

Work Order No.	WO Date	Amendment No.	Amendment Date
TPL/403779/AIS/WO/1730	19-Nov-2019		

13.0	Certification: All invoices should be certified and signed by Project Manager/RCM for releasing the payment.
13.1	Risk Purchase: During execution of this order, if any delay is observed due to reasons attributable to you other than Force Majeure conditions which may cause delay in completion of the work, TPL shall be at liberty to cancel the contract, totally or partially, at any point of time without assigning any reasons, whatsoever, and take alternative measures at your risk and cost.
14.0	Tax Deduction At Source (TDS): Shall be deducted as applicable and is in your scope.
15.0	Vendor's Help Desk: Vendor shall forward their feedback in the "Vendor feedback Form" attached as Annexure-3 to this Order to the "Vendor Help Desk" in Tata Projects Limited to the group e-mail ID: vendors.helpdesk@tataprojects.com for appropriate response from the group, on any critical issues related to execution of this order for which response is unduly delayed by the concerned contact persons from projects, Finance and SCM as indicated in the Order
16.0	Business Ethics: Tata Projects Ltd. Is committed to operating its business conforming to the highest moral and Ethical standards. This commitment underpins everything that we do in connection with this Purchase Order/ Works order. Tata Projects Ltd., shall work with suppliers and service providers who share similar value and demonstrate the same values. We expect our suppliers & service providers to conform to the Tata Code of Conduct (TCoC) in interactions with, and on behalf of us, including respecting the confidentiality of information shared with them. Tata Projects Ltd represents and covenants that it has not made, offered, Paid, Promised or authorized, and will not make, offer, pay, promise or authorize, the payment or gift of money or anything of value directly or indirectly to any party, in exchange for a business advantage, including a commitment to expedite or perform a routine action. You are requested to visit our Website www.tataprojects.com for viewing the full text of TATA Code of Conduct.
17.0	Governing Law and Dispute Resolution: This Agreement shall be governed and construed in accordance with the laws of India. Any dispute, controversy or claim arising out of or relating to this Agreement shall be settled in the first instance amicably between the parties. If an amicable settlement cannot be reached as above, it will be settled by arbitration in accordance with The Arbitration and Conciliation Act, 1996 with any amendments and modifications thereto. The venue for the arbitration shall be Hyderabad and the language of Arbitration shall be English and the Courts of Hyderabad shall have exclusive Jurisdiction. The arbitration award shall be final and binding on both Parties. Pending commencement / completion of dispute related activities, the Party shall stand committed to complete their obligations in terms of work order so as to not to affect progress of work.
18.0	Limitation of Liability: Notwithstanding anything contained in this Agreement and/or any of its parts, portions, allied contracts and agreements it is agreed between the parties hereto that the aggregate cumulative liability of the Supplier/ Contractor under this Agreement, at any and all times, for any and all indemnities, liabilities, claims, direct damages, etc., including without limitation liquidated damages, risk purchase, warranty obligations, death or injury to any person or damage to property shall at all times not exceed in the aggregate 100% of the total value of the payment / price actually received by the Supplier/ Contractor. In no event shall the Supplier/ Contractor be liable to indemnify the Purchaser for loss of contracts, loss of business, loss of data (including but not limited to any and all costs for retrieving and restoring lost data), loss of interest, for lost profits or business interruption or any indirect or consequential damages, irrespective of the cause of action or the legal theory upon which such claim is based and even if such obligations of the Contractor appear at any place in this Agreement and/or any of its parts, portions, allied contracts and agreements."
19.0	Force Majeure: Neither party shall be considered to be in default or in breach of its obligations under the Contract to the extent that performance of such obligation is prevented by any circumstances of Force Majeure, which arises after the date of the Contract. Each party shall be responsible for the respective costs incurred by such party as a result of, or in relation to the occurrence of an event of Force Majeure or in respect of the actions to be taken by the Affected Party in respect thereof.
20.0	Order Acceptance :
20.1	Please send your acceptance of this work order by duly signing on each page with your Company's seal accepting all Terms & Conditions. In case no reply is received within 7 days, it shall be deemed that this Work Order has been accepted by you in Toto.
20.2	Please expedite return of your acceptance as advised herein immediately on receipt of the work order.
21.0	Work order termination: TPL reserves right to terminate the work order at short notice in the event of failure of agency to perform the services in accordance with the terms and conditions of this contract and to the entire satisfaction of TPL and further alternate agency will be engaged to complete the remaining portion of the works at your risk and cost.
22.0	Post Order Correspondence:
22.1	Please quote our above Work Order No. & date, and invoice no in all your future correspondence which shall be addressed to – Mr. Anil Kumar Jaiswal - aniljaiswal@tataprojects.com
22.2	All your invoices for Payment shall be forwarded in Original PLUS 1 extra copy to TATA PROJECTS LIMITED, SBG Services, Splendid Towers, 6 th Floor, H.No. 1-8-364, 437, 438 & 445 S.P. Road, Begumpet, Hyderabad -500003, Telangana. Please note that the above requirement will ensure seamless processing of your invoices While forwarding the invoices, please also ensure that all supporting documents required for processing of invoices are enclosed. For this purpose, we recommend that a check list be submitted together with your invoices.
23.0	After sales service: For any defect intimated to you, you shall take proactive action to resolve the issue at the earliest.
24.0	Submission of Invoices for Payment: We have a system of making payments to our vendors through RTGS (Real Time Gross Settlement) for which you shall submit your letter with bank details countersigned by your banker in the format to this Work Order for release of payment.

