFICATION FOR LIGHTING INSTALLATION	7 of 13 5084 of 7166	4.4 Building Lighting	4.7 The number of points in a circuit shall not exceed ten and the load in each circuit shall be less than 1000 Watts.	Load in each circuit is mentioned as 1000W & 1500W in Cl. 4.7 (SPECIFICATION FOR LIGHTING INSTALLATION) and in Cl. 7.4.11 (DESIGN PHILOSOPHY FOR ELECTRICAL FACILITIES) respectively.	Bidder to follow clause 4.4.7 of 6-51-0083 for building lighting and clause 7.4.11 of 6-51-0099 for other than building lighting.
	6-51-0099 Rev. 7 DESIGN PHILOSOPHY FOR ELECTRICAL FACILITIES	30 of 32 5169 of 7166	7.4 Lighting System	7.4.11 In general, the load on each circuit shall be limited to 1.5 kW and MCB rating shall not be more than 16A	Load in each circuit shall be limited to 1.5kW as mentioned in Design Philosophy. Please confirm.	
6	B269-475-16-50-SP-8701 JOB SPECIFICATION (Electrical) RWTP / RODMP / ZLDP / CPU PACKAGE	39 of 49 1416 of 7166	3.24 SPECIAL REQUIREMENTS FOR LEDs FIXTURES	3.24.1.1 LED efficacy shall be greater than > 140Lumen/Watt @ 350mA drive current. In respect of LEDs of higher power ratings, drive current greater than 350mA can be accepted if the LED's LM 80 / IS: 16105 test reports support the same.	Most of the Light fixture manufacturers Providing LED efficacy which is normally be 110 Lumen/watt only. Please confirm your acceptance for 110 Lumen/watts	Bidder to follow Tender Documents.
7	6-51-0099 Rev. 7 DESIGN PHILOSOPHY FOR ELECTRICAL FACILITIES	32 of 32 5171 of 7166	7.4 Lighting System	7.4.22 LED solar lighting system shall be provided for street lighting purpose, if specified in project design data sheet.	Please confirm the requirement of Solar lighting for Street light fixtures, as there is no specific requirement in Project design data sheet.	Bidder to note that Solar Street lighting is not envisaged.
8	6-51-0083, REV 6 SPECIFICATION FOR LIGHTING INSTALLATION	10 of 13 5082 of 7166	4.2 Conduit System	4.2.2 Conduit shall be minimum 25mm dia.	Minimum of 25mm dia conduit is provided in the Cl. 4.2.2. 20mm dia conduit shall be sufficient for short distances. Conduit fill requirement shall be in line with IS 732. Please confirm your acceptance.	Bidder to follow Tender Documents.
9	-	-	EARTHING SYSTEM	-	Please arrange to provide Soil Resistivity value nearer to RWTP & RODM Package area in the existing plant	Soil resistivity measurement along with report is in Contractor's scope of Work for the Packages.
	Technical-B					
1	473- TENDERDOCUMENT_PART_4	Page 183 of 700	6.0	FOUNDATION RECOMMENDATION	As per Geotechnical report recommendation for shallow foundation are only mentioned, recommendation for Pile foundation with Diameter, length and capacities to be provided	As per the bid requirements, the detailed pile design is in bidder's scope.
2	740- TENDERDOCUMENT_PART_2	Page 52 of 457	2.1 & 7	METEOROLOGICAL DATA	Please provide the Basic wind speed for proposed plant.	Bidder to refer EDB
3	740- TENDERDOCUMENT_PART_2	Page 350 of 457	C.5.26	Rain water pipes	Please mention the material to be considered for Rain water downcomer	Architecture to reply
4	740- TENDERDOCUMENT_PART_2	Page 197 of 457	PART-C: U/G CIVIL	STORM WATER DRAINAGE SYSTEM Design & providing storm water drainage system for effective surface drainage of the whole area under this package. Drainage work (network of RCC drains) shall also cover RCC paved area and plant facilities area and shall be connected to OSBL storm water drain	Please provide the drain disposal location with its distance for proposed plant.	Rain water drain disposal is outside the Battery limit of the plant along the Roads. For location of Roads/drain disposal refer scope drawing no B269-475-81-41-14561 & B269-475-81-41-14562.
5	740- TENDERDOCUMENT_PART_2	Page 197 of 457	PART-C: U/G CIVIL	STORM WATER DRAINAGE SYSTEM Garland drain	Please provide the type of construction of Garland Drains (RCC or Brick work)	Refer Note no-7 of scope drawing no B269-475-81-41-14561 & B269-475-81-41-14562 for MOC of Drains
6	740- TENDERDOCUMENT_PART_2	Page 193 of 457	PART B: STRUCTURAL (X)	Damp proof course	Please provide the thickness of DPC	Bidder to refer EDB

7	740-TENDERDOCUMENT_PART_2	Page 309 of 457	A.4.1.11	Fencing / Compound Wall	As per spec Material for construction of compound wall & Fencing shall be as per Existing Project Philosophy. Please provide the specification of Compound wall & Fencing for <u>proposed plant</u> if any required.	Refer scope drawing no B269-475-81-41-14561 & B269-475-81-41-14562
8	740-TENDERDOCUMENT_PART_2	Page 197 of 457	PART-C: U/G CIVIL	iv) ROADS & APPROACHES	Please provide the Width of Roads / Shoulders and Material of Construction for roads & Shoulders.	all approach road shall be RCC refer S.No-4 of Clause no A.4.1.4 of EDB-B269-999-81-41-EDB-1001 EDB-1001
9	740-TENDERDOCUMENT_PART_2	Page 196 of 457	PART-C: U/G CIVIL	Site Grading	Please provide the contour levels of the proposed plant area for calculation of earthwork for grading purpose.	Topography survey data to be provided to successful bidder.
10	General			Plastering in Tanks	No plastering considered for RCC tanks. Please confirm.	Bidder to follow requirements as mentioned in EDB

			Bidder-4			
SUB			PRE-BID QUERIES FOR WATER BLOCK PACKAGE (INCLUDING RWTP,RO-DMP,CPU & ZLD PLANT)			
TENDER NO.			BIDDING DOCUMENT : SG/B269-475-PA-T-8701/23			
SR. NO	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
	PART/VOL.	PAGE NO.	CLAUSE NO.	SUBJECT		
1	Part 2	page 252/457	4, Sr 17	Specific Design Requirement	Rating of distribution transformer shall be as per Maximum demand as calculated from process loads. We understand that there is no stringent requirement of 2500 KVA as minimum transformer rating. Please confirm.	Bidder understanding is not correct w.r.t. the referred clause S. No. 17 of Eng. Design Basis -Electrical B269-999-16-50-EDB-1001 attached with Tender. As per this clause, the rating of distribution transformer shall be standardised to 2500kVA. Bidder shall restrict to this much standard rating. This does not mean that Dist. Trafo. shall have minimum 2500kVA. For small power requirements, Bidder to size the Dist. Trafo. accordingly keeping in view the Tender specification requirements and the Standard ratings available in IS-2046/IEC-60076. Distribution shall comply to latest IS-1180 (Part-1) & its amendments including but not limited to amendment 4 and latest Gazette of India Order. Accordingly, efficiency of transformer at 50% and 100% load shall be considered with total losses at 50% and 100% loading not exceeding maximum losses values specified in Table-6 of IS-1180 (Part-1) for Energy Efficiency level-2/ Table-3 of Gazette of India for Star-1 (for transformers rated up to 2500kVA).
2	Part 2	page 252/457	4, Sr 17	Specific Design Requirement	Based on Maximum demand, contractor can consider Distribution transformer rating as 3.15MVA also. Please confirm.	Refer reply at SR. No. 1 above.
3	Part 2	page 281/457	5.70	Cabling system	Kindly specify short circuit withstand time for ACB feed Motors >55kw, 415V. Else we shall consider as 0.16sec	Bidder understanding is not correct w.r.t. the referred clause 5.7.1 (S.No. 6) of Eng. Design Basis -Electrical B269-999-16-50-EDB-1001 attached with Tender. As per this clause, it is not applicable.
4	Part 2	page 283/457	5.80	Earthing system	Kindly specify sizes for earthing strips for different electrical equipments ex. Motors, Transformers, HV/MV Panels, distribution boards etc.	Bidder to follow Cl.No. 3.22.16 of Job Spec.(Electrical) B269-475-16-50-SP-8701 attached with tender, w.r.t. main grid size as 100x12 for Substation and 50x6 for Unit. Earthing sizing calculation shall be furnished by Contractor for the final GI earth strip selected. Bidder to follow Equipment Earthing Schedule 7-51-0116 attached with Tender.
5	Part 2	page 285/457	5.11	Electrical equipment for hazardous area	We understand that water treatment plant RP,DM,ZLD,CPU,RWTP comes under SAFE area and E&I equipments shall be consider applicable for SAFE area only as weather proof, IP65(suitably). Please confirm.	Bidder to note that Hazardous Area Classification (HAC) is not applicable as these are Safe Area plants. However, in case any hazardous substance is handled in these packages the requirement of corresponding Hazardous Area Equipments shall be complied by Contractor. Further Wherever Contractor is supplying/ installing any hazardous area equipments in these plant areas, then same shall be supported with necessary statutory certificates and PESO approval.
6	Part 6	page 45,46	SLD	Bus distribution for HV Switchboard	In HV Switchboard we donot understand the purpose of using 2no. Breakers in Buscoupler. We shall consider HV Switchboard with 2no. Incomer and 1no. Buscoupler configuration. Kindly confirm.	Deviation is not acceptable. Bidder to follow Tender Documents.
7	Part 6	page 45,46	SLD	Distribution Transformer quantity	Based on the Maximum demand and distribution transformer rating, kindly allow us flexibility to consider 3no. Transformer serving as incomer to MV Switchboard.	Deviation is not acceptable. Bidder to follow Tender Documents.
8	Part 8	page 891/1400	4.4.2	Design philosophy of Electrical facility, Capacity of Electrical system	Standby Driven equipment in (Working+Standby) shall be considered for calculating maximum demand. For ex. For driven equipment 3no. Working+2no. standby, in this case Contractor will consider 2no. standby motors and then 10% of total standby shall be considered accordinly. Since the maximum demand will increase significantly if 'standby' in 'Normal-standby' combination will not be considered as standby loads. Please confirm.	Bidder's understanding is not correct. Bidder to follow Tender Documents.

9	Part 2	page 169/457	Cl 55	MV power & control cables for Owner supplied equipments	Kindly provide rating & quantity of all owner supplied equipments within package battery limit to enable us to size and supply MV power & control cable.	Bidder to note that for each of the Owner's Loads as specified at Note-f at Page 13/14 of 15 of Scope of Supply & Work-Electrical (Doc. No. B269-475-16-50-SOW-8701), Contractor's scope of supply is limited to providing only Owner feeders in Contractor's respective switchboards/ panels. Other than these listed Owner Feeders, all other Owner supplied equipment (Free Issued Materials-FIM) located in substation, control room, plant areas along with their cabling is included in Contractor's scope of supply & work. Bidder to follow the Tender documents.
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PRE-BID QUERIES (Bidder-5)

Tender No. SG/B269-475-PA-T-8701/23

S.No.	Document Reference	Clause Number/Page No.	Title	As per Clause	Query	RESPONSE
1	Document No. B269-475-17-44-EL-1001 Equipment list for RO-DM Plant and ZLD Plant,	Page no 1904 of 7166, Sl . 93	Lime Solution Dosing Pump	As per Technical data sheet & Equipment list Tag nos 2 (1W+1S)pumps are given	Quantity given in Equipment list is 3 (2W+1S) Nos. Please clarify which document will govern.	Lime solution dosing Pump shall be 2 nos. (1W + 1S)
2	Document No. B269-475-17-44-EL-1001 Equipment list for RO-DM Plant and ZLD Plant,	Page no 1904 of 7166, Sl . 10	Filter Backwash Pump	As per Technical data sheet & Equipment list Tag nos 3 (2W+1S)pumps are given	Quantity given in Equipment list is 2 (1W+1S) Nos. Please clarify which document will govern.	Filter backwash Pump-I shall be 2 nos. (1W + 1S)
3	Document No. B269-475-17-44-EL-1001 Equipment list for RO-DM Plant and ZLD Plant,	Page no 1896 of 7166, Sl . 11	Air Blower flow rate	As per Technical data sheet flow rate is given 630Nm3/hr	As per Equipment list flow rate is given 690 m3/hr. Please clarify which document will govern.	Flow rate of Filter Air Blower shall be 630 Nm3/h
4	Document Np. B269-475-17-44-EL-1001 Equipment list for RO-DM Plant and ZLD Plant,	Page no 1896 of 7166, Sl . 11	Air Blower Qty.	As per Technical data Qty is given 3 (2W+1S)	As per Equipment list Qty is given 2(1W+1s), Please clarify which document will govern.	Filter Air Blower-I shall be 2 nos. (1W + 1S)
5	Document No. B269-475-17-44-EL-1001 Equipment list for RO-DM Plant and ZLD Plant,	Page no 2010 of 7166,	UF-I FEED TANK	Tank height	As per data sheet Tank height is given 19 mtr, but in description L.D. 18 mtr + DVD 1mtr +1 F.B required.	UF Feed tank height shall be 20 m
6	Document No. B269-475-17-44-EL-1001 Equipment list for RO-DM Plant and ZLD Plant,	Page no 1898 of 7166,	Degassed Water Storage Tank	MOC	As per data sheet Tank MOC is CS Epoxy coated, but in Equipment list : CS with Glass Flake Vinyl Ester lining. Please clarify.	Degassed Water tank MOC shall be CS with Glass Flake Vinyl Ester lining
7	Document Np. B269-475-17-44-EL-1001 Equipment list for RO-DM Plant and ZLD Plant,	Page no 2051of 7166, & 2057 of 7166	UF Design Pressure & Operating Pressure	In UF -1 Design pressure is given 7.5 bar and UF -2 design pressure is given 8.0 bar & UF – RWTP design pressure is 6.5 bar	We understand that design pressure is as per Manufacturer standard , please confirm.	Minimum design pressure of UF skids (UF-I/II/RWTP) shall be 5 kg/cm2g
8	Document No. B269-475-17-44-DB-1001 Process Design Basis (Plot Plan & Water) for RO-DM Plant and ZLD Plant,	Page no 987of 7166	Total (Ractive) Silica as SiO2	Reactive Silica Reduction required & nature of chemical for Silica reduction	As per Table 5 : RO -DM Plant Reject Water Quality Total Reactive Silica is given 200 ppm so Dolomite /Mgo chemical need to dosing in HRSCC . Please also clarify nature of chemical to be used for Silica precipitation.	Please follow tender
9	PIPING & INSTRUMENTATION DIAGRAM (RO BASED DM PLANT) ULTRA-FILTRATION -II SKIDS	Page no 2494 of 7166	A91S Pipe line MOC	UF-II Backwash pump outlet header MOC	1) UF Backwash pump outlet header (after static mixer) are shown in 14" (RO BASED DMA PLANT) & 26" (RWTP) - A91S . Please note that above 10" size A91S material, fittings & valves are not easily available in the market. Hence, we request you to provide alternate option. 2) PMS of A91S is not available in tender. Please provide the same.	1) The UF backwash header post CEB dosing shall be SS304 or equivalent 2) Piping material specification and corresponding valve material specification which are generally applicable for P-25 complex shall be shared with succesful bidder. For Piping material specification and valve material specification which are exclusive to the subject package as per approved P&IDs of package vendor, shall be developed by the package vendor and submitted for approval along with all required back-up calculations meeting the requirements of ASME B31.3.
	PIPING & INSTRUMENTATION DIAG (RAW RAW WATER TREATMENT PLANT) ULTRA-FILTRATION -II SKIDS	Page no 2444 of 7166	A91S Pipe line MOC	UF Backwash line header- 26" A91S		

