



## UCH COMPRESSION PROJECT



Design Engineering, Procurement (Supply), Construction, Installation/Erection, Pre-Commissioning, Commissioning & Start-up (including performance testing and Reliability Guarantee Test) of Compression System at UCH Compression Project  
Tender Enquiry No. PROC-FC/CB/PROJ/UCH(COM)-4462/2019

### PRE-BID CLARIFICATION # 28

Item No.	Tender Document Reference	Query	Response
1	<u>0221-GS-9510</u> <u>SPECIFICATION FOR TURBO-COMPRESSOR UNITS</u> <u>Clause # 8.6</u>  STARTING SYSTEM	As required by this clause, the Supplier shall be responsible of providing complete electrical start system for the Gas Turbine. Bidder would like to further clarify about the electrical start system, whether it is requiring a direct motor driven starting method or it can be a traditional hydraulic starter which comprise hydrostatic pump and electric motor.	Bidder to adhere the Electric start system comprising of direct AC starter motor for the turbine startup, further details shall be determined/finalized during detail engineering. It is the responsibility of EPCC contractor to ensure that all the electrical equipment .i.e. transformer. Switchgear/MCC, shall be enough and be suffice to meet the peak electrical demand of the project in addition to spare capacity (20%) for future loads enshrined in project/tender documents, however, minimum rating of equipment as mentioned/illustrated on to project single line diagram/project specification shall remain same.
2	<u>0221-GS-9510</u> <u>SPECIFICATION FOR TURBO-COMPRESSOR UNITS</u> <u>Clause # 3.1.4.2</u>  Lube oil air cooled exchanger	As mentioned in this clause , 2X50% Lube oil air cooled exchanger is required. Bidder would like to further clarify about the quantity of air-cooler, if it is requiring two sets of air-cooler for each turbo-compressor unit. Bidder suggest that one air-cooler with spare fan(3x50%) would be sufficient for each unit.	Not acceptable. Bidder to adhere with the requirements as mentioned in tender document.