Amendment	
1.	Amendment Detail:
2.	General:

Yours truly,
for TATA PROJECTS LIMITED



Tenny K Cherian
COO




M. Bhoopathy
Vice President

ITEM NO	ITEM DESCRIPTION	UOM	QUANTITY	ARTIS AMOUNT
41	MODIFICATION OF THE STATIC EQUIPMENT Carrying out preparatory work for the modification, de-blinding the equipment, blinding off the adjacent line, temporary supporting of the line, removal of insulation, cleaning of the equipment, removal of piping spools and valves, as required, removal of structures, instrument items etc., removal of internals like catalyst, tray etc., making necessary arrangement for working in confined space, arrangement of scaffolding for all height, Supply of consumable, tools & tackles, lifting arrangements, cranes, tractor trolley, trailers and labour to complete the job in a workman like manner, carrying out NDT, PWHT, box up of the equipment, hook up with the existing line, removal of temporary supports, pressure testing, cleaning, drying, purging, reinstallation of valves and instruments as specified in the specifications, drawings and as per the instruction of OWNER/Engineer-in-Charge during pre-shutdown/shutdown period.			
41.1	48-V-06 (Degasifier)			
41.1.1	Removal of existing Packing (01 Inch Pall ring) with all necessary arrangements (Refer Drawing No UHE-4747/G) by de-bolting cutting without damaging the unit, lowering down them to ground , handling and transporting to designated place with all consumables, tools, manpower to the entire satisfaction of Engineer-in-Charge.	MT	0.85	
41.1.2	Removal of existing distributors with all necessary arrangements (Refer Drawing No UHE-4747/G) by de-bolting cutting without damaging the unit, lowering down them to ground , handling and transporting to designated place with all consumables, tools, manpower to the entire satisfaction of Engineer-in-Charge.	MT	0.10	
41.1.3	Dismantling of existing 2" NB N16 nozzle, Supply, fabrication and installation of 2" NB new nozzle including RF pad (Refer drawing 44AC2700-48/V.01/0012/A1), Supply of consumable, tools & tackles and labour to complete the job in a workman like manner, carrying out NDT, Hydro test of entire vessel, Pneumatic test of RF pad, box up of the equipment, hook up with the existing line, removal of temporary supports, cleaning, drying, purging, reinstallation of valves and instruments as specified in the specifications, drawings and as per the instruction of OWNER/Engineer-in-Charge.	NO	1.00	
41.1.4	Installation new Packing (01 Inch Pall ring) with all necessary arrangements (Refer Drawing No UHE-4747/G) including collection & transportation, loading of Internal from OWNER'S storage point to worksite, unloading, uncrating the boxes/cases, levelling, aligning, torque tightening, welding and providing all tools, tackles, machinery, consumables, transportation equipment, erection equipment, instruments, labour, ancillary, etc. to complete the work in all respects including minor rectifications (if required) as per drawings, technical specifications, directions of Vendor and instructions of Engineer-in-Charge.	MT	0.85	
41.1.5	Installation of new distributors with all necessary arrangements (Refer Drawing No UHE-4747/G) including collection & transportation, loading of Internal from OWNER'S storage point to worksite, unloading, uncrating the boxes/cases, levelling, aligning, torque tightening, welding and providing all tools, tackles, machinery, consumables, transportation equipment, erection equipment, instruments, labour, ancillary, etc. to complete the work in all respects including minor rectifications (if required) as per drawings, technical specifications, directions of Vendor and instructions of Engineer-in-Charge.	MT	0.10	
41.2	48-R-01 (Hydrogenate Reactor)			
41.2.1	Removal of existing catalyst, support balls, mesh with all necessary arrangements (Refer Drawing No 6VL-C-888) by de-bolting/cutting without damaging the unit, lowering down them to ground, handling, transporting to designated place and storage (including supply of plastic industrial drums and pallets) with all consumables, tools, manpower to the entire satisfaction of Engineer-in-Charge.	MT	5.90	
41.2.2	Dismantling of existing inlet device all necessary arrangements (Refer Drawing No 6VL-C-888) by de-bolting/cutting without damaging the unit, lowering down them to ground , handling and transporting to designated place with all consumables, tools, manpower to the entire satisfaction of Engineer-in-Charge.	MT	0.70	
41.2.3	Replacement of multistage temperature element 'TT-506 and TT-507' mounted on N5 and N6 Nozzle with box up.	NO	2.00	
41.2.4	Installation of new catalyst (dense/sock loading), support balls, mesh (along with supply of mesh) with necessary arrangements (Refer drawing No 44AC2700-48/V.01/005/A1) including collection & transportation from OWNER'S storage point to worksite, unloading, uncrating the boxes/cases, levelling, aligning, torque tightening, welding and providing all tools, tackles, machinery, consumables, transportation equipment, erection equipment, instruments, labour, ancillary, etc. to complete the work in all respects including minor rectifications (if required) as per drawings, technical specifications, directions of Vendor and instructions of Engineer-in-Charge.	MT	3.10	
41.2.5	Supply, fabrication and installation of inlet device with necessary arrangements (Refer drawing No 44AC2700-48/V.01/005/A1), Supply of consumable, tools & tackles, lifting arrangements, cranes and labour to complete the job in a workman like manner, carrying out NDT, box up of the equipment, hook up with the existing line, removal of temporary supports, cleaning, drying, purging, reinstallation of valves and instruments as specified in the specifications, drawings and as per the instruction of OWNER/Engineer-in-Charge.	NO	1.00	
41.3	48-R-02A&B (Desulfurizer)			
41.3.1	Removal of existing catalyst, support balls, mesh with all necessary arrangements (Refer Drawing No 6VL-C-889) by de-bolting/cutting without damaging the unit, lowering down them to ground, handling and transporting to designated place with all consumables, tools, manpower to the entire satisfaction of Engineer-in-Charge.	MT	4.90	
41.3.2	Dismantling of existing inlet device all necessary arrangements (Refer Drawing No 6VL-C-888) by de-bolting/cutting without damaging the unit, lowering down them to ground, handling and transporting to designated place with all consumables, tools, manpower to the entire satisfaction of Engineer-in-Charge.	MT	1.40	
41.3.3	Installation of new catalyst (dense/sock loading), support balls, mesh (along with supply of mesh) with necessary arrangements (Refer drawing No 44AC2700-48/V.01/006/A1) including collection & transportation from OWNER'S storage point to worksite, unloading, uncrating the boxes/cases, levelling, aligning, torque tightening, welding and providing all tools, tackles, machinery, consumables, transportation equipment, erection equipment, instruments, labour, ancillary, etc. to complete the work in all respects including minor rectifications (if required) as per drawings, technical specifications, directions of Vendor and instructions of Engineer-in-Charge.	MT	8.40	
41.3.4	Supply, fabrication and installation of inlet device with necessary arrangements (Refer drawing No 44AC2700-48/V.01/006/A1), Supply of consumable, tools & tackles, lifting arrangements, cranes and labour to complete the job in a workman like manner, carrying out NDT, box up of the equipment, hook up with the existing line, removal of temporary supports, cleaning, drying, purging, reinstallation of valves and instruments as specified in the specifications, drawings and as per the instruction of OWNER/Engineer-in-Charge.	NO	2.00	
41.4	48-R-03A&B (Preformer)			