10	SFD RO-DMP PLANT	Page no 2469 of 7166	CIO2 dosing	Inlet of CTBD storage tank and Inlet of UF-I feed storage tank	<p>CIO2 dosing are shown at Inlet of CTBD storage tank and Inlet of UF-I feed storage tank in SFD. However, in tender P&ID of CTBD collection tank (Page no. 2466) and P&ID of UF-I feed collection tank (page no. 2475), CIO2 dosing are not shown. Details of CIO2 dosing system are not furnished in Tender data sheet and equipment list.</p> <p>Please clarify the requirement of CIO2 dosing system. In case if it is applicable, then please provide the technical specification of the same.</p>	CIO2 dosing is not envisaged in RODMP
11	PIPING & INSTRUMENTATION DIAGRAM (RO BASED DM PLANT) CENTRIFUGE SYSTEM	Page no 2473 of 7166	Sludge trolley		<p>Details of sludge trolley are not provided in scope of work, equipment list and technical data sheet. Please clarify whether sludge trolley are in Bidder's scope or not. If it is in bidder's scope, please provide the technical details like capacity, quantity, MOC etc.</p>	Sludge trolley are in bidder's scope. The details to be reviewed during detailed engineering.
12	Document No. B269-475- 17-44-EL-1001 Equipment list for RO-DM Plant and ZLD Plant,	Page no 1900 of 7166,	Dual Media Filters (vertical)-II	MOC	<p>As per data sheet Vessel MOC is CS Epoxy coated, but in Equipment list : CS with Glass Flake Vinyl Ester lining. Please clarify.</p>	MOC of DMF-II: CS with Glass Flake Vinyl Ester lining.
13	Document No. B269-475- 17-44-EL-1001 Equipment list for RO-DM Plant and ZLD Plant,	Page no 1900 of 7166,	Activated Carbon Filters- II	MOC	<p>As per data sheet Vessel MOC is CS Epoxy coated, but in Equipment list : CS with Glass Flake Vinyl Ester lining. Please clarify.</p>	MOC of ACF-II: CS with Glass Flake Vinyl Ester lining.
13	Document No. B269-475- 17-44-EL-1001 Equipment list for CPU	Page no 1917 of 7166,	Primary & Secondary Activated Carbon Filter (ACF)	MOC	<p>As per data sheet Vessel MOC is CS Epoxy coated, but in Equipment list : CS with Glass Flake Vinyl Ester lining. Please clarify.</p>	MOC of Primary & secondary ACF: CS with Glass Flake Vinyl Ester lining.
14	Document No. B269-475- 17-44-EL-1001 Equipment list for CPU- PNCP complex	Page no 1920 of 7166,	Primary & Secondary Activated Carbon Filter (ACF)	MOC	<p>As per data sheet Vessel MOC is CS Epoxy coated, but in Equipment list : CS with Glass Flake Vinyl Ester lining. Please clarify.</p>	MOC of Primary & secondary ACF: CS with Glass Flake Vinyl Ester lining.
15	Document No. B269-475- 17-44-SOW-5000 Rev. B	Page no 903 of 7166, Page no 2859 of 7166,	SCOPE CLARITY	Clean agent system for Control Room/SRR of RO/DM/RWTP/CPU/ZLD as per NFPA-2001	<p>Layout shows clean agent room, Please clarify whether clean agent system is applicable or not.</p>	Bidder has to consider the clean agent system as per NFPA-2001 Latest Revision

				Bidder-7		
TO				M/s. INDIAN OIL CORPORATION LTD		
SUB				PRE-BID QUERIES FOR WATER BLOCK PACKAGE (INCLUDING RWTP,RO-DM,CPU & ZLD PLANT)		
TENDER NO.				BIDDING DOCUMENT : SG/R269-475-PA-T-6701/23		
SR. NO	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
	PART/VOL.	PAGE NO.	CLAUSE NO.	SUBJECT		
1	Part4	Page 1891/7166	Sr. No-52	EQUIPMENT LIST (PLOT PLAN AND WATER GROUP) FOR RAW WATER TREATMENT	Line slaker System-Capacity: 500 kg/hr Query -> Please provide the Line Slaker system Datasheet.	The datasheet of line slaker system shall be developed by the bidder during detail engineering as per line slaker system supplier recommendation.
2	Part4	Page 1891/7166	Sr. No-57	EQUIPMENT LIST (PLOT PLAN AND WATER GROUP) FOR RAW WATER TREATMENT	Drinking water Storage Sump-datasheet - As per Structures PMD No. B269-999-81-41-34222 Query -> Please provide the drinking Water Storage Sump Datasheet or provide retention time to be considered for siting of this tank.	Refer PMD No. B269-999-81-41-34222 attached with the tender for Drinking water sump capacity
3	Part5	Page 2431/7166	-	Indicative Equipment layout- RAW Water Treatment plant	Query-> Treated Water Sump and Drinking water Storage Sump Location is not Found in Layout. Please confirm where we have to locate These tanks in RWTP Layout.	These are located on the left side of the treated water reservoir. Please refer indicative layout.
4	Part4	Page 1899/7166	Sr. No-43	EQUIPMENT LIST (PLOT PLAN AND WATER DEPARTMENT) OF RO-ME BASED DM PLAN	DM Water Storage Tank - AS PER PROCESS DATA SHEET Query -> Please provide DM Water Storage Tank-datasheet	PDS SHALL BE PROVIDED ALONG WITH THE AMENDMENT
5	Part4	Page 1899/7166	Sr. No-44	EQUIPMENT LIST (PLOT PLAN AND WATER DEPARTMENT) OF RO-ME BASED DM PLAN	DM Water Transfer Pumps- AS PER PROCESS DATA SHEET Query -> Please provide DM Water Transfer Pumps-datasheet	Refer Page no 2306 for DM water transfer pump pds
6	Part4	Page 1908/7166	Sr. No-124	EQUIPMENT LIST (PLOT PLAN AND WATER DEPARTMENT) OF RO-ME BASED DM PLAN	Line slaker System-Capacity: 25 m3/hr Query -> Please provide the Line Slaker system Datasheet.	The datasheet of line slaker system shall be developed by the bidder during detail engineering as per line slaker system supplier recommendation.
7	Part 2	Page 158/457	3.32.	SCOPE OF WORK INSTRUMENTATION RWTP, RO-DM, CPU & ZLD PANIPAT REFINERY EXPANSION PROJECT	Contractor shall carryout engineering and 3D modeling for CCTV camera. Contractor shall prepare location layout for CCTV camera in Field & local control room and shall submit for review to purchaser. Based on final approved location layout, CCTV cameras along with junction box, network cabinet, interconnection cabling shall be free issued to contractor. Contractor shall carry out the erection and commissioning of CCTV cameras along with network cabinet and power supply distribution including all cabling under the supervision of CCTV vendor. Contractor shall consider power supply of 1KVA from PDB in CR-112, CR-122 for CCTV camera. Also erection of panel for CCTV camera including base frame supports in CR-112, CR-122 shall be by contractor. Contractor may consider panel size as approx. 2100mm (H) x 800mm (W) x 800mm (D). However actual dimensions shall be inferred during detailed design. Query -> we understand that CCTV & All accessories related to it's installation & commissioning shall be provided(free issued) by Client/Purchaser to us. only coordination/monitoring with cctv vendor & purchaser will be our scope. Kindly Confirm.	CCTV and its accessories shall be free issued to contractor. Bidder to follow tender requirement for bidder's scope related to CCTV.
8	Part 2	Page 155/457	2.1.1.	Scope of design & engineering for Instrumentation	A. RO-DM ,CPU & ZLD package, dedicated PLC based control system for RWTP. B. RWTP package, dedicated PLC based control system for RWTP. C. New CPU package in PNCV complex, dedicated PLC Scope of procurement, supply and installation based control system for New CPU in PNCV complex. (All instrumentation and control equipments in RWTP, RO-DM ,CPU, ZLD & New CPU package in PNCV complex package shall be hard-wired interfaced to dedicated PLC based control systems for respective package). Query -> We assume that all field instruments, analyzer, cables, Jfcs, cable tray tubing, hook up materials, support for new CPU in PNCV Complex package will not be our Scope of Supply and engineering. Only PLC based Control system with console panel shall be our Scope of design and supply for details Engineering for these control system, purchaser will provide all required layout (n kit, Spec, Instruments index etc.). Kindly confirm	Bidder's understanding is not correct, follow tender requirement for scope related to new CPU package.
9	Part 2	Page 156/457	3.1.	Scope of procurement, supply and installation	Dedicated Package PLC based control system for 1. RO-DM/ CPU ii. ZLD Consoles and other associated hardware including cabinet base frame supports in CR-112. Dedicated Package PLC based control system for RWTP package Consoles and other associated hardware including cabinet base frame supports in CR-122. Dedicated Package PLC based control system for new CPU package in PNCV complex. Consoles and other associated hardware including cabinet base frame supports in DMR0 control room. Query -> We will design, Supply Stand alone PLC/SCADA based system for dedicated package. Kindly confirm.	Follow tender requirement for control system requirement.
10	General	General	General	General	We understand that supply of all Electrical equipments of New CPU plant shall be in "others" scope.	All electrical scope of work & supply for the New CPU plant is in Contractor's Scope. For CPU plant (in PNCV Area), Bidder to note that only Feeders for Contractor's supplied equipments shall be provided by Owner in the nearest Substation-10 (in the PNCV Area). Complete power supply & other associated electrical works for feeding CPU package back in PNCV complex shall be Contractor's scope of supply & work.
11	Part-3	Page 127/243	2.4.3.	PLC Configuration	A. Redundant PLC control system with all the following modules (cards) and network components as being redundant: a. PLC Processor (CPU) and Communication Processor b. Processor power supply, 10 rack power supply & 10s Bulk Power Supply (BPS). c. Serial communication (Mother) module. d. IO cards / modules (all closed loops, controls, logics, interlocks, safety, shutdown signals). e. PLC network and its components (switches). B. The entire PLC control system hardware shall be pre-installed and pre-wired in industrial grade steel cabinets. All PLC cabinets shall be freestanding type with dimensions of 2400mm (H) x 800mm/1200mm (W) x 800mm (D) and of colour RAL 7035. The cabinets shall be installed in control room (CR-112,CR-122,DMR0 control room) C. Contractor to ensure that no items shall be installed in side of the PLC panels except, utility socket and its switch and Fan failure detection modules. Query -> We under stand that redundancy of I/O cards module is not required.Pls confirm.	Bidder's understanding is not correct, redundancy shall be considered as per tender requirement