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3	<p><u>0221-LS-9335-0</u> (Line List)</p> <p>The Design Temperature (200 °F) and Design Pressure (1350psig) not matching with the design parameters in PIDs and DC piping spec.</p>	<p style="text-align: center;">°F</p> <p>As per the process line list, the design pressure / temperature used for DC piping spec is 1350Psig / 200 . Bidder found that some issues as below:</p> <p>1. The design pressure / temperature of 1350Psig / 200 is not match with the design parameters in PIDs. For example, the design pressure for SLUG CATCHER on page 49 of UCH Compression Project P&amp;IDs) is 1050Psig.</p> <p>2. As per the DC piping spec (Class 600), the flange material is A182 F304L, the pressure-temperature ratings are shown below snapshot as per ASME B16.5 Table II-2-2.3. The design pressure / temperature of 1350Psig / 200 is also beyond the material (F304L) pressure-temperature ratings.</p> <p>According to the above issues, the design pressure / temperature used for DC piping spec which shown in line list is not matching with the design parameters in PIDs and DC piping spec. Bidder consider that the design pressure / temperature should be based on PIDs. Please kindly check and confirm if the consideration is correct.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p style="text-align: center; font-size: small;">Table II-2-2.3 Pressure-Temperature Ratings for Group 2.3 Materials</p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <thead> <tr> <th>Nominal Designation</th> <th>Forgings</th> <th>Castings</th> <th>Plates</th> </tr> </thead> <tbody> <tr> <td>18Cr-8Ni</td> <td>A182 Gr. F304L (1)</td> <td>...</td> <td>A240 Gr. 304L (1)</td> </tr> <tr> <td>16Cr-12Ni-2Mo</td> <td>A182 Gr. F316L</td> <td>...</td> <td>A240 Gr. 316L</td> </tr> <tr> <td>18Cr-13Ni-3Mo</td> <td>A182 Gr. F317L</td> <td>...</td> <td>...</td> </tr> </tbody> </table>   <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <thead> <tr> <th rowspan="2">Temp., °F</th> <th colspan="7">Working Pressures by Classes, psig</th> </tr> <tr> <th colspan="7">Class</th> </tr> <tr> <th></th> <th>150</th> <th>300</th> <th>400</th> <th>600</th> <th>900</th> <th>1500</th> <th>2500</th> </tr> </thead> <tbody> <tr> <td>-20 to 100</td> <td>230</td> <td>600</td> <td>800</td> <td>1,200</td> <td>1,800</td> <td>3,000</td> <td>5,000</td> </tr> <tr> <td>200</td> <td>195</td> <td>510</td> <td>680</td> <td>1,020</td> <td>1,535</td> <td>2,555</td> <td>4,260</td> </tr> <tr> <td>300</td> <td>175</td> <td>455</td> <td>610</td> <td>910</td> <td>1,370</td> <td>2,280</td> <td>3,800</td> </tr> <tr> <td>400</td> <td>160</td> <td>420</td> <td>560</td> <td>840</td> <td>1,260</td> <td>2,100</td> <td>3,500</td> </tr> <tr> <td>500</td> <td>150</td> <td>395</td> <td>525</td> <td>785</td> <td>1,180</td> <td>1,970</td> <td>3,280</td> </tr> <tr> <td>600</td> <td>140</td> <td>370</td> <td>495</td> <td>745</td> <td>1,115</td> <td>1,860</td> <td>3,100</td> </tr> <tr> <td>650</td> <td>125</td> <td>365</td> <td>485</td> <td>730</td> <td>1,095</td> <td>1,825</td> <td>3,040</td> </tr> <tr> <td>700</td> <td>110</td> <td>360</td> <td>480</td> <td>720</td> <td>1,080</td> <td>1,800</td> <td>3,000</td> </tr> <tr> <td>750</td> <td>95</td> <td>355</td> <td>470</td> <td>705</td> <td>1,060</td> <td>1,765</td> <td>2,940</td> </tr> <tr> <td>800</td> <td>80</td> <td>345</td> <td>460</td> <td>690</td> <td>1,035</td> <td>1,730</td> <td>2,880</td> </tr> <tr> <td>850</td> <td>65</td> <td>340</td> <td>450</td> <td>675</td> <td>1,015</td> <td>1,690</td> <td>2,820</td> </tr> </tbody> </table> <p style="font-size: x-small; margin-top: 5px;">NOTE: (1) Not to be used over 800°F.</p> </div>	Nominal Designation	Forgings	Castings	Plates	18Cr-8Ni	A182 Gr. F304L (1)	...	A240 Gr. 304L (1)	16Cr-12Ni-2Mo	A182 Gr. F316L	...	A240 Gr. 316L	18Cr-13Ni-3Mo	A182 Gr. F317L	...	...	Temp., °F	Working Pressures by Classes, psig							Class								150	300	400	600	900	1500	2500	-20 to 100	230	600	800	1,200	1,800	3,000	5,000	200	195	510	680	1,020	1,535	2,555	4,260	300	175	455	610	910	1,370	2,280	3,800	400	160	420	560	840	1,260	2,100	3,500	500	150	395	525	785	1,180	1,970	3,280	600	140	370	495	745	1,115	1,860	3,100	650	125	365	485	730	1,095	1,825	3,040	700	110	360	480	720	1,080	1,800	3,000	750	95	355	470	705	1,060	1,765	2,940	800	80	345	460	690	1,035	1,730	2,880	850	65	340	450	675	1,015	1,690	2,820	<p>1- Bidder to follow Line List Doc. No. 0221-LS-9335-0 since design parameters of relevant piping network is mentioned in Line List whereas design parameter of Slug Catcher is mentioned in P&amp;ID.</p> <p>2- Bidder to refer <b>DC1</b> piping spec where flange material is <u>A-182 F316L</u> and same to be followed.</p> <p>Furthermore, bidder to refer Line List Doc. No. 0221-LS-9335-0 since design parameters of relevant piping network is mentioned in Line List whereas design parameter of Slug Catcher is mentioned in P&amp;ID.</p>
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