ITEM NO	ITEM DESCRIPTION	UOM	QUANTITY	ARTIS AMOUNT
41.4.1	Removal of existing catalyst, support balls with all necessary arrangements (Refer Drawing No C.426.00.00.1) by de-bolting/cutting without damaging the unit, lowering down them to ground, handling and transporting to designated place with all consumables, tools, manpower to the entire satisfaction of Engineer-in-Charge.	MT	5.40	
41.4.2	Installation of new catalyst (dense/sock loading), support balls with necessary arrangements including collection & transportation from OWNER'S storage point to worksite, unloading, uncrating the boxes/cases, levelling, aligning, box up, torque tightening, welding and providing all tools, tackles, machinery, consumables, transportation equipment, erection equipment, instruments, labour, ancillary, etc. to complete the work in all respects including minor rectifications (if required) as per drawings, technical specifications, directions of Vendor and instructions of Engineer-in-Charge.	MT	4.60	
41.5	48-R-04 (HT Shift Reactor)			
41.5.1	Removal of existing catalyst, support balls, mesh with all necessary arrangements (Refer Drawing No 6VL-C-890) by de-bolting/cutting without damaging the unit, lowering down them to ground, handling, transporting to designated place and storage (including supply of plastic industrial drums and pallets) with all consumables, tools, manpower to the entire satisfaction of Engineer-in-Charge.	MT	10.00	
41.5.2	Dismantling of existing support grid with all necessary arrangements (Refer Drawing No 6VL-C-890) by de-bolting/cutting or by any other means without damaging the unit, lowering down them to ground, handling and transporting to designated place with all consumables, tools, manpower to the entire satisfaction of Engineer-in-Charge.	MT	0.60	
41.5.3	Dismantling of existing inlet device all necessary arrangements (Refer Drawing No 6VL-C-890) by de-bolting/cutting without damaging the unit, lowering down them to ground, handling and transporting to designated place with all consumables, tools, manpower to the entire satisfaction of Engineer-in-Charge.	MT	0.04	
41.5.4	Supply of materials, fabrication and installation for modification of existing 'N2' nozzle, installation of Outlet basket (Jonson screen will be free issue material) with necessary arrangements (Refer drawing No 44AC2700-48/V.01/0007/A1), Supply of consumable, tools & tackles, lifting arrangements, cranes and labour to complete the job in a workman like manner, carrying out welding, PWHT, NDT, box up of the equipment, Hydro test, hook up with the existing line, removal of temporary supports, cleaning, drying, purging, reinstallation of valves and instruments as specified in the specifications, drawings and as per the instruction of OWNER/Engineer-in-Charge.	NO	1.00	
41.5.5	Installation of new catalyst (dense/sock loading), support balls with necessary arrangements (Refer drawing No 44AC2700-48/V.01/0007/A1) including collection & transportation from OWNER'S storage point to worksite, unloading, uncrating the boxes/cases, levelling, aligning, box up, torque tightening, welding and providing all tools, tackles, machinery, consumables, transportation equipment, erection equipment, instruments, labour, ancillary, etc. to complete the work in all respects including minor rectifications (if required) as per drawings, technical specifications, directions of Vendor and instructions of Engineer-in-Charge.	MT	13.00	
41.5.6	Supply, fabrication and installation of inlet device with necessary arrangements (Refer drawing No 44AC2700-48/V.01/007/A1), Supply of consumable, tools & tackles, lifting arrangements, cranes and labour to complete the job in a workman like manner, carrying out NDT, box up of the equipment, hook up with the existing line, removal of temporary supports, cleaning, drying, purging, reinstallation of valves and instruments as specified in the specifications, drawings and as per the instruction of OWNER/Engineer-in-Charge.	NO	1.00	
41.6	48-R-05 (LT Shift Reactor)			
41.6.1	Dismantling of existing catalyst, support balls, mesh with all necessary arrangements (Refer Drawing No 6VL-C-891) by de-bolting/cutting without damaging the unit, lowering down them to ground, handling, transporting to designated place and storage (including supply of plastic industrial drums and pallets) with all consumables, tools, manpower to the entire satisfaction of Engineer-in-Charge.	MT	11.00	
41.6.2	Dismantling of existing support grid with all necessary arrangements (Refer Drawing No 6VL-C-891) by de-bolting/cutting or by any other means without damaging the unit, lowering down them to ground, handling and transporting to designated place with all consumables, tools, manpower to the entire satisfaction of Engineer-in-Charge.	MT	0.60	
41.6.3	Dismantling of existing inlet device all necessary arrangements (Refer Drawing No 6VL-C-891) by de-bolting/cutting without damaging the unit, lowering down them to ground, handling and transporting to designated place with all consumables, tools, manpower to the entire satisfaction of Engineer-in-Charge.	MT	0.04	
41.6.4	Supply of materials, fabrication and installation for modification of existing 'N2' nozzle, installation of Outlet basket (Jonson screen will be free issue material) with necessary arrangements (Refer drawing No 44AC2700-48/V.01/0008/A1), Supply of consumable, tools & tackles, lifting arrangements, cranes and labour to complete the job in a workman like manner, carrying out welding, PWHT, NDT, box up of the equipment, Hydro test, hook up with the existing line, removal of temporary supports, cleaning, drying, purging, reinstallation of valves and instruments as specified in the specifications, drawings and as per the instruction of OWNER/Engineer-in-Charge.	NO	1.00	
41.6.5	Installation of new catalyst (dense/sock loading), support balls with necessary arrangements (Refer drawing No 44AC2700-48/V.01/0008/A1) including collection & transportation from OWNER'S storage point to worksite, unloading, uncrating the boxes/cases, levelling, aligning, box up, torque tightening, welding and providing all tools, tackles, machinery, consumables, transportation equipment, erection equipment, instruments, labour, ancillary, etc. to complete the work in all respects including minor rectifications (if required) as per drawings, technical specifications, directions of Vendor and instructions of Engineer-in-Charge.	MT	16.00	
41.6.6	Supply, fabrication and installation of inlet device with necessary arrangements (Refer drawing No 44AC2700-48/V.01/007/A1), Supply of consumable, tools & tackles, lifting arrangements, cranes and labour to complete the job in a workman like manner, carrying out NDT, box up of the equipment, hook up with the existing line, removal of temporary supports, cleaning, drying, purging, reinstallation of valves and instruments as specified in the specifications, drawings and as per the instruction of OWNER/Engineer-in-Charge.	NO	1.00	
41.6.7	49-V-02 (Feed Surge Drum)			
41.6.8	Dismantling of existing 4" NB AH nozzle, Supply, fabrication and installation of 6" NB new nozzle assembly including RF Pad (Refer drawing No DN-WS-M211-101 sheet 01&02 and 44AC2700-49/V.01/0001/A1), Supply of consumable, tools & tackles, lifting arrangements, cranes and labour to complete the job in a workman like manner, carrying out NDT, Hydro test, box up of the equipment, hook up with the existing line, removal of temporary supports, cleaning, drying, purging, reinstallation of valves and instruments as specified in the specifications, drawings and as per the instruction of OWNER/Engineer-in-Charge.	NO	1.00	