Bidder-8

Work Details		: RWTP/RODMP/CPU/ZLDP FOR P-25																										
Bidding Document No		: B269-475-17-44-PA-T-8701																										
Sl. No.	Reference of Bidding Document				Bidder's Query	Consultant Reply																						
	Part / Vol.	Page No.	Clause No.	Subject																								
1	Part-II, Doc. No. B2269-475-17-44-SS-1002, Rev.2, Page 9 of 26.	74 of 457	2.13	Performance and Guarantees	Condensate quality at ZLD plant outlet parameters: <table><tr><td>Component</td><td>Unit</td><td>Condensate Water Quality</td></tr><tr><td>Total Dissolved Solids</td><td>ppm</td><td>< 300</td></tr><tr><td>Total Suspended Solids</td><td>ppm</td><td>< 1.0</td></tr></table>	Component	Unit	Condensate Water Quality	Total Dissolved Solids	ppm	< 300	Total Suspended Solids	ppm	< 1.0	Shall be updated in amendment													
Component	Unit	Condensate Water Quality																										
Total Dissolved Solids	ppm	< 300																										
Total Suspended Solids	ppm	< 1.0																										
2	Part-II, Doc. No. B269-475-17-44-DB-1001, Rev.3, Page 11 of 21.	233 of 457	2.3.3	Treated water quality at zero liquid discharge plant outlet <table><tr><td>S. No.</td><td>Parameter</td><td>Unit</td><td>Specification</td></tr><tr><td>1.</td><td>Temperature</td><td>Deg C</td><td>40 (Max)</td></tr><tr><td>2.</td><td>pH</td><td>-</td><td>6.5 - 7.5</td></tr><tr><td>3.</td><td>Total Dissolved Solids (TDS)</td><td>ppm</td><td>100(Max)</td></tr><tr><td>4.</td><td>Total Suspended Solids (TSS)</td><td>ppm</td><td>Nil</td></tr><tr><td>5.</td><td>Silica (as SiO₂)</td><td>ppm</td><td>< 1.0</td></tr></table> In view of discrepancies in the above indicated parameters, please clarify the guarantee parameters to be considered for ZLD	S. No.	Parameter	Unit	Specification	1.	Temperature	Deg C	40 (Max)	2.	pH	-	6.5 - 7.5	3.	Total Dissolved Solids (TDS)	ppm	100(Max)	4.	Total Suspended Solids (TSS)	ppm	Nil	5.	Silica (as SiO ₂)	ppm	< 1.0
S. No.	Parameter	Unit	Specification																									
1.	Temperature	Deg C	40 (Max)																									
2.	pH	-	6.5 - 7.5																									
3.	Total Dissolved Solids (TDS)	ppm	100(Max)																									
4.	Total Suspended Solids (TSS)	ppm	Nil																									
5.	Silica (as SiO ₂)	ppm	< 1.0																									

Name of Work : RWTP, RO-DMP, CPU & ZLD Plant for Panipat Refinery Expansion Project (P25) of M/s Indian Oil Corporation Limited (IOCL), India

Bidding Document: SG/B269-475-PA-T-8701/23

Bidder: Paramount Limited, Vadodara (Ref. 1776)

PRE-BID QUERIES (COMMERCIAL)

SL. No.	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
	PART/VOL.	PAGE NO.	CLAUSE NO.	SUBJECT		
1	NOTICE INVITING e-TENDER	Page 34 of 7166	11.1.3	Technical Criteria – Minimum Capacity for Multi Effect Evaporator unit	<p>You are aware that the large capacity MEE are being tendered by various refineries in recent past only and not a single MEE plant is commissioned in refineries till the date.</p> <p>The references of various contractors who are qualifying in Oil & Gas EPC water & waste water projects can be only in Chemical/ Pharma/ Textile etc industries where capacities of MEE are 150 m3/ day or less.</p> <p>Paramount, to its credit have, on its own designed, engineered, manufactured, supplied, erected & commissioned successfully following largest capacity MEE project in last 12 years:</p> <p>For Mazda Colours Limited: We have executed an order of MEE System for 150 m3/ day and the said plant was commissioned in May 2016.</p> <p>Therefore, we have our own eligible experience for execution of MEE in last 12 years if capacity is allowed as 150 m3/ day in PQ criteria in place of 180 m3/ day.</p> <p>Kindly be informed that if 150 m3/ day capacity is not granted in PQ criteria, other suppliers who would have executed MEE orders of required capacity would have no experience of stringent design, engineering & specifications including design safety factors, approved vendors & manufacturing/ testing standards viz. end to end executions and comfort of system integration with guarantees would both become limitation with these vendors.</p> <p>Hence, kindly allow PQ criteria of 150 m3/ day for MEE in place of 180 m3/ day.</p>	Please follow tender

RWTP, RO-DMP, CPU & ZLD PLANT for PANIPAT REFINERY EXPANSION PROJECT (P25) of M/s IOCL

Bidding Document No.: SG/B269-487-PC-T-8702/1018

REFERENCE OF ENQUIRY DOCUMENT						
Sl.No.	PART/VOL	PAGE NO.	CLAUSE NO.	SUBJECT	BIDDER'S QUERY	EIL/IOCL REPLY
1	TENDERDOCUMENT_PART_1	Pg. 110 of 192	8.6.0.0	Limitation of Liability	The limitation of liability clause presently in the tender is very restrictive and has several open ends resulting into an unlimited liability for the contractor. This will be very difficult for all the contracting firms to accept. We propose and request you to replace the Limitation of Liability clause with relevant FIDIC Clauses as they are balanced to protect interests of both employer and contractor.	Already replied
	Section 8 Miscellaneous-8.6.0.0					
2	Part 1-NOTICE INVITING e-TENDER	4-5 of 24 /32-33 of 757		Extension of the Bid and Site visit date and pre bid clarifications	Due to Covid restrictions and to prepare a detailed Offer we request you to extend the bid submission date by One month and Site visit date upto February 15th. We also request you to extend the pre bid clarification submission date upto 5th February	Already replied
3	Part 1	Page 27/ 459 of 756	8	Price adjustment	As per the referred clause price adjustment is allowed only for Steel component and hence we request you to allow price adjustment for all other materials.	Already replied
3	Drawings B269-999-17-44-00002-Rev F ; B269-000-16-51-0080-Rev E B269-472-17-44-10001-Rev 01 & B269-475-17-44-10001-Rev 01	-	-	Plot plan	Please furnish dimensional details of proposed RWTP layout within overall plot plan with proposed treatment plant	bidder to visit site for better clarity
4	Drawings B269-999-17-44-00002-Rev F ; B269-000-16-51-0080-Rev E & B269-475-17-44-10001-Rev 01	-	-	Plot plan	Please furnish dimensional details of proposed RODM/CPU/ZLD/CPU-PNCP layout	Refer Technical amendment no: B269-475-81-45-TA-8701-01 Rev.0
5	Drawings B269-999-17-44-00002-Rev F ; B269-000-16-51-0080-Rev E & B269-475-17-44-10001-Rev 01	-	-	Plot plan	Please furnish dimensional details of proposed CPU-PNCP layout	Refer Technical amendment no: B269-475-81-45-TA-8701-01 Rev.0
6	Drawings B269-000-17-44-00001 & B269-000-16-51-0080-Rev E	-	-	Plot plan	Please furnish dimensional details of OVERALL PLOT PLAN IN ACAD	The document will be shared with the successful bidder
7	Scope Drawings B269-475-81-41-14561-Rev B & B269-475-81-41-14562-Rev C	2550 & 2555	-	Grade Level	We understand that entire site grading within scope battery limit already graded up to FGL 238.32 M above MSL, EPCC contractor to further raise grading level to meet HPP 238.72.	Refer Note -3 of Scope Drawings B269-475-81-41-14561-Rev B & B269-475-81-41-14562-Rev C
8	Scope Drawings B269-475-81-41-14561-Rev B & B269-475-81-41-14562-Rev C	2550 & 2555	-	Type of Pavement	We understand that RCC pavement shall be provided for entire area within battery limit, Type of pavement for vehicular movement is Type - I and balance area is Type -II,Pipe supports to be designed accordingly.	Refer Note -7 of Scope Drawings B269-475-81-41-14561-Rev B & B269-475-81-41-14562-Rev C
9	Scope Drawings B269-475-81-41-14561-Rev B & B269-475-81-41-14562-Rev C	2550 & 2555	-	Approach Road	Please furnish length of approach road from main road to scope battery limit.	Refer Note -8 & 9 of Scope Drawings B269-475-81-41-14561-Rev B & B269-475-81-41-14562-Rev C
10	Drawings B269-000-16-51-0080-Rev E & B269-475-81-41-14561-Rev B	-	-	RWTP area	RWTP Area marked as per overall plot plan is 21560 sqm ; where as per Scope drawing for RWTP it was mentioned as 21229 sqm. Please clarify.	Refer Latest Overall plot plan attached with Technical amendment no: B269-475-81-45-TA-8701-01 Rev.0 alongwith scope drawing

RWTP, RO-DMP, CPU & ZLD PLANT for PANIPAT REFINERY EXPANSION PROJECT (P25) of M/s IOCL

Bidding Document No.: SG/B269-487-PC-T-8702/1018

Sl.No.	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
	PART/VOL	PAGE NO.	CLAUSE NO.	SUBJECT		
11	Drawings B269-000-16-51-0080-Rev E & B269-475-81-41-14562-Rev C	-	-	RODM/CPU & ZLD area	RODM/CPU & ZLD Area as per Scope drawing for mentioned as 49498 sqm. Please confirm.	Refer Latest Overall plot plan attached with Technical amendment no: B269-475-81-45-TA-8701-01 Rev.0 alongwith scope drawing
12	General	-	-	Existing Facilities in RWTP/RODM/CPU & ZLD	Demolishing/refurbishment of existing above ground / under ground facilities within scope battery limits is not bidder's scope of work.Please confirm	Bidder to follow bid requirements
13	Engineering Design basis	-	-	Pipe rack at Battery limit	Bidder is free to route the pipe rack, please clarify and confirm	LOCATION OF THE OSBL PIPE RACK BATTERY LIMIT FOR BOTH RWTP & RO-DM-CPU-ZLD PLANT HAS BEEN INDICATED IN THE PIPING SCOPE DRAWING (B26-475-16-43-SK-8701 ,REV C) . THE FINAL DETAILS OF THE BATTERY LIMIT ARRANGEMENT SHALL BE FIRMED UP DURING DETAIL ENGINEERING .BIDDER IS NOT FREE TO ROUTE OR SUGGEST THE ROUTING OF THE OSBL PIPE RACK .
14	General	-	-	Pipe rack at Battery limit	Please furnish section/elevation details of pipe rack.	THE TENTATIVE CORDINATES OF THE OSBL PIPE RACK INTERFACE WITH RWTP & RO-DM-ZLD-CPU PACKAGE LIMIT IS INDICATED IN B269-487-16-43-SK-8701. THE TENTATIVE PORTAL CROSSECTION WIDTH CAN BE 6M /8M .NO OF PORTALS IN THE CROSSECTION SHALL BE FINALISED DURING DETAILED ENGINEERING THE TENTATIVE ELEVATIONS ARE 106.250 & 108.750
15	Geotechnical Report B269-475-81-41-GTD-0022-Rev. 0	1639	5	Ground Water Level	Design groundwater table is considered at 2.0m below finished ground level (FGL) for foundation design purposes, please confirm.	Confirmed.
16	Geotechnical Report B269-475-81-41-GTD-0022-Rev. 0	1640	6	Foundation	Considering functional requirement and soil strata Net SBC at Founding level considered as 10 T/sqm in all areas and how ever if Net SBC increases /decreases as per geotech report,Bidder is free to adopt,please confirm.	Bidder to note that carrying out of confirmatory soil investigation is in their scope of work, based on whcih they shall formulate comprehensive Geotechnical recommendation document as per the bid requirements.
17	Geotechnical Report B269-475-81-41-GTD-0022-Rev. 0	1639	5	Settlement	Settlements considered 25 mm for isolated footings and 40 mm for strip footings , How ever per Table 1 / IS 1904 the same can be considered 50 mm for isolated footings and up to 75 mm for raft type foundation system, please confirm.	Bidder's to follow the tender requirements.

RWTP, RO-DMP, CPU & ZLD PLANT for PANIPAT REFINERY EXPANSION PROJECT (P25) of M/s IOCL

Bidding Document No.: SG/B269-487-PC-T-8702/1018

Sl.No.	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
	PART/VOL	PAGE NO.	CLAUSE NO.	SUBJECT		
18	Geotechnical Report B269-475-81-41-GTD-0022-Rev. 0	-	-	Chemical analysis of water	Please furnish chemical analysis of sulphates and chlorides in ground water.	Available data are attached in the tender document. Bidder to generate the required/additional data during confirmatory soil investigation.
19	Site Specific Seismic Spectra A882-000-16-54-DB-0001	2870	-	Liquefaction	We Request to furnish liquefaction analysis report	Available data are attached in the tender document. Bidder to note that carrying out of confirmatory soil investigation is in their scope of work, based on which they shall formulate comprehensive Geotechnical recommendation document as per the bid requirements.
20	Engineering Design Basis (Civil-Structural & Architectural) B269-999-81-41-EDB-1001_Rev. 0	1076	Cl B 4.1.1 (5)	Uplift Check	The Design ground water table shall be as per geotechnical report..... Uplift check for liquid retaining structures shall be considered at " 2.0 m from FGL ", please confirm.	Confirmed.
21	Scope of Work & Supply (UG Civil-Structural & Architectural) B269-475-81-41-SOW-8701_Rev. D and Engineering Design Basis (Civil-Structural & Architectural) B269-999-81-41-EDB-1001_Rev. 0	949 & 1079	1.1 & Cl A 4.2.1	Design Methodology	All liquid retaining structures shall be designed for uncracked section..... As per latest IS 3370 (2021), liquid retaining structures shall be designed as per limit state method with limiting crack width of 0.20 mm and working stress design is deleted, Please confirm.	Design concept as mentioned in the EDB may be followed. However, for crack width or any other criteria, bidder to comply with the codal provisions.
22	Scope of Work & Supply (UG Civil-Structural & Architectural) B269-475-81-41-SOW-8701_Rev. D	-	-	Exposure condition	Our Exposure condition shall be "Severe" as per IS 3370(2021) please confirm.	Bidder to comply with the codal provisions.
23	General	-	-	Boundary wall & security building for RWTP	We presume that, construction of permanent Boundary wall / fences & Security building not in current scope of tender. Kindly confirm.	Refer Scope Drawing B269-475-81-41-14561 & B269-475-81-41-14562 attached with tender
24	General	-	-	Boundary wall & security building for RODM/CPU & ZLD	We presume that, construction of permanent Boundary wall / fences & Security building not in current scope of tender. Kindly confirm.	Refer Scope Drawing B269-475-81-41-14561 & B269-475-81-41-14562 attached with tender
25	General	-	-	CPU-PNCP	Location, area marked ,scope layout of CPU @ PNCP not clear, request to furnish the same.	Refer Technical amendment no: B269-475-81-45-TA-8701-01 Rev.0
	Process / Mechanical Clarification					
26	Tender part-5, RWTP	2433 of 7166	raw water treatment plant (RWTP) sh 1 of 2	RWTP inlet water quantity : 2400 cu.m/hr	TO meet the 2400 cu.m/hr UF permeate flow, it requires the more quantity of raw at inlet of RWTP plant. Please confirm the quantity.	THE DESIGN FLOW RATE FOR THE UF FEED PUMPS SHALL BE DESIGNED BASED ON THE INSTANTANEOUS FLOW REQUIREMENTS (DESIGN FLOW) OF THE UF AS PER UF SYSTEM SUPPLIER RECOMMENDATIONS. The backwash waste is envisaged to be recycled back to the plant inlet for maximizing recovery in the plant.
	Tender part-2, RWTP	766 of 7166	B269-472-17-44-SS-1001	Performance guarantee UF permeate = 400 cu.m/hr (6W+1S)		

