



# UCH COMPRESSION PROJECT



## Design Engineering, Procurement (Supply), Construction, Installation/Erection, Pre-Commissioning, Commissioning & Start-up (including performance testing and Reliability Guarantee Test) of UCH Front End Compression Project

Tender Enquiry No. PROC-FC/CB/PROJ/UCH (COM)-5155/2021

### Pre-Bid Clarification-14

Sr. No.	Tender Document Reference	Description	OGDCL/ ENAR Response (04-Jan-2022)
1	<b>0221-B-1511-1 (HMBs)</b>	Please share HYSYS software native/soft files for review & evaluation.	All FEED level operating conditions, studies, calculations, datasheets & etc. are provided in tender documents, bidder has to developed it own UCH-I & UCH-II plants' calculations and HMBs, based on proposed compressor trains. Furthermore, as per Scope of work, bidder has to provide the Vetting and Endorsement of FEED Documents which include HMBs, studies, calculations, etc. to confirm and verify the process design and equipment rating/sizing basis.
2	<b>Process Simulation Models</b>	No dismantling P&IDs are available in FEED documents and only relocation P&ID for diesel system is available. Please share dismantling P&IDs for UCH-I and UCH-II for scope determination.	Scope is clearly mentioned in Tender related documents such as, Basis of Design, P&IDs, scope of Work & etc. therefore, Bidder is asked to provide the specific details i.e, which section dismantling P&IDs is missing, with proper references.
3	<b>P&amp;IDs (UCH Compression Project)</b>	Datasheet for Instrument Dry Air Receiver 251-V-203 and Nitrogen Receiver 251-V-204 are not available in FEED documents, please provide.	Bidder to refer P&ID # 0221-PB-2105 sheet 1 & 2 of 3 and 0221-DS-1706-1 (Datasheet of Instrument Air and Nitrogen Generation Package), shows that Instrument Dry Air Receiver 251-V-203 and Nitrogen Receiver 251-V-204 are within packager scope of supply. Therefore, development of these equipment datasheets are in bidder/vendor scope.
4	<b>Scope of Work Section 14.2</b>	It is specified that EPCC Contractor will at all times behave towards the community in the area of the Site in accordance with the Community Relations and Code of Behavior. Please share the document & details specifying the Community Relations and Code of Behavior requirements.	All local rules/regulations/any other document (if applicable) is the responsibility of bidder to acquire and make himself conversant with the same.
5	<b>Blowdown Study Report / 0221-A-1001-2 (Basis of Design)</b>	Please share HYSYS depressurization utility software native/soft files for review & evaluation of emergency blowdown loads of UCH-I and UCH-II slug catchers.	All FEED level operating conditions, studies, calculations, datasheets & etc. are provided in tender documents, but bidder has to develop its own calculations and files for flare & Blowdown study. Furthermore, as per Scope of work, bidder has to perform existing Flare Headers system adequacy study (including but not limited: Rating/ Sizing, Vent/Flare Heat Radiation and Dispersion Considerations as well as Liquid Dropout Potential) with respect to its old, new and revised loads (calculated by bidder during detailed engineering) and provide solutions in case of any bottleneck found. Please refer SoW.
6	<b>Blowdown Study Report / 0221-A-1001-2 (Basis of Design)</b>	Please share software native files of Aspen Flare System Analyzer (Flarenet) for evaluation of overall relief & blow down flare system. Further, advise new FEC area is to be considered as a separate fire zone with time delay during automatic blow down (fire case) to remain within existing plant header capacity. Please confirm no modifications in existing flare network & flare KO drum are required as no detailed working is available in FEED documents. Please provide adequacy results & working done for existing flare system at FEED stage.	All FEED level operating conditions, studies, calculations, datasheets & etc. are provided in tender documents, but bidder has to developed it own calculations and files for flare & Blowdown study. Furthermore, as per Scope of work, bidder has to performed existing Flare Headers system adequacy study (including but not limited: Rating/ Sizing, Vent/Flare Heat Radiation and Dispersion Considerations as well as Liquid Dropout Potential) with respect to its old, new and revised loads (calculated by bidder during detailed engineering) and provide solutions in case of any bottleneck found. Please refer SoW.