ITEM NO	ITEM DESCRIPTION	UOM	QUANTITY	ARTIS AMOUNT
41.7	49-V-04 (High Pressure separator)			
41.7.1	Dismantling of existing 3" NB AU nozzle, Supply, fabrication and installation of 6" NB new nozzle, removal and reinstallation of mesh blanket (Refer drawing No 6VL-C-887 sheet 01&02 and 44AC2700-49/V.01/0010/A1), Supply of consumable, tools & tackles, lifting arrangements, cranes and labour to complete the job in a workman like manner, carrying out Pre heat, PWHT, NDT, Hydro test, box up of the equipment, hook up with the existing line, removal of temporary supports, cleaning, drying, purging, reinstallation of valves and instruments as specified in the specifications, drawings and as per the instruction of OWNER/Engineer-in-Charge.	NO	1.00	
41.7.2	Supply, fabrication and installation of Boot with necessary arrangements with Monel weld overlay (10 mm thk.) on inside boot shell, dish, inside of all nozzles located on boot, gasket area of boot flange, nozzle flanges, Machining of inside surface of boot and flange gasket seating surfaces (Octagonal gasket and fasteners of existing boot shall be used), Supply of consumable, tools & tackles, lifting arrangements, cranes and labour to complete the job in a workman like manner, carrying out Pre heat, PWHT, NDT, Hydro test, box up of the equipment, hook up with the existing line, removal of temporary supports, cleaning, drying, purging, reinstallation of valves and instruments as specified in the specifications, drawings and as per the instruction of OWNER/Engineer-in-Charge. (Refer drawing No 6VL-C-887 sheet 01&02 and 44AC2700-49/V.01/0010/A1)	NO	1.00	
41.8	49-V-07 (Caustic Wash Tower)			
41.8.1	Dismantling of existing 4" NB AH nozzle, Supply, fabrication and installation of 6" NB new nozzle including RF Pad (Refer drawing No DN-WS-M211-201 and 44AC2700-49/V.01/0002/A1), Supply of consumable, tools & tackles, lifting arrangements, cranes and labour to complete the job in a workman like manner, carrying out PWHT, NDT, Hydro test, box up of the equipment, hook up with the existing line, removal of temporary supports, cleaning, drying, purging, reinstallation of valves and instruments as specified in the specifications, drawings and as per the instruction of OWNER/Engineer-in-Charge.	NO	1.00	
41.9	49-C-02 (Stripper)			
41.9.1	Dismantling of existing 8" NB 150# flange from "Cl" Nozzle, Supply and installation of 8" NB 600# flange (Refer drawing No 1CL-C-896 and 44AC2700-48/V.01/0009/A1), Supply of consumable, tools & tackles, lifting arrangements, cranes and labour to complete the job in a workman like manner, Acceptance of welding based on radiography treating it as golden joint, carrying out NDT, box up of the equipment, hook up with the existing line, removal of temporary supports, purging as specified in the specifications, drawings and as per the instruction of OWNER/Engineer-in-Charge.	NO	1.00	
41.9.2	Supply, fabrication and installation of 8" NB new 'RS' nozzle with flange including RF Pad on Manway blind flange of nozzle 'FM' (Refer drawing No 1CL-C-896 and 44AC2700-48/V.01/0009/A1), Supply of consumable, tools & tackles, lifting arrangements, cranes and labour to complete the job in a workman like manner, carrying out PWHT, NDT, local hydro test, box up of the equipment, hook up with the existing line, removal of temporary supports, cleaning, drying, purging, reinstallation of valves and instruments as specified in the specifications, drawings and as per the instruction of OWNER/Engineer-in-Charge.	NO	1.00	
41.1	055-C-01 (3 Cuts Splitter)			
41.10.1	Removal of existing nozzles I1, D3, I3 and 12 inch NB sleeve of Nozzle D3, Supply, fabrication and installation of new I1, D3, I3 nozzles and 16 inch NB sleeve of nozzle D3, Installation of internal distributor for nozzle I1 (Refer drawing No M-1974/FAD/2008, 252801-D000, 252801-D001 and 44AC2700-55/V.01/0003/A1), Supply of consumable, tools & tackles, lifting arrangements, cranes and labour to complete the job in a workman like manner, carrying out PWHT, NDT, box up, hydro test of the equipment, hook up with the existing line, removal of temporary supports, cleaning, drying, purging, reinstallation of valves and instruments as specified in the specifications, drawings and as per the instruction of OWNER/Engineer-in-Charge.	NO	1.00	
41.10.2	Dismantling of existing Tray (#23-45) with all necessary arrangements (Refer Drawing No 252801-D000) by de-bolting cutting without damaging the unit, lowering down them to ground, handling and transporting to designated place with all consumables, tools, manpower to the entire satisfaction of Engineer-in-Charge.	MT	1.50	
41.10.3	Collection & transportation including loading of Internal from OWNER'S storage point to worksite, unloading, uncrating the boxes/cases, erection of Trays (#23-45), mock up assembly, levelling, aligning, torque tightening, welding and providing all tools, tackles, machinery, consumables, transportation equipment, erection equipment, instruments, labour, ancillary, etc. to complete the work in all respects including minor rectifications (if required) as per drawings, technical specifications, directions of Vendor and instructions of Engineer-in-Charge.	MT	1.50	
41.11	055-V-01 (Feed Surge Drum)			
41.11.1	Supply, fabrication and installation of 3" NB new nozzle including RF Pad, stiffener, inner plate etc. (Refer drawing No FTP 09808-DR-055V01 Sheet 01 to 03 and 44AC2700-48/V.01/0004/A1), Supply of consumable, tools & tackles, lifting arrangements, cranes and labour to complete the job in a workman like manner, carrying out PWHT, NDT, Hydro test, box up of the equipment, hook up with the existing line, removal of temporary supports, cleaning, drying, purging, reinstallation of valves and instruments as specified in the specifications, drawings and as per the instruction of OWNER/Engineer-in-Charge.	NO	1.00	
41.12	49-V-14 (Net Gas Knockout Drum)			
41.12.1	Supply, fabrication and installation of RF Pad for 'AO' nozzle, (Refer drawing No UHE-4747/N and 44AC2700-49/V.01/0011/A1), Supply of consumable, tools & tackles, lifting arrangements, cranes and labour to complete the job in a workman like manner, carrying out PWHT, NDT, Hydro test, box up of the equipment, hook up with the existing line, removal of temporary supports, purging, reinstallation of valves and instruments as specified in the specifications, drawings and as per the instruction of OWNER/Engineer-in-Charge.	NO	1.00	
41.13	49-R-01 (Reactor 1)			
41.13.1	Removal of existing internals (catalyst, support balls, mesh etc.) with necessary arrangements (Refer Drawing No SU00269016/1 Sheet 01 of 04) without damaging the equipment, lowering down to ground, handling, transporting to designated place and storage (including supply of plastic industrial drums and pallets) with all consumables, tools, manpower to the entire satisfaction of Engineer-in-Charge.	MT	95.00	

