OIL & GAS DEVELOPMENT COMPANY LIMITED
PROCUREMENT DEPARTMENT (LOCAL), ISLAMABAD
SCHEDULE OF REQUIREMENT

Material :**REPAIR OF CRUDE STORAGE TANK,6000 BBLS**

Due Date:

Tender Enquiry No: **PROC/LF/PT/17110/17**

Bid Bond Value : RS.80,000/-

Attachment(if any) : YES

EVALUATION WILL BE CARRIED OUT ON FULL

Sr No	Description	Quantity	Make/Brand offered	Unit	Unit Price (PKR) Inclusive Of All Taxes Except PST	Unit Price (PKR) Inclusive of PST	Total Price (PKR) Inclusive of PST	Delivery Period Offered	deviation from Tender Spec. If Any
1	REPAIR OF CRUDE STORAGE TANK # 2, CAPACITY 6000 BBL'S	1		Number					

Special Note:- The prospective bidders also download the master set of Tender Document

- The prospective bidders may keep in touch with OGDCL web site for downloading the clarifications/amendments (if any) issued by OGDCL.
- DELIVERY AS PER CLAUSE NO.18 & PAYMENT TERMS AS PER CLAUSE NO.19 OF THE SCOPE OF WORK.BIDDER TO QUOTE RATE IN LUMP-SUM BASIS.ANY OTHER/FIXED COST (MOB/DE-MOB,INSTALLATION, COMMISSIONING ETC. (WILL NOT BE ENTERTAINED SEPARATELY. BIDDER TO QUOTE ACCORDINGLY).

Discount (if any) shall only be entertained on Schedule of Requirement of Bidding Document (Financial Proposal). If the discount is mentioned elsewhere in the bid, the same shall not be entertained.

SCOPE OF WORK:

1 SCOPE

The scope given hereunder describes for guideline purpose and covers the minimum requirement of repairing, painting, testing, calibration and supervision, inspection and commissioning (as described in relevant sections) of above ground cylindrical tank at the following OGDCL field.

6,000 BBLs Tank (Tank#2) at OGDCL Pasakhi (Tando Alam Oil Complex) near Hyderabad.

OGDCL intends to hire the services of an experienced and well reputed contractor for repair of Crude oil storages tank along with allied services. The scope of work includes the repair bottom, side walls, roof, structure associated fabrication work, testing/inspection, Calibration and commissioning of the crude storage Tank as detailed in specifications & attachments. Contractors to fulfill all the requirements of API 653 (Tanks Repair) and API 650 (Tank Construction) codes for this repair work up to complete satisfaction of third party inspector and OGDCL professionals.

2 CONTRACTORS' SCOPE (GENERAL).

The contractor shall be responsible for minimum but not limited to the following.

2.1 6,000 BBLs Tank # 2 at Pasakhi (TOC):

2.1.1 Installation/replacement of complete shell plates (course-6&7) having 5mm thickness of HR-275/235 grade of Pakistan Steel Mill.
2.1.2 Fabrication and welding of pipe and fitting for all required nozzles.
2.1.3 Installation/Fabrication of repair patches (2 no) as per API 653 at roof plate as per inspection report of tank.
2.1.4 Isolated pitting of 3mm on shell course at plate P-2/C-2 and P-5/C-2 which needs to build up with control deposition of weld followed by on surface method of MPI or DPT.
2.1.5 Installation/Fabrication of repair patches (4-5 no) on Bottom Plates as indicated in the attached inspection report.
2.1.6 Grinding marks on bottom plates to be build up with control deposition of weld material followed by MPI or DPT.
2.1.7 Reinforcement lining on the tank bottom to be applied which is currently dis-bond from bottom plate.
2.1.8 Replacement of wire rope of level gauge.
2.1.9 Weld seam reinforcement as indicated in the attached inspection report.
2.1.10 Welding inspections, radiography of joints etc. shall be done as defined in relevant section of this specifications/TOR.
2.1.11 Grouting/sealing of gaps between bottom annular plates/projection plates and foundation.
2.1.12 Application of missing mortar on the tank foundation.
2.1.13 FRP coating of (3 mm thickness min.) on bottom plates and shell plates upto 12 ft. height. Up to 12 ft. height tank structure shall also be FRP coated as defined in relevant sections of this specifications/TOR.
2.1.14 Epoxy coating and of tank internal, external and structure as defined in relevant section of this specifications/TOR.

2.1.15 Tank inspection, testing and calibrations as defined in relevant sections of this specifications/TOR.

2.1.16 All the required material regarding bottom, shell & roof plates, pipe, pipe fittings, coating/painting etc. and other allied equipment etc. is included in this scope of supply of contractor. The contractor is responsible for providing MTC's of supplied material with traceability.