RWTP, RO-DMP, CPU & ZLD PLANT for PANIPAT REFINERY EXPANSION PROJECT (P25) of M/s IOCL

Bidding Document No.: SG/B269-487-PC-T-8702/1018

REFERENCE OF ENQUIRY DOCUMENT						
Sl.No.	PART/VOL	PAGE NO.	CLAUSE NO.	SUBJECT	BIDDER'S QUERY	EIL/IOCL REPLY
27	Tender part-5, RWTP	2433 of 7166	raw water treatment plant (RWTP) sh 1 of 2	HRSCC outlet : Clarified water tank sludge to centrifuge Clarifier outlet to Flash mixture inlet	As per RWTP flow diagram, the complete sludge handling system treated water is reusing the RWTP plant only. There is no provision of feed this clarified water to UF inlet tank. Please confirm the same.	Bidder understanding is correct
		2459 of 7166	Schematic Flow diagram Demineralization plant RO based DM plant sh 1 of 2	one of the source to UF inlet source is RWTP HRSCC clarified water		
28	Tender Part 5 ,CPU	2309 / 7166	B269-476-02-DS-1901	Oil Coalescer	As per Datasheet for Oil coalescer, oil inlet = 5 PPM , Outlet requirement =<5ppm. As per CPU Datasheet Design Oil inlet is10 ppb , outlet Oil content, ppm Nil. As per process, condensate will be feed to oil coalescer, ACF & CPU. As there is ambiguity in oil quantity design parameters for oil coalescer.	1. In CPU PDS(B269-476-02-DS-1901) characteristics of Feed Condensate, Oil content unit shall be considered as ppm. PDS shall be updated.
29	Tender Part 5 ,CPU	1917 / 7166	Equipment List CPU	CPU Feed pumps ,Pump MOC Casing : SS304 L , Impeller : SS304L	As there is discrepancy in the Pump MOC , Please Confirm the Pump MOC	Please refer TA-01.
	Tender Part 5 ,CPU	2163 / 7166	B269-476-17-44-DS-1002 ,	CPU Feed pumps ,Pump MOC Casing : CS , Impeller : CS		
30	Tender Part 5 ,CPU	2166 / 7166	B269-476-17-44-DS-1004	Activated Carbon filter MOC - SHELL & HEADS - CARBON STEEL ASTM SA 516 GR 60/70 SPECIAL SURFACE FINISH INSIDE (YES/NO) - YES, AS PER EIL SPECS. ETAILS OF INTERNAL PROTECTION EPOXY COATED	As there is discrepancy in the type of painting Activated carbon filter, Please Confirm the ACF MOC.	MOC shall be CS with glass flake vinyl ester lining. Shall be updated in amendment.
	Tender Part 5 ,CPU	1917 / 7166	Equipment List CPU	Activated Carbon Filter MOC - Shell CS with glass Flake Vinyl Ester lining		
31	Tender Part 2	989 / 7166	2.3.3. TREATED WATER QUALITY AT ZERO LIQUID DISCHARGE PLANT OUTLET	3. Total Dissolved Solids (TDS) ppm 100(Max	There is discrepancy in the ZLD Plant Condensate TDS & TSS Quality, Please confirm. We request to kindly modify the treated condensate qty from 100 ppm to 150 ppm as with feed 43000 ppm the thermal systems design shall vary in quality.	The condensate quality as per SOW document B269-475-17-44-SS-1001 shall be guaranteed by system supplier at ZLD Plant outlet
	Tender Part 2	830 / 7166	Quality Parameters to be guaranteed under ZLD as specified below:	Condensate Quality at ZLD Plant Outlet Component Unit Condensate Water Quality Total Dissolved Solids ppm < 300 Total Suspended Solids ppm < 1.0		
32	Maximum Consumption Figures for Utilities in ZLD Plant, RWTP- RO-DM & CPU	846 of 7166		Power , kW	Please confirm whether Miscellaneous loads like lighting , Ventilation , Transformer losses to be considered for power guarantees. Also, Please confirm power requirement of intermittent operation pumps/blower to be considered for power evaluation.	Power guarantee shall be as per loading and penalty criteria document no. B269-472/475/476-17-44-LC-8701
33	6.1 Maximum Consumption Figures for Utilities	900/7166		Power , kW	Please confirm whether Miscellaneous loads like lighting , Ventilation , Transformer losses to be considered for power guarantees	Power guarantee shall be as per loading and penalty criteria document no. B269-472/475/476-17-44-LC-8701
34	Datasheets B269-475-17-44-DS-1011, ITEM NO.: 475-K-101 A/B/C	2006 of 7166	FLOW RATE NORMAL(m3/hr) 690	Flowrate capacity of the blowers	There is a discrepancy in the blower capacity. Please confirm the value to be considered	Flow rate of Filter Air Blower-I shall be 630 Nm ³ /h

RWTP, RO-DMP, CPU & ZLD PLANT for PANIPAT REFINERY EXPANSION PROJECT (P25) of M/s IOCL

Bidding Document No.: SG/B269-487-PC-T-8702/1018

Sl.No.	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
	PART/VOL	PAGE NO.	CLAUSE NO.	SUBJECT		
	Equipment list B269-475-17-44-EL-1001, Rev 3	1896 of 7166	11. Capacity 630 M3/h		value to be considered.	630 Nm3/h
35	Datasheets B269-475-17-44-DS-1053, ITEM NO.: 475-K-104 A/B	2055 of 7166	FLOW RATE NORMAL(m3/hr) 565	Flowrate capacity of the blowers	There is a discrepancy in the blower capacity. Please confirm the value to be considered.	Flow rate of Filter Air Blower-II shall be 560 Nm3/h
	Equipment list B269-475-17-44-EL-1001, Rev 3	1900 of 7166	56. Capacity 560 Nm3/h			
36	Datasheets Equipment List	1844 to 2156 of 7166	Head	Head of equipment	We understand that the head mentioned in the datasheet & equipment list is tentative. The same shall be finalised during detailed engineering. Please confirm.	Head indicated in datasheets and equipment list are minimum requirements. Bidder to finalize during detail engineering
37	Datasheets B269-475-17-44-DS-1011, ITEM NO.: 475-K-101 A/B/C	2006 of 7166	3 (2w+1S)	No. of working blowers	There is a discrepancy in the number of blowers. Please confirm the value to be considered.	Filter Air Blower-I shall be 2 nos. (1W + 1S)
	Equipment list B269-475-17-44-EL-1001, Rev 3	1896 of 7166	2 (1+1S)			
38	Notice inviting Tender	35 of 756	11.1.3- VI	Number of MOU for Zero Liquid discharge Plant with vendors	Kindly Clarify how many MOU's can be kept along with the bid.	MoU shall be with supplier(s) meeting the BQC criteria
39	Part II - Doc No B269-472-17-44-SS-1001	Page 13 of 22/15 of 457 /77 of 457	4	Sludge disposal from Centrifuge to Landfill	Kindly confirm Our sludge Disposal Point shall at the Tip of Centrifuge. Further disposal from centrifuge to Shed area and Land fill will be in IOCL Scope.Kindly confirm whether is understanding is correct	The sludge shall be collected in trolley. Disposal of sludge from trolley shall be in IOCL's scope. The trolley shall be in contractor's scope.
40	Part II	Page 227 of 457	2.1.1	Feed Streams of the DM Plant	We request you to provide the details of bolier blow down TDS break up.	The ionic breakup is not available, however, the major contaminants in Boiler blow down shall be silica and phosphates
41	Part II -RWTP	-	-	Raw Water Stoarge	The raw water treatment and treated raw water reservoir shall have with two compartments with a total storage capacity equivalent to eight hours of Treated Raw Water Requirement for the P-25 Project. The new raw water system will comprise of: 8 hrs each compartment or both tanks together. Kindly confirm	Refer Note no 4 in P&ID no B269-02-42-472-1111
42	TENDERDOCUMENT_PART_2 269-81-17-44-SS-1001,	4.0 SCOPE OF CONTRACTOR'S WORK/ SUPPLY (ISBL)	Page 12 of 19	Required integration of new and existing signals shall be done in the new control system provided for the CPU.	Kindly provide the number of I/Os from existing system which are to be taken care in New Control System.	To be considered by bidder and confimed during detail engineering
43	TENDERDOCUMENT_PART_2 B269-475-16-51-SOW-8701	2. Scope of design & engineering	Page 2 of 12	A. RO-DM ,CPU & ZLD package, dedicated PLC based control system for i RO-DM/CPU ii ZLD	We understand that common PLC shall be considered fpr RO-DM/CPU and ZLD. Please confirm.	Bidder's understanding is not correct, dedicated PLC based control system shall be supplied for RO-DM/CPU and ZLD as per tender requirement
44	TENDERDOCUMENT_PART_2 B269-475-16-51-SOW-8701	2. Scope of design & engineering	Page 6 of 12	Contractor shall carryout engineering and 3D modeling for CCTV camera. Contractor shall prepare location layout for CCTV cameras in Field & local control room and shall submit for review to purchaser. Based on final approved location layout, CCTV cameras along with junction box, network cabinet, interconnection cabling	There is a contradiction in the clause. From below clause, We understand that CCTV is not in Bidder scope of Supply. Please	CCTV shall be free issued to

RWTP, RO-DMP, CPU & ZLD PLANT for PANIPAT REFINERY EXPANSION PROJECT (P25) of M/s IOCL

Bidding Document No.: SG/B269-487-PC-T-8702/1018

Sl.No.	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
	PART/VOL	PAGE NO.	CLAUSE NO.	SUBJECT		
45	TENDERDOCUMENT_PART_2 B269-475-16-51-SOW-8701	2. Scope of design & engineering	Page 9 of 12	Coordination with I. Owner/Purchaser II. Package PLC vendor III. Purchaser's DCS / ESD PLC vendor IV. Purchasers CCTV vendor V. System oriented item's vendor VI. Instrumentation site team for successful commissioning	understand that CCTV is not in bidder scope of supply. Please confirm.	CCTV shall be free issued to bidder.Bidder's scope related to CCTV is as tender requirement.
46	TENDERDOCUMENT_PART_2 B269-475-16-51-SOW-8701	2. Scope of design & engineering	Page 9 of 12	Coordination with I. Owner/Purchaser II. Package PLC vendor III. Purchaser's DCS / ESD PLC vendor IV. Purchasers CCTV vendor V. System oriented item's vendor VI. Instrumentation site team for successful commissioning	We understand that DCS/ESD PLC is not in Bidder scope of supply. Please confirm.	Main Plant DCS loacted in UCR-105 is by purchaser, bidder to follow tender requirement for detailed scope of work related to package PLC .
47	TENDERDOCUMENT_PART_3 B269-475-16-51-SP-8701	Clause 2.1	Page 4 of 42	Further data shall also be sent to Purchaser's Main plant DCS at UCR-105 (through CR-112 & CR-122) for monitoring & shall be mapped to DCS with dedicated graphics.	We understand that updation required (Hardware/ Software) in MCR DCS shall be in purchaser scope. Please confirm.	Noted
48	TENDERDOCUMENT_PART_3 B269-475-16-51-SP-8701	Clause 2.4.5	Page 5 of 42	PLC SOE (Sequence Of Events) requirement - SOE capability required with PLC scan-time.	We propose to have 100 SOE points for each PLC. Please confirm the same.	Follow tender requirement
49	TENDERDOCUMENT_PART_3 B269-475-16-51-SP-8701	Clause 2.4.5	Page 8 of 42	Isolated Output - Shall be provided wherever repeat signals are required.	Kindly clarify which signals are referred as repeat signal here.	As per P&ID and process requirement.
50	TENDERDOCUMENT_PART_3 B269-475-16-51-SP-8701	Clause 2.4.5	Page 8 of 42	Interposing Relays - Shall be provided for all MCC interface and field switches (if applicable).	Interposing Relays shall be considered at MCC end for the Digital Output signals, interfaced between PLC and MCC. Please confirm the requirement.	shall be at control system end in control room