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7	<b>Blowdown Study Report / 0221-A-1001-2 (Basis of Design)</b>	Please confirm individual compressor in new FEC area is to be considered as a separate fire zone with time delay during automatic blow down (fire case).	Individual Compressor shall be part of new FEC Compression area to be installed at existing Plant site, accordingly philosophy shall be finalized by the EPC Contractor during detail engineering stage for safe, continuous and trouble free operation of Compressors and plant and submit to OGDCL/Engineering Consultant for review/approval.
8	<b>Blowdown Study Report / 0221-A-1001-2 (Basis of Design)</b>	Common blocked discharge flow case of 486.4 MMSCFD for new FEC area cannot be handled by existing flare systems of UCH-I and UCH-II. Please advise that this scenario is not required to be considered as this scenario has been eliminated in design by considering 2oo3 pressure voting transmitters (251-PT-021/022/023) at common discharge header of new FEC.	As per Scope of work, bidder has to performed existing Flare Headers system adequacy study (including but not limited: Rating/ Sizing, Vent/Flare Heat Radiation and Dispersion Considerations as well as Liquid Dropout Potential) with respect to its old, new and revised loads (calculated by bidder during detailed engineering) and provide solutions in case of any bottleneck found. Adequacy study shall be submitted to OGDCL/Engineering Consultant for review/approval.
9	<b>Blowdown Study Report / 0221-A-1001-2 (Basis of Design)</b>	Please share the governing scenario results for individual compressor blocked discharge flow case of 243.2 MMSCFD for new FEC area and advise this can be handled by existing flare systems of UCH-I and UCH-II. Please share software native files of Aspen Flare System Analyzer (Flarenet) for evaluation of overall relief & blow down flare system.	All FEED level operating conditions, studies, calculations, datasheets & etc. are provided in tender documents, bidder has to developed it own calculations and files for flare & Blowdown study. Furthermore, as per Scope of work, bidder has to performed existing Flare Headers system adequacy study (including but not limited: Rating/ Sizing, Vent/Flare Heat Radiation and Dispersion Considerations as well as Liquid Dropout Potential) with respect to its old, new and revised loads (calculated by bidder during detailed engineering) and provide solutions in case of any bottleneck found. All studies shall be submitted to OGDCL/Engineering Consultant for review/approval.
10	<b>Blowdown Study Report / 0221-A-1001-2 (Basis of Design)</b>	Bidder understands that no modifications in existing flare networks, flare KO drums and flare stacks/tips are required.	As per Scope of work, bidder has to performed existing Flare Headers system adequacy study (including but not limited: Rating/ Sizing, Vent/Flare Heat Radiation and Dispersion Considerations as well as Liquid Dropout Potential) with respect to its old, new and revised loads (calculated by bidder during detailed engineering) and provide solutions in case of any bottleneck found. Please refer SoW.
11	<b>Scope of Work Section 1.1.11</b>	The Annual Turnaround (ATA) of UCH-I and UCH-II happens on which month every year for this facility and for how many days.	This information shall be shared with successful bidder, after award of contract by OGDCL as month is varying and ATA time also between 4-10 days.
12	<b>Scope of Work Section 1.1.2</b>	It is mentioned that approvals from Consultant/OGDCL for all engineering, material, equipment & consumables. Bidder understands that only major engineering deliverables (basic engineering) and critical equipment (turbo compressor) will require approval from Client and not each & every item of project.	Bidder understanding is not correct. Bidder to adhere with tender requirements specifically as mentioned in SEC-III (scope of work) in this regard.