2.1.17 The detail of damage and required repair works elaborated in the attached Tank inspection report along with pictures for review and understanding of scope of work.

2.1.18 The prospective bidder/contractor is welcomed for site visit before submission of bid in order to have better understanding of scope of work at its own expense and risk. Prospective bidder is required to inform OGDCL prior to visit so that location incharge should be informed accordingly.

2.1.19 OGDCL shall inspect the civil and mechanical repair works, construction schedule and progress reporting as per following details but not limited to.

2.2 **OGDCL Scope of Inspection:**

2.2.1 Material Identification through mill test certificates or through laboratory testing (if required)

2.2.2 Review / Witnessing of Procedure's qualification record and welder's qualification tests

2.2.3 Inspection Regarding the compaction of tank foundations, asphalt laying and associated civil works.

2.2.4 Inspection of other related civil works.

2.2.5 Inspection of roof, shell and bottom plates materials as per specification.

2.2.6 Inspection of welding consumables and to check the quality and suitability.

2.2.7 Inspection of Steel Structure assembly and welding.

2.2.8 Inspection of Nozzle Orientation.

2.2.9 Witnessing of DPT and Pneumatic Leak Test where necessary.

2.2.10 Inspection of quality of welding of bottom, shell and roof plates.

2.2.11 Witnessing of vacuum box testing of bottom weld joints.

2.2.12 Review results of radiography of horizontal, vertical and T-Joints of tank.

2.2.13 Stage inspections / hold points to be decided according to the Quality Inspection plan submitted by contractor.

2.2.14 Witnessing of Hydrostatic Testing.

2.2.15 Witnessing/inspection of internal & external coating.

2.2.16 Witnessing of calibration.

2.2.17 Overall responsibility for the excellent workmanship guaranteed through the above inspections.

2.3 **TANK SPECIFICATIONS 6,000 BBLTANK PASAKHI (TANK # 2).**

Type: vertical cylindrical type, Capacity: 6,000 BBLs

Size of the Tank: Dia. 40 ft., Height: 32 ft. (attached report sizes are incorrect)

Shell is butt welded while bottom is lap welded with side sump

Structure pattern:

Bottom: cone up

Roof: cone up

Sheet thickness

Roof	=	5 mm.
Bottom	=	9 mm
Shell	=	6 & 5 mm

3 CODES AND STANDARDS.

All the design, erection, testing & inspection must be as per following standards of oil & gas industry.

- API Standard 650
- API-653
- RP-651
- ASME Section IX
- ANSI B31.3 – Petroleum Refinery Piping
- PS 1020 or 1025 specification for carbon steel plate and profiles should be as per ASTM 283-C ASTM-A 106, Sch. 40 (For Seamless pipe.)

4 MATERIAL PROCUREMENT / HANDLING / STORAGE.

4.1 Bidder's responsibilities include procurement of material, transportation form manufacturer's site to the site store already established by the contractor.

4.2 The loading / un-loading of the material and shifting from site store to the site location shall be the responsibility of the contractor. OGDCL will not provide any sort of transportation / loading / un-loading facilities. If in case OGDCL provide such facility on contractor's request, that will be charged as per actual.

4.3 To determine the originality & authenticity of the material being used for this project, all material shall be 100% traceable and suitably marked for easy identification of manufacturer or supplier, grade, source, size and rating.

4.4 All foreign and local procured material shall be inspected by OGDCL engineer(s)& TPI. OGDCL inspection engineer(s) shall have full right to accept / reject any material / equipment.

4.5 The defected / sub-standard / rejected material not conforming to the OGDCL requirement will be replaced with the new one at bidder's account including transportation, handling demurrage etc.

4.6 The replaced material will be inspected once again and then be used by contractor after clearance form OGCL professional.

4.7 Hauling of plates and pipe shall not be allowed.

4.8 All material shall be kept / stored on wooden skids / platform. No. material shall be kept on ground.

4.9 Spreader bar shall be used for lifting plates

4.10 Contractor shall submit detailed procedure of material handling storage for approval to OGDCL before commencement of any work.

5 CONSTRUCTION AND INSTALLATION.

5.1 The bidder/contractor shall be aware of all safety standards and good engineering practices. The tank is situated in oil & gas fields in operation and there are nearby/adjacent crude oil storage tanks of similar nature.

5.2 Bidder/contractor shall follow the OGDCL safety policy while executing the job. Only the job shall be carried out after clearance by OGDCL safety incharge and relevant work permit.