FORMAT FOR BIDDERS' QUERIES (Commercial)

WORK DETAILS : RWTP, RO-DMP, CPU & ZLD PLANT for Panipat Refinery Expansion Project (P25) of M/s Indian Oil Corporation Limited (IOCL), India Expansion Project (P25) of M/s Indian Oil Corporation Limited (IOCL), India

BIDDING DOCUMENT : SG/B269-475-PA-T-8701/23

NAME OF BIDDER : Larsen and Toubro Limited

Sl.No.	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
	PART/VOL.	PAGE NO.	CLAUSE NO.	SUBJECT		
10	ANNEXURE A-Xa TO SCC GUARANTEES & PENALTIES FOR OPERATION & MAINTENANCE	6 of 9 (626/5335)	5.3 (1)	Penalty clause for short fall in performance during Operation & Maintenance period due to any fault on the part of the Operation & Maintenance Contractor	Any deviation in Raw effluent quality will effect the performance of plant, process equipment / system. If any such occasions, bidder not to be penalized for not meeting the quality of treated effluent water untill the plant restore the performance. Kindly confirm	Please follow tender
11	ANNEXURE A-Xa TO SCC GUARANTEES & PENALTIES FOR OPERATION & MAINTENANCE	7 of 9 (627/5335)	Note 1	Maximum cumulative Penalty on account of all the parameters	Bidder requesting to consider maximum penalty shall be limited to 5% of monthly O&M Charges instead of 25% of monthly O&M Charges	bidder to follow bidding documents
12	PREAMBLE TO SCHEDULE OF PRICES	12 of 14 (737/855)	22.9	The Operation & Maintenance Charges shall not be payable in case the Effluent Treatment Plant (ETP) is not under operation for the reason(s) attributable to the Contractor. Pro-rata deduction of Operation & Maintenance Charges will be made in the event of nonoperation/ shut down of the Effluent Treatment Plant (ETP) for reason(s) attributable to the Contractor	O&M is a service contract it comprises majorly on fixed charges (Manpower & maintenance). Such occasions Contractor will take necessary action to resolve the issues to restore plant In operation. So request to consider to pay the fixed component during such occasions. please confirm	bidder to follow bidding documents

SIGNATURE OF THE BIDDER :

WITH SEAL/STAMP

PRE-BID QUERIES (Bidder-6)

Tender No. SG/B269-475-PA-T-8701/23

S.No.	Document Reference	Clause Number/Page No.	Title	As per Clause	Query	
	Commercial					
1	B269-TENDER_DOC-B269-475-17-44-PA-T-8701		-	-	Bidder requests Owner to introduce new Clause as stipulate below: " The Contract Value and duration (if required) shall be adjusted to take account of any increase or decrease in cost resulting from a change in the laws of the Country (including the introduction of new Laws and the repeal or modification of existing Laws) or in the judicial or official governmental interpretation of such Laws, made after the date of Price bid submission, which affect the bidder in the performance of obligations under the Contract.	Not Acceptable. Bidder to follow the provisions of Tender Document.
2	B269-TENDER_DOC-B269-475-17-44-PA-T-8701	2.8.0.0 Page no 22 of 192		Payment for Materials in transit during suspension period which are dispatched but under transit condition	We presume that materials dispatched during suspension period which are in transit condition shall be payable to the bidder . Kindly confirm the same.	Bidder to follow the provisions of Tender Document.
3	General - Main transmission to get raw water requirement	Document No. B269-472-17-44-DB-1001 Rev. B - Page 971/ 7166	RAW WATER REQUIREMENT	Getting Source of water	Raw water will be sourced from existing Munak canal. The Raw water for the new refinery complex shall be made available from the existing raw water reservoir (I & II) facility. The raw water from the existing reservoir shall be treated and filtered in a new raw water treatment plant (RWTP). - Main transmission required for getting Raw water in Whose scope	Bidder's scope start from RWTP battery limit.
4	General - Special Condition for outlet point for drainout dewatering water	Page 482 / 7166 on Special condition	Work In Monsoon	Getting Source of water	The successful bidder shall be required to submit within 15 days of Letter of Acceptance of offer / award of work, to the PMC/OWNER his contingency plan for work during monsoon, clearly stating their methodology / strategy to progress uninterruptedly during monsoon mentioning the deployment of resources viz, numbers, capacity, category of equipment and manpower on a weekly basis for approval - Out let for drainout pumped dewatering water not mentioned	bidder understanding is correct
5	Document Np. B269-475-17-44-DB-1001 Process Design Basis (Plot Plan & Water) for RO-DM Plant and ZLD Plant.	Clause no 2.1.2.2 Page no 984 of 7166	BOILER BLOW DOWN	Blow down Quality	1. TDS given for Blow down from Process Unit is 50 mg/l , Please provide complete ionic breakup (in terms of Ca , Mg etc) so we can calculate combined feed TDS for designing of RO -DM Package.	The ionic breakup is not available, however, the major contaminants in Boiler blow down shall be silica and phosphates

PRE-BID QUERIES (Bidder-6)

Tender No. SG/B269-475-PA-T-8701/23

S.No.	Document Reference	Clause Number/Page No.	Title	As per Clause	Query	
6	Document Np. B269-475-17-44-DB-1001 Process Design Basis (Plot Plan & Water) for RO-DM Plant and ZLD Plant,	Clause no 2.1.2.3 Page no 984 of 7166	TREATED ETP EFFLUENT	Treated ETP Effluent Quality	In Treated ETP Effluent Quality, The following parameters are also present in water. 1. COD \leq 125 mg/l 2.BOD \leq 15 mg/l 3. Cyanide as CN \leq 0.2 mg/l 4. Hexavalent Chromium \leq 0.1 mg/l 5. Total Chromium as Cr \leq 2.0 mg/l 6. Oil & Grease \leq 5.0 mg/l Please note that in RO-DM given scheme , Treatment for above mentioned ions is not given . Please clarify .	The scheme provided is minimum requirement.
7	Document Np. B269-475-17-44-DB-1001 Process Design Basis (Plot Plan & Water) for RO-DM Plant and ZLD Plant,	Clause no 2.1.2.3 Page no 984 of 7166	TREATED ETP EFFLUENT	Treated ETP Effluent Quality	As per Treatment Scheme Treated Effluent from ETP will be feed to UF-1 Feed Collection Tank , after That directly feed to UF & RO Section. In Treated ETP Effluent Quality, The following parameters are also present in water. 1. Lead as Pb \leq 0.1 mg/l 2.Mercury as Hg \leq 0.01 mg/l 3. Zinc as Zn \leq 5.0 mg/l 4. Nickel as Ni \leq 1.0 mg/l 5. Copper as Cu \leq 1.0 mg/l 6. Vanadium as V \leq 0.2 mg/l 7. Benzene \leq 0.1mg/l 8. Benzo Pyrene \leq 0.2mg/l 9. COD \leq 125mg/l 10. Oil & Grease : \leq 5.0 mg/l Please note that UF will not remove dissolved solid, Heavy metal, Oil & These heavy metal can damage the RO membrane if we feed without treatment . Please clarify .	The scheme provided is minimum requirement.
8	Document Np. B269-475-17-44-DB-1001 Process Design Basis (Plot Plan & Water) for RO-DM Plant and ZLD Plant,	Clause no 2.1.2.3 Page no 984 of 7166	TREATED ETP EFFLUENT	Oil & Grease \leq 5 mg/l	Please specify nature of Oil (suspended or dissolved) ?	This shall be Total oil (combination of free, emulsified and dissolved oil)
9	Document Np. B269-475-17-44-DB-1001 Process Design Basis (Plot Plan & Water) for RO-DM Plant and ZLD Plant,	Clause no 2.1.2.3 Page no 984 of 7166	TREATED ETP EFFLUENT	Oil Content in CTBD & Treated ETP effluent	Oil Content given in Cooling Tower Blow Down from CT-1 & CT-2 is 10 ppm max. Oil content from Treated ETP Effluent is <5 ppm Please note that UF will not remove Oil and as per specification RO -DM Plant Reject Water Quality is showing Oil : NIL , DM Water Quality (at outlet of MB Exchanger) Oil : NIL Please clarify.	Please follow tender.
10	Document Np. B269-475-17-44-DB-1001 Process Design Basis (Plot Plan & Water) for RO-DM Plant and ZLD Plant,	Clause no 2.1.2.3 Page no 984 of 7166	TREATED ETP EFFLUENT	Total Dissolved Solids 3000 mg/l	Please provide ionic breakup (in terms of Ca , Mg etc)	The ionic breakup is not available, can be considered based on Cooling Tower blow down and treated raw water quality.

PRE-BID QUERIES (Bidder-6)

Tender No. SG/B269-475-PA-T-8701/23

S.No.	Document Reference	Clause Number/Page No.	Title	As per Clause	Query	
11	Document Np. B269-475-17-44-DB-1001 Process Design Basis (Plot Plan & Water) for RO-DM Plant and ZLD Plant,	Clause no 2.2.1.1 Page no 987 of 7166	Table-5: RO-DM plant Reject Water Quality	Colloidal Silica as SiO ₂ in Treated water Quality for RO-DM Plant	RO-DM Plant feed sources (CTBD, BD, Treated ETP effluent, Treated RWTP water) are not showing Colloidal Silica as SiO ₂ , but clause 2.3.2 Table – 8: Design Treated Water Quality for RO-DM Plant is showing Colloidal Silica value. Please clarify.	Please follow tender.
12	Document Np. B269-475-17-44-DB-1001 Process Design Basis (Plot Plan & Water) for RO-DM Plant and ZLD Plant,	Clause no 2.1.1 Page no 983 of 7166	FEED STREAM TO THE RO-DM PLANT	TREATED RAW WATER	Treated Raw Water Quantity (m ³ /hr) (Normal) : 149 m ³ /hr Treated Raw Water Quantity (m ³ /hr) (Design) : 20 m ³ /hr Design value is coming less than normal feed value - Please clarify	Please follow tender.
13	Document Np. B269-475-17-44-DB-1001 Process Design Basis (Plot Plan & Water) for RO-DM Plant and ZLD Plant,	Clause no 2.1.1 Page no 983 of 7166	FEED STREAM TO THE RO-DM PLANT	Sl no. 4 ETP Treated Water (Note-2)	Note -2 is missing in the document .Kindly provide the same .	Note-2 stands deleted
14	Document Np. B269-475-17-44-DB-1001 Process Design Basis (Plot Plan & Water) for RO-DM Plant and ZLD Plant,	Clause no 2.1.2 Page no 983 of 7166	DESIGN INLET STREAMS FOR THE RO-DM PLANT		As per Specification RO-DM plant feed source is as below 1. CTBD from CT -1 & CT-2 2. Blow Down from process Unit 3. Blow down from Utility Boiler 4. ETP Treated Water 5. Treated Raw Water Please provide combined water quality which will be feed to RO-DM Plant.	Please follow tender.
15	Document Np. B269-475-17-44-DB-1001 Process Design Basis (Plot Plan & Water) for RO-DM Plant and ZLD Plant,	Clause no 2.1.2.4 Page no 985 of 7166	TREATED RAW WATER	In case the normal feed streams to the RO-DM plant are not available, complete backup of Treated Raw Water shall be considered from the Treated Water Reservoir to produce required quantity of DM water.	As per Clause 2.1.1 FEED STREAM TO THE RODM PLANT Treated Raw water (380M ³ /HR) from Raw Water Treatment Plant shall be kept as backup feed for the RO-DM Plant in case of non-availability of one largest feed to RO-DM plant) and during start-up if required. As per Clause 2.1.2.4 TREATED RAW WATER In case the normal feed streams to the RO-DM plant are not available, complete backup of Treated Raw Water shall be considered from the Treated Water Reservoir to produce required quantity of DM water. Both clauses are contradicting , Clause 2.1.1 is showing RWTP treated water steam will replace from largest in coming feed Source (during start -up if required) & Clause 2.1.2.4 is showing about complete backup . Please clarify	Backup from treated raw water shall be equivalent to one largest feed stream of RODMP. Same shall be updated in amendment
16	B269-81-17-44-SS-1001, Rev. 1	2.10 Page 5 of 19	SUPPLY OF CONSUMABLES & CHEMICALS	HCl, NaOH & Morpholine shall be free issue supply by IOCL.	Please clarify whether Morpholine shall be free issue supply by IOCL or not.	Both plants are at different locations. Morpholine shall be free issue only for CPU located in PNCP area.
	B269-475-17-44-SS-1001, Rev.4	2.10 Page 6 of 25	SUPPLY OF CONSUMABLES & CHEMICALS	HCl and NaOH shall be free issue supply by IOCL		

PRE-BID QUERIES (Bidder-6)