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13	Scope of Work Section 1.1.2	It is mentioned that supply of OEM recommended consumables & spare parts for one (01) year operation are required to be supplied by bidder. Bidder understands that OEM mentioned here is for front end compressor OEM only and no other package or equipment consumables & spare parts for one (01) year operation are required to be supplied by bidder. Please confirm.	Bidder understanding is not correct. Bidder shall be responsible for the supply of recommended consumables, initial fills, spares, tools etc. which are required for the successful commissioning and start-up of the complete project as mentioned in tender documents.
14	Scope of Work Section 1.1.2	It is specified that item-wised price list of OEM recommended consumables & spare parts supply for two (02) years operation as optional price to be quoted by bidder. Bidder understands that OEM mentioned here is for front end compressor OEM only and no other package or equipment consumables & spare parts for two (02) year operation are required to be quoted by bidder. Please confirm.	Bidder understanding is not correct. Bidder shall be responsible for the supply of recommended consumables, initial fills, spares, tools etc. which are required for the successful commissioning and start-up of the complete project as mentioned in tender documents.



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15	<b>FEED Documents</b>	Client to confirm that all existing plant & FEED documents native software files will be provided to successful bidder at start of project.	Project relevant FEED documents to be shared (as possible upto max. extent) with the successful bidder.
16	<b>Scope of Work Section 15.5</b>	Under Safety deliverables, it is listed that Vent/Flare Heat Radiation and Dispersion Considerations as well as Liquid Dropout Potential. Bidder understands that composition and flow rate is within the design limits of existing facility flare system, hence this is not required to be studied.	As per Scope of work, bidder has to performed existing Flare Headers system adequacy study (including but not limited: Rating/ Sizing, Vent/Flare Heat Radiation and Dispersion Considerations as well as Liquid Dropout Potential) with respect to its old, new and revised loads (calculated by bidder during detailed engineering) and provide solutions in case of any bottleneck found.
17	<b>Scope of Work Section 1.1.2</b>	It is mentioned that EPCC Contractor shall evaluate and check the hydrate formation in the existing UCH-I and UCH-II Plants' associated system along with New FEC system. In case of hydrate occurrence, EPCC Contractor to provide proven solution (Such as, Heating) without extra charge to OGDCL. Please share the simulation study results done at FEED stage to ascertain whether hydrate formation is being predicted at UCH-I and UCH-II plants after Ethylene Glycol injection at all wellhead and flow lines. Please also share the Hysys software native/soft files to review the same. In case hydrate formation is predicted, please also specify the type of line heater (fuel gas fired, electric etc.) to be considered or hydrate inhibitor injection is also acceptable.	All FEED level operating conditions, studies, calculations, datasheets & etc. are provided in tender documents, whereas, bidder has to developed it own calculations and simulations. Furthermore, as per Scope of work, during Detailed Engineering bidder has to check the hydrate formation in the existing UCH-I and UCH-II Plants' associated system along with New FEC system and provide proven solution with proper justifications in case of hydrate formation detected without any price adder and time impact.
18	<b>0221-A-1001-2 (Basis of Design) Section 3.9</b>	It is mentioned that <i>'the above adequacy of UCH-II flare system is based on design values, however, OGDCL's Plant operations staff indicated bottlenecks in existing flare system of UCH-II with respect to capacity and liquid arrivals. Mitigation of bottlenecks must be considered by carrying out debottlenecking study for satisfactory operation with respect to UCH-II plant and further design requirements of combined FEC facility to perform the modification works in existing flare system.'</i> Bidder understands that this is not part of scope of work as no preliminary study, database and details etc. is available for bidder to estimate the scope of work.	As per Scope of work, bidder has to performed existing Flare Headers system adequacy study (including but not limited: Rating/ Sizing, Vent/Flare Heat Radiation and Dispersion Considerations as well as Liquid Dropout Potential) with respect to its old, new and revised loads (calculated by bidder during detailed engineering) and provide solutions in case of any bottleneck found. Further, verification of the provided design data. bidder shall, by site visit (s) and otherwise, familiarize himself with existing facilities, field operation and site details, clarify any inconsistencies and obtain any additional information he may require to complete his work; and check, correct and supplement any existing drawings required as a basis for his work. Updating of all received data as a result of site visit, information received from OGDCL/Consultant shall be the responsibility of the bidder. Moreover, maximum supplies and engineering in this respect are already mentioned in tender.