ITEM NO	ITEM DESCRIPTION	UOM	QUANTITY	ARTIS AMOUNT
41.13.2	Installation of internals (catalyst loading by dense/sock loading), with necessary arrangements (Refer drawing No. SU00269016/1 Sheet 01 of 04) including collection & transportation from OWNER'S storage point to worksite, unloading, uncrating the boxes/cases, levelling, aligning, box up, torque tightening, welding and providing all tools, tackles, machinery, consumables, transportation equipment, erection equipment, instruments, labour, ancillary, etc. to complete the work in all respects including minor rectifications (if required) as per drawings, technical specifications, directions of Vendor and instructions of Engineer-in-Charge.	MT	95.00	
41.14	49-R-02 (Reactor 2)			
41.14.1	Removal of existing internals (catalyst, support balls, mesh etc.) with necessary arrangements (Refer Drawing No SU00269017/1 Sheet 01 of 04) without damaging the equipment, lowering down to ground, handling, transporting to designated place and storage (including supply of plastic industrial drums and pallets) with all consumables, tools, manpower to the entire satisfaction of Engineer-in-Charge.	MT	76.00	
41.14.2	Installation of internals (catalyst loading by dense/sock loading), with necessary arrangements (Refer drawing No. SU00269017/1 Sheet 01 of 04) including collection & transportation from OWNER'S storage point to worksite, unloading, uncrating the boxes/cases, levelling, aligning, box up, torque tightening, welding and providing all tools, tackles, machinery, consumables, transportation equipment, erection equipment, instruments, labour, ancillary, etc. to complete the work in all respects including minor rectifications (if required) as per drawings, technical specifications, directions of Vendor and instructions of Engineer-in-Charge.	MT	76.00	
	49-R-03 (Reactor 2)			
	Installation of internals (catalyst loading by dense/sock loading), with necessary arrangements (Refer drawing No. SU00269017/1 Sheet 01 of 04) including collection & transportation from OWNER'S storage point to worksite, unloading, uncrating the boxes/cases, levelling, aligning, box up, torque tightening, welding and providing all tools, tackles, machinery, consumables, transportation equipment, erection equipment, instruments, labour, ancillary, etc. to complete the work in all respects including minor rectifications (if required) as per drawings, technical specifications, directions of Vendor and instructions of Engineer-in-Charge.	MT	85	
41.15	49-V-015 (Salt Dries)			
41.15.1	Supply, fabrication and installation of 2" NB new 'L01' nozzle including stiffener plate on Manway blind flange of nozzle 'BB' (Refer drawing No 44AC2700-49/V.01/0013/A1), Supply of consumable, tools & tackles, lifting arrangements, cranes and labour to complete the job in a workman like manner, carrying out NDT, local hydro test, box up of the equipment, hook up with the existing line, removal of temporary supports, cleaning, drying, purging, reinstallation of valves and instruments as specified in the specifications, drawings and as per the instruction of OWNER/Engineer-in-Charge.	NO	1.00	
Total (Amount in Rs.)				

