PROJECT : STEAM GENERATION PLANT AT TALCHER, ODISHA
TENDER NO. : PNMM/PC-150/E-4003/NCB
SUBJECT : REPLY TO PRE-BID QUERIES : LOT 14 Dated 12.04.2021

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<tr><th rowspan="2">Sl. No.</th><th colspan="4">Reference of Tender Document</th><th rowspan="2">Bidder's Query</th><th rowspan="2">PDIL/TFL's Reply</th></tr>
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<tr><td></td><td>Tech Amendment-XV-08.02.2021</td><td>7, 8 of 61</td><td>Sl. No. 12. & 13.</td><td>Saturated Reheat Steam Pressure Amendment
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<tr><td>4.1</td><td colspan="3">H.P Steam</td></tr>
<tr><td></td><td></td><td>Normal</td><td>Design</td></tr>
<tr><td></td><td>Pressure, kg/cm^{2}g (Min/ Nor/ Max)</td><td>107/ 110/ 112</td><td>130</td></tr>
<tr><td></td><td>Temperature, °C (Min/ Nor/ Max)</td><td>515/520/525</td><td>Not less than 540</td></tr>
<tr><td></td><td>Silica as SiO_2, PPM</td><td colspan="2">< 0.02</td></tr>
<tr><td></td><td>pH</td><td colspan="2">9-9.5</td></tr>
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To be read as.....
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<tr><td>4.1</td><td colspan="3">H.P Steam</td></tr>
<tr><td></td><td></td><td>Value</td><td>Design</td></tr>
<tr><td></td><td>Pressure, kg/cm^{2}g (Min/ Nor/ Max)</td><td>107/ 112/ 115</td><td>130/FV</td></tr>
<tr><td></td><td>Temperature, °C (Min/ Nor/ Max)</td><td>515/520/525</td><td>Not less than 540</td></tr>
<tr><td></td><td>Silica as SiO_2, mg/l</td><td colspan="2">< 0.02</td></tr>
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</table>
Clause no. 4.2
<table>
<tr><td colspan="3">Saturated H.P Steam for Superheating UNDER LSTK CONTRACTOR'S SCOPE</td></tr>
<tr><td></td><td>Normal</td><td>Design</td></tr>
<tr><td>Pressure, kg/cm^{2}g (Min/ Nor/ Max)</td><td>118/120/123</td><td></td></tr>
<tr><td>Temperature, °C (Min/ Nor/ Max)</td><td>322/323/325</td><td></td></tr>
</table>
To be read as.....
Clause no. 3.12 i.e. "Superheating of Saturated H.P Steam from Ammonia Urea Plant shall be UNDER LSTK CONTRACTOR'S SCOPE"
<table>
<tr><td colspan="3">Inlet parameters of Saturated H.P Steam from Ammonia Urea Plant</td></tr>
<tr><td></td><td>Parameter at SGP B.L.</td><td>Design</td></tr>
<tr><td>Pressure, kg/cm^{2}g (Min/ Nor/ Max)</td><td>115/117/120</td><td>133.9 / FV</td></tr>
<tr><td>Temperature, °C (Min/ Nor/ Max)</td><td>319/321/323</td><td>342</td></tr>
</table></td><td>The steam outlet pressure at the terminal point is amended from earlier 110 kg/cm2(g) to 112 kg/cm2(g) along with reduction in the reheat steam inlet pressure to 117kg/cm2(g). This condition is not possible to be met since the minimum pressure drop across the superheater coils (to maintain the max flux requirements for load variations) & the related piping (inclusive of flow measuring instruments valves& fittings) has to be maintained. We request at least 118kg/cm2(g) at the sat. reheat steam pressure at our terminal point with the main steam pressure as 100kg/cm2(g) as per original tender clause to meet the boiler design requirement.</td><td>Bidder to consider the following conditions at SGP B.L.:-

HP steam:-
Pressure, kg/cm2g (Min/ Nor/ Max/ Design) = 107/ 110.5/ 113 / "130/FV"
Temperature, °C (Min/ Nor/ Max/ Design) = 515/520/525/ "Not less than 540"

HP saturated steam:-
Pressure, kg/cm2g (Min/ Nor/ Max/ Design) = 116/118.5/121/ "133.9 /FV"
Temperature, °C (Min/ Nor/ Max/ Design) = 319/321/323 /342

Amendment XXI issued.