Tender No. SG/B269-475-PA-T-8701/23

S.No.	Document Reference	Clause Number/Page No.	Title	As per Clause	Query	
17	B269-475-17-44-EL-1001 Rev. 3	Sr. no. 5 A. CTBD TREATMENT SECTION	EQUIPMENT LIST FOR RODM PLANT	High Rate Solid Contact Clarifier –I Capacity: 370 m3/h	Please clarify the capacity of High Rate Solid Contact Clarifier –I.	Capacity of HRSCC-I shall be 370 m3/h
	B269-475-17-44-DS-1005	475-CL-101 A/B	DATA SHEET HIGH RATE SOLID CONTACT CLARIFIER-I	INFLUENT FLOW PER UNIT (m3/hr) : 308		
18	B269-476-17-44-EL-1001 Rev. 1	Sr. no. 4, Page 2 of 3 CPU Feed Pumps	EQUIPMENT LIST FOR CPU	CPU Feed Pumps C: SS304L, I:SS304L	Please clarify the MOC of CPU Feed Pumps.	MOC of CPU Feed Pumps shall be C: SS304L; I: SS304L
	B269-476-17-44-DS-1002	ITEM NO.: 476-P-101 A/B	DATA SHEET CPU FEED PUMPS	MOC Casing: CS Impeller: CS		
19	B269-81-17-44-EL-1001 Rev. 0	Sr. no. 3, Page 2 of 3 Unpolished Condensate Feed Pumps	EQUIPMENT LIST FOR CPU-PNCP	Unpolished Condensate Feed Pumps C: SS304L, I:SS304L	Please clarify the MOC of Unpolished Condensate Feed Pumps.	MOC of unpolished condensate Feed Pumps shall be C: SS304L; I: SS304L
	B269-81-17-44-DS-1001	ITEM NO.: 81-P-101 A/B/CC	DATA SHEET UNPOLISHED CONDENSATE FEED PUMPS	MOC Casing: CS Impeller: CS		
20	DWG NO. B269-475 81 41 14562 REV C	-	SCOPE DRAWING FOR ROOM/CPU/ZLD PLANT PACKAGE		In scope of drawing, location of tapping point (utility lines, process line Incoming/Outgoing etc) are not shown. Please provide the same to understand piping scope.	Drawing number B269-475 81 41 14562 REV C is related to mainly underground tapping and General Civil facilities. Location & Elevation of these tapings are to be given during detailed engineering. For above ground piping, refer piping Battery limit drawing.
21	B269-475-02-EL-1001 Rev. A	Page 2 of 2	EQUIPMENT LIST	- DM Water Storage tanks	Please provide the Technical data sheet & size of DM water storage tanks.	Shall be provided in Amendment
22	B269-475-17-44-EL-1001 Rev. 3	Page 16 of 17	EQUIPMENT LIST FOR RODM PLANT	132. Chemical Dosing Tank 133. Chemical Dosing Pumps	Since technical data sheet of Chemical Dosing Tank & Chemical Dosing Pumps are not available in tender and the same are not shown in tender P&IDs, we could not able to understand the requirement of these equipments. Please clarify.	Chemical dosing tank and pump for chemical cleaning of ZLD shall be provided
23	B269-475-17-44-EL-1001 Rev. 3	Sr.no. 124 Page 15 of 17	EQUIPMENT LIST FOR RODM PLANT	Lime Slaker System Capacity: 25 m3/h MOC: DDE	Please provide the technical specification & data sheet of Lime slaker system.	Bidder to develop
24	B269-475-17-44-EL-1001 Rev. 3	Sr. no. 7, Page 2 of 17 Filter Feed Pumps-I	EQUIPMENT LIST FOR RODM PLANT	Filter Feed Pumps-I Capacity:300 m3/h Head: 60 m	Please clarify the differential head of Filter Feed Pump-I 60 m or 45 m.	Minimum differential Head of Filter feed pump shall be 45 m
	B269-475-17-44-DS-1007	ITEM NO.: 475-P-102 A/B/C	DATA SHEET FILTER FEED PUMPS-I	DIFFERENTIAL HEAD (m): 45 m		

PRE-BID QUERIES (Bidder-6)

Tender No. SG/B269-475-PA-T-8701/23

S.No.	Document Reference	Clause Number/Page No.	Title	As per Clause	Query	
25	B269-6-44-0005-8701	Page 4 of 87	PIPING MATERIAL SPECIFICATION INDEX		Please provide the specification of Piping class for SDSS, CPVC, B1N & A21V.	PIPING MATERIAL SPECIFICATION AND CORRESPONDING VALVE MATERIAL SPECIFICATION WHICH ARE GENERALLY APPLICABLE FOR P-25 COMPLEX SHALL BE SHARED WITH SUCCESSFUL BIDDER. FOR PIPING MATERIAL SPECIFICATION AND VALVE MATERIAL SPECIFICATION WHICH ARE EXCLUSIVE TO THE SUBJECT PACKAGE AS PER APPROVED P&IDS OF PACKAGE VENDOR, SHALL BE DEVELOPED BY THE PACKAGE VENDOR AND SUBMITTED FOR APPROVAL ALONG WITH ALL REQUIRED BACK-UP CALCULATIONS MEETING THE REQUIREMENTS OF ASME B31.3.
26	B269-475-17-44-EL-1001 Rev. 3	Sr. no. 7, Page 2 of 17 Filter Feed Pumps-I	EQUIPMENT LIST FOR RODM PLANT	Filter Feed Pumps-I Capacity:300 m3/h Head: 60 m	Please clarify the differential head of Filter Feed Pump-I 60 m or 45 m.	See response to query no. 19
	B269-475-17-44-DS-1007	ITEM NO.: 475-P-102 A/B/C	DATA SHEET FILTER FEED PUMPS-I	DIFFERENTIAL HEAD (m): 45 m		
27	PANIPAT NAPHTHA CRACKER PROJECT EPCC-6 RO DM PLANT	DWG. No. 6556-EPCC-6- P094-D0001-001 Rev 08	Equipment layout of RO based DM plant & CPU	Piping between proposed equipments	Please clarify whether bidder can use existing pipe rack and support from existing pedestals wherever if required.	Noted
28	Document No. B269-475-80-43-SP-8701-01 Rev. No. B	7.2 , Page 8 of 19	Special Requirements for Centrifugal Pumps (General Purpose Process/General Water service)		We understand the centrifugal pumps including RO high pressure pumps are Non-API and conforming to IS standard. Please confirm	Follow Tender Requirement
29	Document No. B269-475-80-43-SP-8701-01 Rev. No. B	7.2 , Page 8 of 19	Special Requirements for Centrifugal Pumps (General Purpose Process/General Water service)		We understand the centrifugal pumps including RO high pressure pumps are Non-API and conforming to IS standard. Please clarify.	Follow Tender Requirement
30	B269-476-02-DS-1901 Rev. No. B	13 , Page 1 of 4	CHARACTERISTICS OF FEED CONDENSATE :	- Unit of oil and ammonia - Value of alkalinity is not furnished	Please recheck and confirm the unit of oil and ammonia, ppb or ppm. Please provide the value of alkalinity.	1. Unit of Oil & ammonia to be considered as ppm. 2. alkalinity value shall be provided in Amendment

PRE-BID QUERIES (Bidder-6)

Tender No. SG/B269-475-PA-T-8701/23

S.No.	Document Reference	Clause Number/Page No.	Title	As per Clause	Query	
31	B269-81-02-DS-1901 Rev. No. 0	13 , Page 1 of 3	CHARACTERISTICS OF FEED CONDENSATE :	CPU PROCESS DATA SHEET NEW CPU (PNCP AREA) Oil contents , ppm for design: 20 ppm	Feed condensate of PNCP area content 20 ppm of oil. Please check and confirm the requirement of oil coalescer unit before primary & secondary ACF as per similar scheme of CPU P-25 project.	1. As per PDS, Design Oil content PPM shall be 10 ppm only. 2. Normal oil content is 2-5 ppm, hence, oil coalescer is not envisaged. If required as per bidder, the oil coalescer shall be included as part of CPU (PNCP complex)
32	TENDERDOCUMENT_PART_2	987 of 7166	2.2.1.1	Reject Water RO-DM Plant (ZLD Package Feed Quality)	As per the Section "Process Design Basis for RO-DMP & ZLDP)" Parameter "Sulphate" concentration/ value is given in the stream "Cooling Tower Blowdown" which will be part of RO-DMP plant feed system, and final reject of the system will be feed to ZLD System. Here sulphate will also get concentrated similar to other ions like Na & Cl in the RO-DMP plant reject. Sulphate concentration in complete ionic balance of feed water is also one of the important parameter for selecting the appropriate MoC of the ZLD equipment's. Hence customer to provide Sulphate concentration in ZLDP feed water.	The ionic breakup is not available, quality of RODM can be considered based on Cooling Tower blow down and treated raw water quality.
33	TENDERDOCUMENT_PART_3	1338 of 7166	1.2	Area Classification	It is mentioned in the Tender Doc "TENDERDOCUMENT_PART_3" in Section "Job Specification for Instrumentation" that Area classification shall be as defined in Electrical section of this tender. Whereas in the Electrical Section of the tender document (Page 1041 of 7166) has given selection criteria for Zone 1 & Zone 2 for the electrical equipment's, but not specified applicable Zone for the sub packages - i) RO-DM, CPU ii) ZLD. Customer to provide the same.	Bidder to note that Hazardous Area Classification (HAC) is not applicable as these are Safe Area plants. However, in case any hazardous substancce is handled in these packages the requirement of corresponding Hazardous Area Equipments shall be complied by Contractor. Further Wherever Contractor is supplying/ installing any hazardous area equipments in these plant areas, then same shall be supported with necessary statutory certificates and PESO approval.
34	TENDERDOCUMENT_PART_4 & TENDERDOCUMENT_PART_8	1581 of 7166 & 4273, 4298, 4319 of 7166	5.0	Job Specification for SME-Rotating Equipments - Pumps	Tender says for "General Purpose Process Service" such as De-mineralised Water (DMW) plants, Raw Water Treatment Plants (RWTP), Effluent Treatment Plants (ETP)" pumps no design code has to be complied. Customer to confirm that our understanding is correct.	Follow Tender Requirement
35	TENDERDOCUMENT_PART_4 & TENDERDOCUMENT_PART_8	1581 of 7166 & 4273, 4298, 4319 of 7166	5.0	Job Specification for SME-Rotating Equipments - Pumps	Design code or standard for the ZLDP pumps are not specified in the "Job Specification" documents as well as in the "Standard Specification for the Centrifugal Pumps". Customer to confirm which design codes to be followed for ZLDP pumps.	Follow Tender Requirement.
36	TENDERDOCUMENT_PART_1 & TENDERDOCUMENT_PART_7	& 3175 onwards of 7166	3.0.5.13 & 2.0	Make of Material & Master Vendor List - Rotating Equipments	It is mentioned in the "TENDERDOCUMENT_PART_1" in Section "3.0.5.13 Make of Material" that All equipment and materials to be supplied under this Contract shall be from approved vendors as indicated in the Bidding Document or as otherwise approved by the Engineer-in-Charge/ OWNER. In the "TENDERDOCUMENT_PART_7" in Section "Master Vendor List" Vendor list for Rotating Equipment like Pumps, Blowers, Progressive Cavity Pumps, Positive Displacement Pumps, Turbo charger are not provided. Customer to provide the same or Customer to confirm that Bidder has to provide vendor list for these equipment with proposal.	Technical Amendement shall follow Shortly.

PRE-BID QUERIES (Bidder-6)

Tender No. SG/B269-475-PA-T-8701/23

S.No.	Document Reference	Clause Number/Page No.	Title	As per Clause	Query	
37	Scope of Work	3.9/912 2.4/1339		PLC system Requirement.	As per this clause, dedicated PLC system is required for RO-DM, ZLD and new CPU (PNCP area). Instead of three PLC systems, can we consider two PLC systems i.e. one for RO-DM/CPU-ZLD and second one for new CPU (PNCP area)	Follow Tender requirement
38	Job Specification	2.4.3/1340		PLC configuration i.e. Redundant PLC control system with all the following modules (cards) and network components as being redundant:	Please confirm whether all IO module to be considered redundant.	Shall be as specified in this clause, follow tender requirement for the same.
39	Job Specification	2.3/1339		PLC to MCC hardwire signal exchange i.e. Start, Stop, trip, Auto / Manual, Local / Remote commands, run feedbacks to / from MCC	Following input/output are being considered in PLC system for each drive based on specification requirement 1. Digital Input : 1 no. 2. Digital Output : 4 nos. Please confirm.	Follow Tender requirement
40	Job Specification	2.1/1339		Further data shall also be sent to Purchaser's existing DCS system at DMRO control room for monitoring & shall be mapped to DCS with dedicated graphics.	Please note PLC HMI software and DCS HMI software works on different platform and all graphics of PLC HMI screen can not be copied in DCS HMI software and hence kindly review the requirement and keep all screen development in DCS in TPL scope only.	Bidder's understanding is not correct, data shall be mapped in DCS and graphics shall be by DCS vendor.
41	Job Specification	2.14/1347		For solenoid valves with Field Manual Reset, reset shall be through separate Exd field push-button (i.e. not integral reset with solenoid valve).	Please note after every command issue to solenoid valve, reset PB is also to be pressed which is practically not possible for sequence operation and hence please review the requirement and confirm.	In general SOV shall be Auto-reset type. For solenoid valve requiring FMR, Shall be as per P&ID and other process requirement.
42	General				Please share PLC Configuration for better clarity.	Follow Tender requirement
43	Scope of Work	3.11.6/913		Cables between MCC and PLC	Since dedicated PLC based control system is required for new CPU (PNCP area) and hence please confirm distance from control room (new CPU PNCP area) to MCC for cable calculation.	For new CPU PNCP area, substaion is SS-10. Distance between SS-10 and DMRO control room is as per overall plot plan attached with tender.
44	Job Specification	1.6-c/1338		Approximate cable distance between DMRO control room existing DCS system.	We assume from this clause that 200 meters distance is from field to existing DMRO control Room for new CPU (PNCP area). Please confirm.	Bidder's understanding is not correct, the distance mentioned is for existing DCS system in DMRO control room and vendor's package PLC.
45	Job Specification	2.4/1339		Purchaser shall consider 1 No. NTP port at purchasers GPS system in UCR-105 and DMRO control room. Cabling from UCR-100 and DMRO control room to vendors system shall be by vendor including required convertors, LIU, etc. at both sides.	Please provide distance from UCR-100 and DMRO to RO-DM/CPU-ZLD control room for this connectivity. We assume, existing cable tray is available to lay these cable. Please confirm.	UCR-100 shall be read as UCR-105, no connectivity is envisaged between UCR-105 and DMRO control room.
46	Job Specification	2.2/1339		Repeat alarms in local panels	We request you to elaborate the clause as the requirement is not clear	Shall be as per P&ID and other tender requirement.
47	General	-	-	-	Please share overall layout showing CR-112, CR-122, DMRO control room, UCR-105 & UCR-100 for better clarity of cable routing.	Overall Duct layout, Rev.G, Attached with instrumentation Amendment.
48	General	1.1/1.2/1338		As defined in Electrical section of this tender	Please Inform Area classification for all Instrumentation and Control system as it is un clear.	Shall be as per instrumentation job specification and scope pf work.
49	B269-472-17-44-DB-1001 Rev. B	6 of 12	3.2	Raw Water Quality	In the tender document, the TSS of Raw water is mentioned as 20-40 mg/l, and in the datasheet as 500 mg/l at peak flow and 200 mg/l at normal flow. Please confirm the inlet TSS to be considered for design of RWTP.	Design suspended solids value shall be considered as 200 ppm for design at RWTP inlet. However, 40 ppm shall be considered for design of UF skids.
	B269-472-17-44-DS-1003	1931 of 7166	Lamella Clarifier	Inlet Characteristics		