Matrix of Responsibility:

ITEM	ACTIVITY OR EQUIPMENT	ARTIS	TATA PROJECTS METAL CRAFT	JACOBS / IOCL
1.0	<u>GENERAL SUPPLY & PREPARATION</u>			
	Accommodation in TPL / IOCL including Laundry for ARTIS Specialist Hydrocracker Staff	X		
	All Local Transport in Guwahati from Camp / Hotel to Project Site , including to and from site during execution	X		
	India Work Visa as required for ARTIS Specialist Staff		X	
	Local Labor x 15 No's for Ground Support	X		
	Pickup Truck for Site Material Movement	X		
1.1	New Internals			X
1.2	Spares (new replacement gaskets, spares likewise of bolts, nuts, gland packing, mesh, bandit straps with clamps, rivets, new Gaskets, nuts bolts, gland packing, shims...etc)			X
1.3	Transport of Old / New Internals / Catalyst from warehouse to laydown area close to the reactor area within TPL / IOCL premises.	X		
1.4	Temporary Protection on Reactor manway	X		
1.5	Temporary shelter on grade for Mockup	X		
1.6	Electrical Connection	X		X
1.7	Crane- Up to 150 Ton Capacity		X	X
1.8	Forklifts - Up to 3 & 5 Ton Capacity	X		X
1.9	Toilet and Mess facilities		X	X
1.10	Utilities:			
	- Plant / Instrument Air 7-10 bar			X
	- Potable Water 4-5 bar			X
	- Electricity 220/240V			X
	- Cool Nitrogen 5-7 bar			X
1.11	Waste Disposal	X		X
1.12	Scaffolding as and where ever required (internal, external and decanting platform)	X		
1.13	Internal lightings with Transformers (24 V)	X		
1.14	Tool container	X		