Above shall also be applicable for relevant clause of Section-VI-8.0.</td></tr>
<tr><td>1.</td><td>Pre bid reply lot-3-17/07/2020</td><td>4 of 68</td><td>Sl. No. 21</td><td>Deaerator Capacity:
As per discussion, the deaerator shall be designed for 3 of the boilers with the storage tank sized for two boilers for 30minutes storage from NWL to LLWL.</td><td>The is currently to be sized for 30 minutes from NWL to LLWL for 2 boilers. Which is 15 minutes per boiler. We request to reconsider the same as 10 minutes per boiler that is total 20 minutes for 2 boilers. The length & size of the storage tank will be too large if 30minutes clause is considered consuming huge of space/ foot print which is not required of the scenario. Kindly look in the same so that we don't over size the deaerator since in other plant sizing the deaerator for 10minute is a common proven practice.</td><td>As per NIT.</td></tr>
<tr><td>2.</td><td>PC150/E/4003/ SecVI-10.0</td><td>5 of 34</td><td>2.4</td><td>Spare List
Centrifugal Fan (FD / ID Fan)
The mandatory spares to be supplied for each working train /unit shall be as under. No spares considered for standby unit</td><td>Originally as per tender, earlier the boiler fans were of 2 x 100%, but now that its 2 x 60% configuration, which will double the price of the fan spares. The same being API fans, the cost is on a higher end & we request you to consider one spare (as per tender spare list) per type of fan (PA/SA/ID) per boiler.</td><td>Bidder to comply Spares Philosophy as per NIT.</td></tr>
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Sl. No.	Reference of Tender Document				Bidder's Query	PDIL/TFL's Reply
	Section No.	Page No.	Clause No.	Subject		
3.	Section VI : 4.0 Process Design basis	11 of 13 320 of 2464	3.20	The ground level concentration of the following in the atmospheric air of Plant area shall not exceed the limits given below:	Bidder is responsible only for Stack emissions as per CPCB norms for PM.SOx,NOx,Hg. The GLC shall depend on many factors beyond scope and boundary of SGP which shall involve other polluting sources and its elevation of emission ,wind flow patterns, local precipitation and other buildings/structures etc., The same need to be arrived analytically through computational studies by End customer/Consultant and hence the same cannot be part of guarantee by LSTK contractor.	As per NIT.
4.	Amendment XV	Page 2 of 61	Sr. No.5	However, Bidder shall have to consider maximum 43.5% ash content in ROM Coal as design basis for SGP.	Bidder understands that the basis of design of the ash handling system - which is a part of the SGP can be designed considering max. of 43.5% ash content in coal. Required margins - as mentioned in the NIT shall be considered on the same. Request confirmation.	Confirmed.
5.	Amendment XV	Page 13 of 61	Sr. No.28	Since Boiler configuration is 2W+1S to meet the HP steam requirement of Complex, complete system shall be designed in such a way that online changeover (as and when required) from any one of working Boiler (s) to Standby Boiler shall be feasible without sacrificing the net export quality (as per sr. no.-1 of above table) & quantity of steam at any point of time.. The load of running boilers will not be ramped down until 3rd boiler is able to produce the HP steam of desired parameters and is ready to put in line to take the load. The load of any running boiler (to be taken out from the operation) shall be gradually ramped down with proportional ramp-up of 3rd boiler without sacrificing the net export quality & quantity. All associated facility i.e. equipment (s), instrument (s), electrical system, piping and any other required item shall be designed suitably for safe & trouble free operation to fulfill the above mentioned requirement.	Kindly clarify that during the changeover situation the electric BFP shall be in operation in parallel with the steam driven pumps. Also note that all the 3 boiler auxiliaries shall be in operation during the short period of time before the non running boiler is taken into service and the running boiler is pulled out of service. During this period can the total electrical power exceed 8MW?	Please refer Sr. no. 5 of Amendment -- XVIII dated 09.03.2021.
6.	Amendment XV	Page 15 of 61	Sr. No.33	Blow down water (after achieving sufficient heat recovery) shall be discharged after cooling down to 500C by heat exchanger. Bidder to provide the necessary arrangement to indirect cooling of Blow-down water before discharge. DM water shall be used as cooling media. Blow-down storage TANK with suitable pumping facilities of 5 kg/cm2g (1W+1S) shall be in bidder's scope	Noted. Blow down water shall be cooled using DM water as cooling media in a heat exchanger. Bidder understands that the DM water shall be used as make up water to deaerator. Kindly confirm if the understanding is correct. Kindly confirm if the blow - down storage tank shall be above ground or underground storage pit.	Bidder understanding is correct. Blow down tank elevation shall be as per Bidder's design.

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7.	Amendment XV	Page 27 of 61	Sr. No.52	Steam Drum shall be designed with minimum 2 minutes of capacity of storage between normal water level (NWL) and Low-Low trip level. Sufficient residence time shall be provided in steam drum between Low-Low trip and drum bottom so that steam generating coils never run dry even in upset conditions/ scenarios	Minimum storage time of 1 min is sufficient between Normal level and permitted low low level for a CFBC boiler, as the water wall panels and roof panels are filled with water already in the event of a trip. Designing the steam drum for 2 minutes of storage will result in unnecessary oversizing of the steam drum. Request you to review the same.	As per Amendment-XV dated 08.02.2021.
8.	Amendment XXI	Page 3 of 3	Sr.. No. 2	Temperature of the superheating of saturated steam from ammonia plant is mentioned as 319 / 321 / 323 for pressure of 116 / 118.5 / 121.	The temperature of the saturated steam provided at the terminal point is not matching with the specified pressure. Request you to check and confirm.	Please note that available temperature shall be as per saturation pressure.