PRE-BID QUERIES (Bidder-6)

Tender No. SG/B269-475-PA-T-8701/23

S.No.	Document Reference	Clause Number/Page No.	Title	As per Clause	Query	
50	B269-472-17-44-EL-1001 Rev. 1	Page 3 of 10	14	HRSCC 1W 340 m3/hr	Please confirm the design flow rate for HRSCC to be considered for design.	Design Flow of HRSCC shall be 340 m3/h
	B269-472-17-44-DB-1001 Rev. B	9 of 12	4.3	HRSCC (for UF Backwash Treatment) 1 Working 300 m3/hr Capacity		
51	B269-472-17-44-DS-1003	1931 of 7166	Lamella Clarifier	Inlet Characteristics	Turbidity of 1 NTU can be achieved at the outlet of UF. Turbidity of 1 NTU is cannot be achieved at the outlet of lamella clarifier. Kindly confirm the revised outlet guarantee of turbidity at lamella clarifier.	Guarantee of turbidity at the outlet of lamella clarifier shall be <20 NTU.
52	B269-472-17-44-DS-1019	1951 of 7166	Centrifuge	Influent Flow rate 28 m3/hr	There is a discrepancy in the capacity of centrifuge. Please confirm the capacity to be considered for design of centrifuge.	Design capacity of Centrifuge shall be 30 m3/h
	B269-472-17-44-EL-1001 Rev. 1	Page 4 of 10	19	Capacity: 30 m3/hr (Each)		
53	Tender Part 4	1884 / 7166	B269-472-17-44-EL-1001	RWTP , UF CIP Cleaning Tank Agitator	In Equipment list and Equipment datasheet Agitator for UF CEB dosing tanks (Acid , Caustic and , NaoCL) are not there whereas in P&ID we Agitator has been provided . Please confirm whether Agitator need to provided or not .	No agitator is required for CEB-I/II/III Tanks. Same shall be updated in amendment.
54	Tender Part 4	1884 / 7166	B269-472-17-44-EL-1001	Static Mixer - RWTP	Please provide the Technical details for Static Mixer	Shall be developed by bidder during detailed engineering
55	Part 2	6 of 27	B269-999-80-42-EDB-1002 , 5.1.7	Fire & Smoke Dampers shall be pneumatically operated for Control Room building. For other buildings, Fire & Smoke Dampers shall be electrically operated motorized type. All fire dampers shall be fail safe type.	We propose to provide electrically operated fire damper for control room building similar to other buildings. Please accept.	Not acceptable. This is OISD requirement. Follow tender specification.
56	Part-4	105	B269-475-80-43-SP-8701-02 , 3.1.2	The control room building /analyser room shall be 3-5 mm WC over pressurized. No. of air changes shall be 5-6 ACPH. AHU shall be designed & selected accordingly.	Air change for air conditioned area of Control Room building/ Analyser room shall be designed as per Engineering Design Basis - Packaged Equipment (Doc. No. B269-999-80-42-EDB-1002_Clause No.5.1.9). Please accept.	Not Acceptable. Follow Tender specification.
57	Part-4	105	B269-475-80-43-SP-8701-02 , 3.1.4	For Air conditioning of Substation & control room Building (Housing the sub station and control room) / Analyser room, Contractor to consider Two (2) Nos. (both Working – 50% capacity each) Package cooling towers (induced draft FRP type) in contractor's scope and only make up water shall be provided by client at battery limit of the unit.	For Air conditioning requirement of less then 20 TR, we propose to provide air cooled packaged AC units. Please accept	Not Acceptable. Follow Tender specification.
58	TENDERDOCUMENT_PART_2 B269-999-81-41-EDB-1002 Rev 0	4.2	8 of 13	a) Fire water storage a. Storage capacity - 6 hrs storage of installed system capacity.	As per OISD-116, clause no:5.4, The effective capacity of the reservoir above the level of suction point shall be minimum 4 hours aggregate working capacity of pumps. So bidder is considering the same. Please confirm.	Not in the scope of RWTP/RODMP/CPU/ZLDP bidder

PRE-BID QUERIES (Bidder-6)

Tender No. SG/B269-475-PA-T-8701/23

S.No.	Document Reference	Clause Number/Page No.	Title	As per Clause	Query	
59	TENDERDOCUMENT_PART_2 B269-999-81-41-EDB-1002 Rev 0	4.2	8 of 13	b) Fire water pumps a. Capacity - Normal capacities 1000 m3/hr	As per OISD-116, clause no:5.2 (i), Fire water flow rate for supplementary stream, shall be based on using 4 single hydrant outlets and 1 monitor simultaneously. Capacity of each hydrant outlet as 36 m3/hr and of each monitor as 144 m3/hr may be considered at a pressure of 7 kg/cm2 g. Total pump capacity is 288 m3/hr (36*4+1*144) + 342 m3/hr (spray system) = 630 m3/hr. So bidder is considering the same. Please confirm. Bidder is considering 1 no 630 m3/hr @ 13 kg/cm2 of Main motor driven pump & 1 no 630 m3/hr @ 13 kg/cm2 of standby diesel driven pump. Please confirm.	Not in the scope of RWTP/RODMP/CPU/ZLDP bidder
60	TENDERDOCUMENT_PART_2 B269-999-81-41-EDB-1002 Rev 0	4.2	9 of 13	b) Fire water pumps h. Fire water Jockey pumps - Capacity	As per OISD-116, clause no:5.5.4, The capacity of jockey pumps shall be 3% (minimum) and 10% (maximum) of the design fire water rate and its head higher than the main fire water pumps. So bidder is considering the Jockey pump capacity and quantity as 19 m3/hr (3% of Main pump capacity) and 2 Nos (1W+1S). Please confirm.	Not in the scope of RWTP/RODMP/CPU/ZLDP bidder
61	TENDERDOCUMENT_PART_2 B269-475-17-44-SOW-5000 Rev B	1.1.1	4 of 7	Fire water hydrant / Monitor system	As per OISD-116, clause no:5.6.6 & 5.1.1, The maximum distance between two hydrants, however, shall not exceed 30 mtrs around hydrocarbon storage and hazardous areas and 45 mtrs in other areas and the location of water monitors shall not exceed 45 mtrs. from the hazard to be protected. So bidder is considering distance between two hydrants and two water monitors spacing shall be 45 mtrs. Please confirm.	Fire water header around unit including hydrants and monitors on same will be available to Package Contractor. Contractor to ensure and provide Fire Monitors including tapping and piping from main fire water line around unit for entire coverage of unit after considering fire hydrants/monitors(by others) on fire water main header around unit. At least one hydrant post shall be provided for every 30 M of external wall measurement or perimeter of unit battery limit in case of hazardous areas.
62	TENDERDOCUMENT_PART_8 6-66-0050 Rev. 2	1	4 of 18	Scope of supply: Clean Agents to be considered are 1G-541, IG-100, IG-55 and 1G-01 as per NFPA-2001.	Bidder is considering for Clean Agent gas as IG-541 @ 300 bar for Control room & Setellite rack room as per NFPA-2001, 2012 edition. Please confirm.	Bidder to follow bid requirement and NFPA-2001 latest edition is applicable. Inert gas shall be finalised during details engineering.
63	Scope of Work & Supply (UG Civil-Structural & Architectural) B269-475-81-41-SOW-8701_Rev. D Part A	943	-	Scope of Work	"....in all respect of Architectural, Structural & Civil, underground (U/G) piping works of PACKAGE-16: RWTP, RO-DM CPU & ZLDP PACKAGE for PANIPAT REFINERY EXPANSION PROJECT (P-25)" Present scope of work is limited to " Package 25 " only, Please confirm.	P25 is not package-25. P25 is the part of name of project.
64	Document No. A882-000-16-54-DB-0001	2870	-	Site Specific Spectra	Please specify any multiplying factor to be applied to the site specific horizontal acceleration spectral coefficients to obtain the design acceleration spectra for a) SMRF RC structures & b) Liquid Retaining Structures.	Bidder to comply with the codal provisions. The same can also be discussed during detailed engineering
65	Document No. A882-000-16-54-DB-0001	2875	-	Response Reduction Factor	Response Reduction factor shall be as per latest IS 1893 (part 1) for SMRF RC structures and IS 1893 (part 2) for Liquid retaining RC structures ,please clarify.	Bidder to comply with the codal provisions. The same can also be discussed during detailed engineering

PRE-BID QUERIES (Bidder-6)

Tender No. SG/B269-475-PA-T-8701/23

S.No.	Document Reference	Clause Number/Page No.	Title	As per Clause	Query	
66	Scope Drawings B269-475-81-41-14561-Rev B , B269-475-81-41-14562-Rev C & B269-999-81-41-EDB-1001_Rev. 0 PART - A	1059, 2550 & 2555	-	Finished Road Level(FRL)	We understand tha Finished Road Level(FRL) corresponds to HPP 238.72 M which is 0.400 M above FGL level (~ 238.32 M) , however per Engineering Design Basis FRL Top level mentioned for all areas except pipe ways is 0.45 m to 0.6 m above FGL , please clarify.	All Main road outside the scope Battery limit are not in the scope of bidder. Road top level of Main roads (not in bidders scope) shall be constructed as per Engineering design basis (B269-999-81-41-EDB-1001). Bidder to refer scope drawing no B269-475-81-41-14561-Rev B & B269-475-81-41-14562-Rev C for scope of approach road (bidder's scope) & Top of pavement of unit (bidder's scope).
67	Drawing No. B269-000-81-41-02507_Rev. A	2557	-	Finished Floor Level(FFL)	We understand that Finished Road Level(FRL) mentioned as 100.000 corresponds to HPP 238.72 M above MSL , Finished Floor level (FFL) shall be 500 mm above HPP/FRL ,please confirm	FFL is 500mm above nearest FRL.The MSL of FRL shall be acertainated by Bidder from Civil.
68	Drawing No. B269-000-81-41-02431_Rev. C	2559	-	Finished Floor Level(FFL)	We understand that Finished Road Level(FRL) mentioned as 100.000 corresponds to HPP 238.72 M above MSL , Finished Floor level (FFL) shall be 500 mm above HPP/FRL ,please confirm	FFL is 500mm above nearest FRL.The MSL of FRL shall be acertainated by Bidder from Civil.
69	TENDERDOCUMENT_PART_2 B269-475-16-50-SOW-8701, Rev. C, SCOPE OF SUPPLY & WORK (Electrical)	f).	13 of 15	Scope of work - Owner's feeder requirement and its associated cabling works.	In the stated clause it is mentioned as,"All feeders in respective switchboards and associated cabling for feeding Owner's supplied equipment located in substation and control room are included in Contractors scope." We presume that contractor scope is only limited to consider the owner's feeder requirement in the respective panel. However necessary cable, terminations, cable trays & its associated structural work upto the owner's load is not in the contractor scope. Kindly confirm.	Bidder to note that for each of the Owner's Loads as specified at Note-f at Page 13/14 of 15 of Scope of Supply & Work-Electrical (Doc. No. B269-475-16-50-SOW-8701), Contractor's scope of supply is limited to providing only Owner feeders in Contractor's respective switchboards/ panels. Other than these listed Owner Feeders, all other Owner supplied equipment (Free Issued Materials) located in substation and control room along with their cabling is included in Contractor's scope of supply & work.