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19	<b>P&amp;ID UCH-I Slug Catcher M-200</b>	BDV-2012 inlet & outlet line sizes are not mentioned on P&ID, please specify the line sizes.	All FEED level operating conditions, studies, calculations, datasheets & etc. are provided in tender documents, whereas, during detailed engineering bidder has to performed calculations and hydraulics of all safety devices (PCVs, PSVs & BDVs) with respect to its old, new and revised loads (calculated by bidder during detailed engineering) and provide solutions in case of any bottleneck found.
20	<b>P&amp;ID UCH-I Slug Catcher M-200</b>	Please specify the flow capacity of PCV-2101 to be considered by bidder. There are following possibilities, please advise the basis to be considered: a- Design flow of both UCH-I Slug Catchers M-200 and MA-210 (127+100= 227 MMSCFD). b- Design flow of any one UCH-I Slug Catcher M-200 or MA-210 (127 MMSCFD). c- 25% turndown flow of both UCH-I Slug Catchers M-200 and MA-210 (~57 MMSCFD). d- 25% turndown flow of any one UCH-I Slug Catcher M-200 or MA-210 (~32 MMSCFD).	During detailed engineering bidder has to study all possible cases/scenarios and accordingly performed calculations of all safety devices (PCVs, PSVs & BDVs) with respect to its old, new and revised loads (calculated by bidder during detailed engineering) and provide solutions in case of any bottleneck found.
21	<b>P&amp;ID UCH-I Slug Catcher M-200</b>	PCV-2101 inlet & outlet line sizes are not mentioned on P&ID, please specify the line sizes.	During detailed engineering bidder has to study all possible cases and accordingly performed calculations & hydraulic of all safety devices (PCVs, PSVs & BDVs) with respect to its old, new and revised loads (calculated by bidder during detailed engineering) and provide solutions in case of any bottleneck found.
22	<b>P&amp;ID UCH-I Slug Catcher M-200</b>	At TIP-006 (H2S Removal Plant Tie-in), no double block isolation valves are shown & marked on P&ID. However, isolation philosophy in scope of work requires to provide double isolation block valves at all tie-in points. Please advise 18" double block valves are required to be included on P&ID.	Bidder to follow the scope of work Tie-In point isolation philosophy.
23	<b>P&amp;ID UCH-I Slug Catcher M-200</b>	Sizing scenario for PSV-2015 is not mentioned on P&ID. Please specify it is sized for blocked discharge scenario (127 MMSCFD) or some other scenario.	During detailed engineering bidder has to study all possible cases/scenarios and accordingly performed calculations of all safety devices (PCVs, PSVs & BDVs) with respect to its old, new and revised loads (calculated by bidder during detailed engineering) and provide solutions in case of any bottleneck found.
24	<b>P&amp;ID UCH-I New Slug Catcher M-210</b>	Please specify the capacity of PSV-2015A to be considered by bidder. Bidder understands that 'blocked discharge' PSV of 100 MMSCFD capacity is required to be considered. Further, PSV-2015A inlet & outlet line sizes are not mentioned on P&ID, please specify the line sizes.	During detailed engineering bidder has to study all possible cases/scenarios and accordingly performed calculations & hydraulic of all safety devices (PCVs, PSVs & BDVs) with respect to its old, new and revised loads (calculated by bidder during detailed engineering) and provide solutions in case of any bottleneck found.