ITEM	ACTIVITY OR EQUIPMENT	ARTIS	TATA PROJECTS	JACOBS / IOCL
			METAL CRAFT	
1.15	Trailer for transportation of Catalyst within TPL / IOCL premises	X		
1.16	Disposal of all waste generated	X		X
1.17	Passivation solution for reactors			X
2.0	<u>MECHANICAL WORKS</u>			
2.1	Isolate by Valve.		X	X
2.2	Blinding/De-blinding		X	
2.3	Elbow Removal, Open Man-ways	X	X	
2.4	Bolt Tensioning /Torqueing Equipment as & when required		X	
2.5	Pneumatic & Manual Tools for the Job	X		
2.6	Removal & Fixing of Internal Trays, Distribution Trays, Quench lines etc.	X		
2.7	Modification & any Internal Repairs	X		
2.8	All mechanical Tools & tackles required for the Job	X		
2.9	Any Internal Hot Work	X		
2.10	Any Pressure testing if required			X
2.11	Area for storing the New Internals / Catalyst			X
2.12	Area for storing the Old Internals / Catalyst			X
3.0	<u>CATALYST UNLOADING & LOADING WORKS</u>			
3.1	Personal Protective Equipment (for CR Staff)	X		
3.2	Life Support Module – Inert Entry Equipment	X		
3.3	Flexible Ladders & Rigid ladders	X		
3.4	Air/Nitrogen Hose & Connectors 3/4"	X		
3.5	Air/ Nitrogen Manifolds	X		
3.6	Static Leads	X		
3.7	Chain Blocks (1 or 2 1/2 tons)	X		
3.8	Bandit Tools & Strapping (1 with strapping 1/2 or 3/4")	X		
3.9	Video Camera & Monitor	X		
3.10	Loading Hoppers with Slide Valves	X		

ITEM	ACTIVITY OR EQUIPMENT	ARTIS	TATA PROJECTS METAL CRAFT	JACOBS / IOCL
3.11	Catalyst Decanting Platform (Scaffold Platform)		X	
3.12	Dense Loading Machine x 2 No's and Certified Operators including accommodation, flights	N.A		
3.13	All catalyst loading equipment	X		
3.14	Levels, Rakes, Tape Measures, Brooms, Shovels	X		
3.15	Lifting Jigs	X		
3.16	All Scaffolding		X	
3.17	Specialized Pneumatic, electrical and hand tools	X		
3.18	Cutting and Welding Units	X		
3.19	Bottles of Breathing Air	X		
3.20	Wooden Pallets	X		X
3.21	Drums, Lids and Liners, for Containing Spent Catalyst	X		X
3.22	Jumbo Bags for Catalyst Un-loading			X
3.23	Trained Technicians & Labor for the project	X		
3.24	Gas testing & Monitoring Equipment's	X		
3.25	Area for Storing the Fresh Catalyst			X
3.26	Area for storage of old Reactor internals			X

Payment Terms:

1. Mobilization Advance

Up 20% of contract value against ABG in two equal installments subject to fulfillment of other contract formalities and same shall be adjusted in subsequent RAs.

2. Progressive Payment

1. Progressive payments shall be released to CONTRACTOR against running account bills duly certified by Engineer-in-Charge after affecting the necessary deductions/recovery, if any. The basis for payment against various items shall be as follows:

Structural Steel Works – Material Supplied by CONTRACTOR

1. Fabrication at Site

- a) 05% on finalization of quantities, plan and submission of approved fabrication drawings.
- b) 55% on receipt and acceptance of material at site.
- c) 20% on fabrication, surface preparation and application of primer coat.
- d) 15% on erection, alignment, welding, grouting etc.
- e) 05% on completion of all works in all respects and issuance of completion certificate

2. Fabrication at Yard Outside Project Premises

- a) 05% on finalization of quantities, plan and submission of approved fabrication drawings.
- b) 55% on receipt and acceptance of material at contractor fabrication yard outside the Project premises against Rolling Bank Guarantee for an equivalent amount of materials at contractor's shop with a validity till receipt of materials at Project premises plus 03 Months claim period.
- c) 20% on fabrication, surface preparation and application of primer and receipt of fabricated structures at site.
- d) 15% on erection, alignment, welding etc.
- e) 05% on completion of all works in all respects and issuance of completion certificate.

3. Structural Steel Painting Works

- a) 95% (##) after completion of touch up/repair of primer and intermediate coat/coats and final coat.
- a) 05% on completion of all works in all respects and issuance of completion certificate.