5.3 The contractor is responsible to take care of all the necessary safety measures for doing the fabrication, installation and electrical jobs in the potential hazardous areas of oil & gas handling facilities both for the workers and machinery as per safety rules.

5.4 The bidder should be thoroughly familiar with the specifications of all the civil & mechanical works and shall ensure that all works are being completed in accordance with good industrial practice, relevant specifications and API standards. The

approved bidder must submit the detailed scope of work of each task during erection after approval of the design.

5.5 Contractor shall be responsible for all Civil, Fabrication, Inspection, Testing and Calibration jobs required for completing the project.

5.6 Contractor to do all civil work mentioned in scope of work.

5.7 The mechanical works are defined in Scope of work. Material handling, erection, construction, fabrication & welding of tank internals/externals, bottom, shell & roof are included but not limited to following. Contractor has to provide all the relative data of welding material & procedures to be used during project.

5.8 The contractor shall conduct welder's qualification test by any reputable 3rd party for this project according to ASME Section IX and API-650. The same shall be witnessed by OGDCL Engineer. Only the qualified welders will be allowed for welding jobs for this contract. Contractor Site Engineer must have the copies of the certificates of the welders all the time till completion of the project.

5.9 All the necessary test should be conducted regularly during the construction phase to maintain the quality of construction works (civil & mechanical) like soil compactness, cement strength, welding radiography physical inspection, hardness and other related tests.

5.10 The tank and pipes should be painted according to good industrial practice and specifications. After sand blasting a layer of primer coat must be done on the tank followed by other coats of good quality Epoxy Industrial paint as per specifications mentioned in the clause # 7 of this document.

5.11 The bottom and internal walls of tank should be painted to protect the internals against the corrosive effects of water.

5.12 The contractor is responsible for living arrangement of its manpower at his own account.

5.13 Contractor is responsible for providing all necessary machinery at site required for construction, fabrication, installation and material handling during the entire project schedule at his own account.

5.14 All lifting & handling equipments required for executing the tank repair job is the responsibility of contractor. i.e. crane, truck, fork lifters, jacks, scaffolding etc.

5.15 Fitness certificates of all the machinery required at site area must be available on site office of the contractor.

5.16 Company shall have right to inspect all equipment that shall be brought for work. Company has the right to reject any equipment it deems not fit for work. In that case contractor shall immediately remove and replace the equipment with no cost to the company.

5.17 If any damage occurred to any equipment due to miss handling, improper storage, wrong installation procedure etc. during the project, that damage shall have to be rectified by the contractor without any cost to OGDCL.

5.18 Contractor should take all safety measures before starting of each day job, including safety meeting, emergency response plan meeting necessary HC detection test before and during the process of any hot job or electrical works where the possibility of spark generation. All the necessary safety documents must be available at site / office of the contractors.

5.19 A Project Site incharge must be deputed by the contractor as the Incharge of all fabrication and construction activities for communication / correspondence with OGDCL site / project Incharge. The said professional must be supported by qualified supervisors for each job.

5.20 Bidder/contractor is required to provide the project team details and organization to OGDCL with its technical and financial proposal. Any change in organization and

person of project team must be intimated to OGDCL for information / approval as required.

6 COATING & PAINTING.

Before the final handover of the tank, the contractor would ensure the application of internal coating and external painting as per guidelines mentioned below. The acceptable vendor for the painting are ICI only.

6.1 External Protective Coating.

For Shell and Fixed Roof

1.	1 coat of zinc rich epoxy primer at	50 microns dft
2.	2 coat of iron oxide paint at per coat	100 microns dft
3.	1 coat of acrylic modified polyurethane at	50 microns dft
	Total dft 300 micron	

6.2 Internal Protective Coating

Floor and shell upto 12 feet height shell be coated with FRP coating @ 3mm thickness while all the above ceiling roof & shell must be coated as per following

i. One coat of red oxide 2 pack epoxy primer at 50 microns dft
ii. Profile all discontinuities with an epoxy putty
iii. Two coats of solvent free epoxy resin chopped strand mat coating.
iv. One coat of solvent free epoxy and surfacing tissue
v. One coat of solvent free epoxy sealer coat

Total dft 2.5 mm

7 INSPECTION, TESTING & COMMISSIONING.

7.1 Bidder is responsible to carry out all tests during construction and post construction phase ensuring the integrity and performance of Crude Oil Storage Tank. This should include:

i. Material inspection jointly with Reps. of Contractor and OGDCL prior to commencement of construction work.
ii. Compactness test for soil & sand filling of tank foundation.
iii. Welder qualification test.
iv. Radiography of weld joints of tank as per API-650
v. Radiography of weld joints of piping spools.
vi. Hydraulic and vacuum test of tank.