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25	<b>P&amp;ID Suction &amp; Discharge Header (New FEC)</b>	Please specify the flow capacity of 251-PCV-005 to be considered by bidder. There are following possibilities, please advise the basis to be considered: a- Design flow of all UCH-II Slug Catchers 210-V101, 211-V101 and 212-V101 (72+104+123= 299 MMSCFD). This is not possible due to flare capacity limitation (262 MMSCFD). b- Design flow of any one UCH-II Slug Catcher 210-V101 or 211-V101 or 212-V101 (123 MMSCFD). c- 25% turndown flow of all UCH-II Slug Catchers 210-V101, 211-V101 and 212-V101 (18+26+31= 75 MMSCFD). d- 25% turndown flow of any one UCH-II Slug Catcher 210-V101 or 211-V101 or 212-V101 (31 MMSCFD).	As per Scope of work, bidder has to performed existing Flare Headers system adequacy study (including but not limited: Rating/ Sizing, Vent/Flare Heat Radiation and Dispersion Considerations as well as Liquid Dropout Potential) with respect to its old, new and revised loads (calculated by bidder during detailed engineering) and provide solutions in case of any bottleneck found.
26	<b>P&amp;ID Suction &amp; Discharge Header (New FEC)</b>	251-PCV-005 inlet & outlet line sizes are not mentioned on P&ID, please specify the line sizes.	During detailed engineering bidder has to study all possible cases/scenarios and accordingly performed calculations & hydraulic of all safety devices (PCVs, PSVs & BDVs) with respect to its old, new and revised loads (calculated by bidder during detailed engineering) and provide solutions in case of any bottleneck found.
27	<b>P&amp;ID Suction &amp; Discharge Header (New FEC)</b>	251-BDV-003 inlet & outlet line sizes are not mentioned on P&ID, please specify the line sizes.	During detailed engineering bidder has to study all possible cases/scenarios and accordingly performed calculations & hydraulic of all safety devices (PCVs, PSVs & BDVs) with respect to its old, new and revised loads (calculated by bidder during detailed engineering) and provide solutions in case of any bottleneck found.
28	<b>P&amp;ID Suction &amp; Discharge Header (New FEC)</b>	Please specify the 251-PCV-001 and 251-PCV-004 design configuration to be considered by bidder as 2x50% capacity or 1x100% capacity (1 running, 1 standby).	During detailed engineering bidder has to study all possible operating philosophy of 251-PCV-001 and 251-PCV-004 and accordingly recommend the most viable configuration.
29	<b>P&amp;ID Suction &amp; Discharge Header (New FEC)</b>	Please specify the flow capacity of 251-PCV-001 and 251-PCV-004 to be considered by bidder. There are following possibilities, please advise the basis to be considered: a- Design flow of two running FEC (486.4 MMSCFD). This is not possible due to flare capacity limitation (262 MMSCFD). b- Design flow of any one running FEC (243.2 MMSCFD). c- 25% turndown flow of two running FEC (70 MMSCFD). d- 25% turndown flow of any one running FEC (35 MMSCFD).	As per Scope of work, bidder has to performed existing Flare Headers system adequacy study (including but not limited: Rating/ Sizing, Vent/Flare Heat Radiation and Dispersion Considerations as well as Liquid Dropout Potential) with respect to its old, new and revised loads (calculated by bidder during detailed engineering) and provide solutions in case of any bottleneck found. Furthermore, During detailed engineering bidder has to study all possible operating philosophy of 251-PCV-001 and 251-PCV-004 and accordingly recommend the most viable configuration.
30	<b>P&amp;ID Suction Scrubber Train-A (New FEC)</b>	Please specify the 251-PSV-001A and 251-PSV-002B configuration to be considered by bidder as 2x50% capacity or 1x100% capacity (1 running, 1 standby).	As depicted in P&ID, 251-PSV-001A and 251-PSV-002B configuration to be considered is 1x100% capacity (1 running, 1 standby).



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31	<b>P&amp;ID Suction Scrubber Train-A (New FEC)</b>	Please specify the 251-PSV-001A/251-PSV-002B flow capacity to be considered by bidder. Please advise it is to be sized for blocked outlet case i.e. 243.2 MMSCFD or blocked outlet case PSVs provided on all UCH-I and UCH-II slug catchers will suffice the requirement and fire case PSV to be considered for all compressor suction scrubbers.	During detailed engineering bidder has to study all possible cases/scenarios and accordingly performed calculations & hydraulic of all safety devices (PCVs, PSVs & BDVs) and designed the FEC facility in such a way that continuous, safe and efficient operation at all anticipated conditions during the active life of the installation shall be achieved.
32	<b>P&amp;ID Turbo Compressor Train-A / Trim Cooler Train-A (New FEC)</b>	There is no PSV shown or provided at compressor outlet side. Please advise blocked outlet PSV (243.2 MMSCFD capacity) at compressor outlet is not required to be considered as the same are available on existing H2S removal units. Please confirm.	During detailed engineering bidder has to study all possible cases/scenarios and accordingly performed calculations & hydraulic of all required safety devices (PCVs, PSVs & BDVs) and designed the FEC facility in such as way that continuous, safe and efficient operation at all anticipated conditions during the active life of the installation shall be achieved.
33	<b>P&amp;ID Trim Cooler Train-A (New FEC)</b>	251-PSV-003C inlet & outlet line sizes are not mentioned on P&ID, please specify the line sizes.	During detailed engineering bidder has to study all possible cases/scenarios and accordingly performed calculations & hydraulic of all required safety devices (PCVs, PSVs & BDVs) and designed the FEC facility in such as way that continuous, safe and efficient operation at all anticipated conditions during the active life of the installation shall be achieved.