(##) Further break up of payment schedule, if necessary, shall be recommended and approved by Engineer-In-Charge depending on number of intermediate coats.

Gratings – OWNER supplied Gratings

- a) 95% on erection, alignment, welding etc.
- b) 05% on completion of all works in all respects and issuance of completion certificate.

Above Ground Piping Works (Pipes & Pipe Components, Valves, Orifice plates – Free Issue)

4. Fabrication of respective piping items in Inch Dia (Free Issue Materials)

- a) 85% after welding of joints & its acceptance.
- b) 08% after completion of tests as per respective piping spec.
- c) 02% after mechanical completion

- d) 05% on completion of all works in all respects and issuance of completion certificate.
- 5.4.2 Erection of Piping items to be paid in IM basis (fabricated in Inch dia as 2.4 above)
- a) 75% after site erection, field welding, radiographic and other examination.
 - b) 10% after providing support, alignment, providing vents, drains etc.
 - c) 08% after flushing, testing, draining and drying.
 - d) 02% after mechanical completion.
 - e) 05% on completion of all works in all respects and issuance of completion certificate.

Under Ground Piping Works – Carbon Steel Piping (Pipes – Free Issue)

6. Fabrication (Inch Dia)

- a) 65% on welding of joints.
- b) 30% on radiography and other examinations, repair of welds, repeat radiography, extensions and penalty shots, if any and making the spools ready for erection
- c) 05% on completion of all works in all respects and issuance of completion certificate.

7. Erection (Inch Meter)

- a) 30% on pre testing, coating and wrapping of prefabricated pipes
- b) 45% on trenching, laying in position, field welding, jointing, radiography and ready for hydrotesting
- c) 20% on hydrotesting, drying (if applicable) and backfilling of trenches
- d) 05% on completion of all works in all respects and issuance of completion certificate

8. Specials / Mitres for A/G Piping

- a) 85% after welding of joints & its acceptance.
- b) 08% after completion of tests as per respective piping spec, application of shop primer etc.
- c) 02% after mechanical completion
- d) 05% on completion of all works in all respects and issuance of completion certificate.

9. Specials / Mitres for A/G Piping

- a) 85% after welding of joints & its acceptance.
- b) 08% after completion of tests as per respective piping spec, wrapping/coating, painting (as applicable)
- c) 05% on completion of all works in all respects and issuance of completion certificate.

10. NDT (i.e. Radiography, UT, MPT/DPT etc.)

- a) 95% on submission of reports and acceptance thereof.
- b) 05% on completion of all works in all respects and issuance of completion certificate.

11. Stress Relieving

- a) 95% after successful completion of stress relieving.
- b) 05% on completion of all works in all respects and issuance of completion certificate.

12. Painting

- a) 30% on surface preparation and primer painting at shop / fabrication yard.
- b) 65% (##) on completion of final painting.
- c) 05% on completion of all works in all respects and issuance of completion certificate.

(##) Further break up of payment schedule, if necessary, shall be recommended / approved by Engineer-In-Charge depending on number of intermediate coats.

13. Equipment Erection

13.1 Column, Vessels, Filters, Ejectors etc.

- a) 65% (Note 1) after transportation from stores / storage points to erection site and erection on foundation.
- b) 25% after alignment and grouting.

- c) 03% after cleaning, box up of manholes, providing all instruments / auxiliary of fit ups and making ready for startup.
- d) 02% after mechanical completion.
- e) 05% on completion of all works in all respects and issuance of completion certificate.

Note 1:

For Heavy lift equipment, this milestone payment shall be divided in two milestone payments in 13.2 case of the item is on lump-sum basis.

- a) 20% on mobilization of required capacity crane at site.
- b) 45% after transportation from stores / storage points to erection site and erection on foundation.

14. Trays and Internals

- a) 95% after transportation from stores / storage points to erection site, cleaning, placing, bolting/welding, testing within equipment, testing and inspection.
- b) 05% on completion of all works in all respects and issuance of completion certificate.

15. Heat Exchangers

- a) 65% after transportation from stores / storage points to erection site and erection.
- b) 20% after alignment and grouting.
- c) 08% after completion of flushing, draining, drying.
- d) 02% after mechanical completion.
- e) 05% on completion of all works in all respects and issuance of completion certificate.

16. Testing of Heat Exchangers

- a) 70% after testing.
- b) 23% after completion of flushing, draining, drying by compressed air.
- c) 02% after mechanical completion.
- d) 05% after completion of all works in all respects and issuance of completion certificate.

17. Machineries (Compressors, Pumps & Misc.)

- a) 45% after transportation from stores / storage points to erection site and placing in position.
- b) 30% after initial alignment, leveling and grouting.
- c) 18% after final alignment, shaft alignment after pipe hook-up, dowelling, initial fill of lubricants, mounting of accessories and completion of piping.
- d) 02% after mechanical completion.
- e) 05% on completion of all works in all respects and issuance of completion certificate.

18. FD / ID Fans (OWNER supplied material as Free Issue)

- a) 45% after transportation from stores / storage points to erection site and placing in position.
- b) 30% after initial alignment, leveling and grouting.
- d) 20% after final alignment and mounting of accessories etc.
- c) 05% on completion of all works in all respects and issuance of completion certificate.