PRE-BID QUERIES (Bidder-6)

Tender No. SG/B269-475-PA-T-8701/23

S.No.	Document Reference	Clause Number/Page No.	Title	As per Clause	Query	
70	TENDERDOCUMENT_PART_3 B269-475-16-50-SP-8701, Rev. C JOB SPECIFICATION (Electrical)	3.6.5	17 of 49	Upstream 66kV Switchboard & 6.6kV Switchboard PS class CT details at SS-100	<p>In the stated clause it is mentioned as, "Transformer + Feeder differential relay (87T+F) of same make/ model as installed in the Upstream 66kV Switchboard at SS-100 shall be free-issued to CONTRACTOR for installation and wiring in 6.6kV Switchboard incomer panels in SS-112."</p> <p>Kindly furnish us the upstream substation (SS-100) 66kV Switchboard & 6.6kV Switchboard outgoing feeder differential protection class CT details (like Knee point voltage (Vk), Rct, ratio etc.) for our consideration.</p>	<p>Bidder to note that 66/6.9 kV Power Transformer is "Deleted" from Contractor's's scope. Accordingly 66kV main power supply at SS-112 shall not be provided anymore. Bidder to kindly note that Owner/EIL shall provide 6.6kV Plant Feeders (2 Nos.) (Each rated for 100% load of the package) from Owner's 6.6kV Switchboard (located in MRSS-100) along with 6.6kV Cable, control cables, OFC cable to RODM/CPU/ZLD Substation SS-112. Termination of all cables is in the scope of Contractor for SS-112. Accordingly, "Transformer+Feeder Differential Relay (87T+F)" is not to be installed anymore. However, Feeder differential relay (87F) of same make/ model as installed in Owner's Upstream 6.6kV Switchboard at MRSS-100 shall be free-issued to CONTRACTOR for installation and wiring in Contractor's 6.6kV incomer panels. Testing and commissioning of loose supply relay is included in scope of CONTRACTOR. Optical fiber cable along with HDPE duct (Green conduit with white strip) shall be provided by others, however end termination of OFC including all accessories for receiving end shall be in the scope of Contractor.</p> <p>Bidder to further note that required details as requested here shall be provided to successful Bidder post order and during detail engineering.</p>
71	TENDERDOCUMENT_PART_2 B269-475-16-50-SOW-8701, Rev. C, SCOPE OF SUPPLY & WORK (Electrical)	f).	13 of 15	Scope of work - Owner's feeder requirement and its associated cabling works.	<p>In the stated clause it is mentioned as, "All feeders in respective switchboards and associated cabling for feeding Owner's supplied equipment located in substation and control room are included in Contractors scope."</p> <p>If cabling is in the contract scope, kindly provide us the co-ordinate of each load location (or) approx. distance from the respective SS building to each load location to consider the necessary cabling in the scope of work.</p>	<p>Refer reply at S. No. 1 above. Further, Bidder to note that as per 1st para on page 5 of 49 of Job Spec. Electrical (Doc. No. B269-475-16-50-SP-8701) attached with Tender, 230V AC UPS system shall be provided by Contractor for Control supply of VFD, Heater Control thyristor panels, LAN system, ECS system etc. This UPS shall be located in a separate room/partition in switchgear hall of substation. Also any non-UPS power supply for the Owner's equipment shall be in the scope of Contractor. Also, Owner's supplied equipments such as FA, PA, ECS, other such free issued equipments cabling is in Contractor's scope of work & supply. Bidder to follow some of the available documents in tender such as scope drawings(Civil, Piping), Substation & Control Room Drawings, to carry the approx. estimations for cabling.</p>

PRE-BID QUERIES (Bidder-6)

Tender No. SG/B269-475-PA-T-8701/23

S.No.	Document Reference	Clause Number/Page No.	Title	As per Clause	Query	
72	TENDERDOCUMENT_PART_3 B269-475-16-50-SP-8701, Rev. C JOB SPECIFICATION (Electrical)	2.3.6	8 of 49	Cable derating factor	In the stated clause it is mentioned as,"CONTRACTOR to consider maximum cable de-rating factor of 0.5 for sizing of cables on ground rating at 30 degree specified in cable catalogue. This shall be considered for all underground cables." We presume that, cable derating factor shall not be considered as 0.5 for all underground cables. Same shall be considered as per the design requirement. Kindly confirm.	Bidder to note that total derating factor for cable shall be as per design requirement. However, if the calculated value is greater than 0.5, then Contractor to follow derating factor as 0.5 and if the calculated value is below 0.5, then Contractor shall follow the value which is below 0.5, for sizing of cables in Under Ground.
73	TENDERDOCUMENT_PART_2 B269-475-16-50-SOW-8701 Rev. C SCOPE OF SUPPLY & WORK (Electrical)	4.7	15 of 15	SVL box requirement for 66kV cable	In the stated clause it is mentioned as,"Supply and laying of 66kV Power cables and associated Control Cables from Owner's 66 kV switchboard to Contractor's 66/6.9kV Power transformers for normal power supply located in SS-112 for RODM/ZLD/CPU." We presume that necessary SVL(Sheath Voltage Limiter) box required for the 66kV cable also not in the contractor's scope. Kindly confirm.	Refer reply at S. No. 2 above. Accordingly, 66KV cable & accessories are not in Contractor's scope.
74	TENDERDOCUMENT_PART_8 6-51-0099 Rev. 7 DESIGN PHILOSOPHY FOR ELECTRICAL FACILITIES	5.10.1	18 of 32	HV Capacitor banks	In the stated clause it is mentioned as,"The capacitor banks shall be supplied with series reactor and RVT (residual voltage transformer). All the capacitor bank equipment except APFC panel shall be suitable for outdoor location unless otherwise specified." Where as in the TENDERDOCUMENT_PART_3, B269-475-16-50-SP-8701, Rev.C, pg no.13 of 49, under clause no. 3.3.2, it is mentioned as, "Capacitor banks along with APFCR shall be indoor panel mounted type, installed in switchgear hall. Dry type series reactor, RVT installed inside panel shall be provided with the capacitor banks." We presume that HV APFC System shall be with Indoor panel mounted Capacitor bank, Dry type reactor, RVT etc., inside the Switchgear Building. Kindly confirm.	Bidder to follow Job Spec. Electrical B269-475-16-50-SP-8701, Rev.C which is job specific attached with the Tender.
75	TENDERDOCUMENT_PART_2 B269-999-16-50-EDB-1001, Rev No. 0 Engineering Design Basis (Electrical)	5.6.16, Notes point no. 4)	38 of 49	Control cable shielded requirement	In the stated clause it is mentioned as,"Control cable shall be of multistranded conductor, twisted pair overall shielded, XLPE insulated type." Where as in the TENDERDOCUMENT_PART_5, B269-999-16-50-DS-0426, Rev.D, pg no.2 of 2, under EIL notes, point no. 1 of COMMUNICATION & FIRE ALARM CABLE DATASHEET, it is mentioned as, "Control cable shall be of Multistranded conductor, twisted pair individual & overall shielded, XLPE insulated type". Kindly clarify the requirement of control cable.	Bidder to note that the Control cable shall be of Multistranded conductor, twisted pair individual & overall shielded, XLPE insulated type. Kindly ignore any other control cable types mentioned anywhere in the Tender documents.
76	TENDERDOCUMENT_PART_6 6556-EPCC-6-P094-D0001-001, Rev No. 8 Equipment Layout of RO based DM & CPU	-	-	Electrical scope of work for the CPU loads in PNCP Complex area.	From the stated layout we observed that various pump/motor loads are marked in the different locations of the PNCP complex area. We presume that power supply & other associated electrical works for the same is not in the contractor scope of work. Our scope of supply is limited to the pump/motors only. Kindly confirm.	Bidder to note that only Feeders for Contractor's supplied equipments shall be provided by Owner in the nearest Substation-10 (in the PNCP Area). Complete power supply & other associated electrical works for feeding CPU package loads in PNCP complex shall be Contractor's scope of supply & work.

Name of Work : RWTP, RO-DMP, CPU & ZLD Plant for Panipat Refinery Expansion Project (P25) of M/s Indian Oil Corporation Limited (IOCL), India
Bidding Document: SG/B269-475-PA-T-8701/23

PRE-BID QUERIES (bidder-1)

SL. No.	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
	PART/VOL.	PAGE NO.	CLAUSE NO.	SUBJECT		
1	-	-	-	-	<p>The type of recirculation pump to be used for MEE system is not mentioned.</p> <p>As per our experience, axial flow type of recirculation pumps is used in MEE system.</p> <p>Hence, kindly confirm that axial flow pumps can be used for recirculation in MEE system.</p>	<p>Contractor to supply the proven pump for the offered service. The same may be considered subject to meeting the qualification requirements of the proposed type of pump in similar service and operating conditions.</p>

PRE-BID QUERIES (bidder-2)

	General		Availability of Continuous Power supply		<p>We request to confirm the availability of continuous Power supply. In case if you envisage any power breakdown or black out, request customer to confirm the max Power blackout duration to plan any Emergency power requirement for the equipment.</p>	<p>No requirement of emergency power for process units is envisaged.</p> <p>Bidder to note that Emergency Power shall be made available from OWNER's 6.6kV</p>
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SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
						EMERGENCY SWITCHBOARD (backed by Emergency DG Set). Kindly refer Key Single Line Diagrams (B269-475-16-50-0001 & B269-475-16-50-0011) attached with Tender.
	B269-081-02-DS-1401	Page 2329 of 7166	HEAT EXCHANGER PROCESS DATA SHEET CPU (PNCP AREA)		<p>Kindly check and reconfirm the parameter(flow rate and temperature) of Feed/Polished condensate Heat exchanger and cooling water flow for Trim cooler for NEW CPU-PNCP Area.</p> <p>In normal case:- Primary side(Suspect Condensate) temperature mentioned 90° C at the inlet and 50° C at the outlet side. Secondary side(Polished condensate) inlet temperature mentioned 61.6° C at inlet and 93.6° C at outlet side. It is not possible to achieve 50° C at the outlet of primary side when we cool it by 61.6° C(inlet temperature of secondary side) and parallely it is not possible to achieve 93.6° C outlet at secondary side by heating it by 90° C (inlet temperature of primary side).</p> <p>Temperature achievable at the outlet of Primary Side(Suspect Condensate temp.) is always greater than of the inlet temperature of secondary side(61.6° C) and temperature achievable at the outlet of secondary side is always less than the inlet temperature of primary side(90° C). Please clarify.</p> <p>As per process requirement we have to bring down the temperature of the suspect condensate to 40° C at the outlet of trim cooler(heat exchanger). To meet the same we need to increase the quantity of cooling water in the trim cooler to keep Δt of cooling water unchanged. Please clarify the same.</p>	Revised exchanger data sheet shall be provided along with amendment.

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					The same is applicable for the condition of "Check Case" of Heat exchanger of the NEW CPU-PNCP Area.	
	B269-475-16-43-SOW-8701 Rev. D	Page 962 of 7166	VMS	Bidder shall procure materials from EIL approved vendors as per the requirements of Piping Material Specification (PMS), Valve Material Specification (VMS), Piping design basis and PMS General notes.	VMS is not available in tender. Please provide the same.	Piping material specification and corresponding valve material specification which are generally applicable for P-25 complex shall be shared with successful bidder. For Piping material specification and valve material specification which are exclusive to the subject package as per approved P&IDs of package vendor, shall be developed by the package vendor and submitted for approval along with all required back-up calculations meeting the requirements of ASME B31.3.
	B269-475-17-44-DB-1001	pg 5-8/ 2.1.2.1-2.1.2.4			Complete feed analysis of missing parameters or the TDS break up to be provided for all inlet streams as TH,Ca,K,NO3,SO4,CL, NH4 etc as these will effect the ZLD design.	Please follow tender. The ionic breakup is not available, quality of RODM can be considered based on Cooling Tower blow

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						down and treated raw water quality.
	PFD OF RO DM ZLD & P&ID of ZLD				There is ambiguity as in PFD it specified LP steam whereas as in PID as well as in datasheet it is mentioned MP steam. Kindly clarify as in what is to be considered for design of ZLD here.	MP steam shall be used in ZLDP
	B269-475-17-44-DB-1001	pg 6 2.1.2.3			In the ETP treated water analysis, the NH3-N has been mentioned as 15 ppm which is very high. All this high NH3, after passing through the scheme, will end up in ZLD distillate and hence it shall be not possible to guarantee TDS of 100 ppm as distillate quality. As per biological treated effluent, the NH3 values should be 1-2 ppm . Client is requested to recheck the same and confirm the analysis.	Please follow tender
	General				Please confirm location of MCC and PLC location for the CPU-PNCP AREA. Please mark location on the layout for better clarity.	Please follow tender
	General				Since CPU PNCP plant is already operational and hence can we use already laid electronic earthing for new CPU-PNCP plant.	Earthing in CPU package in PNCP shall be Contractor's scope of supply & work. Electronic earthing shall be done based on Instrumentation & control requirements and OEM's recommendation. Further, availability of existing electronic earthing (if any) at CPU-PNCP can be checked by Contractor during detail engineering.

PRE-BID QUERIES (bidder-3)

SL. No	REFERENCE OF ENQUIRY DOCUMENT				BIDDER'S QUERY	EIL/IOCL REPLY
	TENDERDOCUMENT_PART_2	Section 2.1.2.3/ 984 of 7166	Treated ETP Effluent	Parameters Ammonia & TKN vales are mentioned ≤ 15 ppm for Ammonia & ≤ 40 ppm for TKN respectively.	<p>"Its is observed very less Ammonia and or TKN in aerobic treated effluent. Typical it will be in the range of 1 to 2 ppm as TKN. Most of Organic Nitrogen and Ammonia converts in to Nitrate in Aerobic Process. And finally in anoxic process Nitrate converts in to Nitrogen gas. We believe that the treated ETP effluent is also passing through the series of such anoxic and aerobic biological process.</p> <p>Kindly note that the given Ammonia and TKN values will change the design of the downstream system and also will change the cleaning frequency of the membrane filtration system.</p> <p>To design appropriate treatment system, request to customer to provide the precised values of parameters of Treated ETP Effluent. "</p>	Please follow tender.