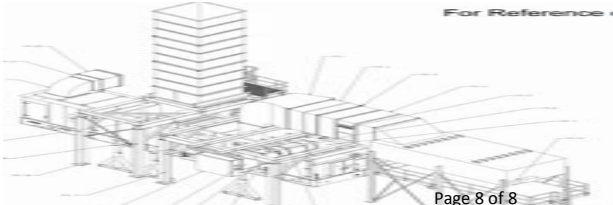
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34	<b>P&amp;ID Fuel Gas System Unit-4001 (New FEC)</b>	There is no pressure control valve (PCV) provided on fuel gas supply line coming out from fuel gas knockout drum to release excess pressure to flare in case of over-pressurization. Please advise this is required to be considered as a second layer of protection in addition to PSV.	During detailed engineering bidder has to study all possible cases/scenarios and accordingly performed calculations & hydraulic of all required safety devices (PCVs, PSVs & BDVs) and designed the new Fuel gas system in such as way that continuous, safe and efficient operation at all anticipated conditions during the active life of the installation shall be achieved.
35	<b>P&amp;ID Fuel Gas System Unit-4001 (New FEC)</b>	There is no blow down valve (BDV) provided on fuel gas system to blow down the system in case of fire & gas detection. Please advise this is required to be considered by bidder as per API 521 requirement for process equipment operating at a pressure of 250 psi or higher.	During detailed engineering bidder has to study all possible cases/scenarios and accordingly performed calculations & hydraulic of all required safety devices (PCVs, PSVs & BDVs) and designed the new Fuel gas system in such as way that continuous, safe and efficient operation at all anticipated conditions during the active life of the installation shall be achieved.
36	<b>P&amp;ID New Produced Water System (New FEC)</b>	955-PSV-001A and 955-PSV-001B inlet & outlet line sizes are not mentioned on P&ID, please specify the line sizes.	During detailed engineering bidder has to study all possible cases/scenarios and accordingly performed calculations & hydraulic of all required safety devices (PCVs, PSVs & BDVs) and designed the produced water system in such as way that continuous, safe and efficient operation at all anticipated conditions during the active life of the installation shall be achieved.
37	<b>P&amp;ID New Produced Water System (New FEC)</b>	955-PCV-002A and 955-PCV-002B inlet & outlet line sizes are not mentioned on P&ID, please specify the line sizes.	During detailed engineering bidder has to study all possible cases/scenarios and accordingly performed calculations & hydraulic of all required safety devices (PCVs, PSVs & BDVs) and designed the produced water system in such as way that continuous, safe and efficient operation at all anticipated conditions during the active life of the installation shall be achieved.
38	<b>P&amp;ID New Produced Water System (New FEC)</b>	Line size is not mentioned on P&ID for 955-V102 (blow case vessel) vent line to flare, please specify the line sizes.	During detailed engineering bidder has to study all possible cases/scenarios and accordingly performed calculations & hydraulic of all required safety devices (PCVs, PSVs & BDVs) and designed the produced water system in such as way that continuous, safe and efficient operation at all anticipated conditions during the active life of the installation shall be achieved.
39	-	As mentioned in the SOW that a steel structure shed shall be provided on each centrifugal compressor along with overhead crane system that has a capacity of lifting any heavy item/part in the shed., but after checking Solar's technical proposal, Solar Compressor and Turbine is a canopy-based structure and no need sheds. Please confirm whether bidder's understanding is correct.  	Bidder understanding is not correct. Steel structure shed on each centrifugal compressor shall be required as per tender.