7.2 Prior to testing and commissioning. The Contractor shall submit detailed Testing & Commissioning Procedures as per codes of the area to be tested.

7.3 Any material or workmanship that does not meet the requirements of this engineering specification may be rejected.

7.4 Material Certificates of all material etc. proposed to use for the tank shall be witnessed.

7.5 Any defective material or works found after acceptance at the time of rolling, machining or during erection and testing of tank shall be replaced without charge even if it has been accepted previously.

7.6 Welding procedure specification shall be submitted for approval, prior o welding procedure qualification.

7.7 Welding procedure qualification and welder qualification tests shall be carried out in the test facility to be approved.

7.8 Butt welds shall be full penetration and fusion. Quality of shell welded joints shall be evidenced by radiographic inspection, as specified in API-650.

7.9 Extent of Radiography shall be as specified in API-650. Purchaser / Engineering Contractor at any time reserve the right to have any joint radiograph. All welds which

are unacceptable shall be repaired and retested through radiograph at contractors expenses.

7.10 All radiographic reports along with the films shall be submitted for approval.

7.11 Fillet welds inspection shall be visual. In case that visual inspection of Purchaser's / Engineering Contractor's inspector reveals poor welds, acceptance or rejection shall depends on sectioning of these welds as per API-650.

7.12 All tests be witnessed and approved by TPI & OGDCL official.

7.13 Surface preparation for painting shall have to be approved prior to the application of paint.

7.14 Inspection of fabrication and erection work shall not relieve the manufacturer of the responsibility to replace any inadequate material and to repair any poor workmanship found on site.

7.15 **Tank Bottom Testing.**

After welding the tank bottom, the welded joints shall be tested by means of vacuum chamber. Welding seams shall be brushed with soap suds, flax oil or other materials suitable to detect leakage.

7.16 **Tank Shell Testing**

After erection of the whole tank, all attachments and fixtures used for erection shall be removed and prior to connection to eternal piping the shell shall be tested by water filling.

- The tank shall be filled upto 2" (50 mm) above the top angle.
- All connections shall be blanked off.
- Filling rate shall not exceed 45m^3 / hour upto top shell lower edge. From top shell lower edge upwards filling rate shall not exceed to 30m^3 / hours.

The telltale holes shall be used to pneumatically test attachment welds on reinforcing pads. The telltale holes shall be plugged after hydro test with non-hardening sealant or grease.

7.17 **Tank Roof Testing.**

After the tank is finished, the welds of the roof shall be tested by an inner pressure which shall not exceed roof plate weight or by vacuum chamber applied on weld outer surface. Welding seams shall be lubricated with soap solution flax oil or other liquid suitable to tested leakage.

The contractor is responsible for tank calibration after successful completion of all tests by himself or through a reputed contractor. The calibration should be as per API 650, API 2555 and PI 2250 using physical measurement, strapping and optical reference methods. The calibration charts prepared by the calibration firm must be witnessed / attested by government authorities for authentication as per law. Calibration charts must be submitted to OGDCL after approval.

All material required (Like water pneumatic air etc.) for the testing would be arranged by the contractor at its own cost. It is not OGDCL responsibility.

7.18 **Inspection / Quality Plan**

Activity	OGDCL Inspection
Preproduction Meeting	H
Material Procurement	R
Heat Treatment Certificates	R
Mill Test Report	R
Material Inspection	H
Welding Procedure & Welder Qualification	H
Fabrication	M
Radiographic Testing	M
Welding Repairs	M

Hydrostatic Testing	H
Painting and Coating	H

Note:

H Hold point, inspection or testing shall not proceed without the presence of the purchaser's representative.

M Monitor point, notification to the purchaser's representative of impending inspection or test activity is required.

R Review documents, presentation of the specified.

8 MARKING.

All plates, reinforcements, access steel structures, etc. shall be marked as specification in the detailed engineering design.

Marking shall be stamped in an easily visible place, using a striking dye, after protective coating application (if specified).

Tank identification tag with capacity, service, dimension, treatment, and year of manufacturing with Contractor complete address to be affixed permanently.

9 WORK SCHEDULE & REPORTS.

After the award of contractor, a detailed kick-off meeting to discuss the reporting channels and work schedule for timely completion of the project will be held in the OGDCL. Contractor shall intimate its schedule accordingly.

10 PROGRESS REPORTS.

The contractor shall prepare and submit to the company daily and weekly progress report detailing all actions that have occurred in the preceding month and actions anticipated in the coming month, the detail should be included but not limited to;

- Work in progress in shape executive summary.
- Problem areas.
- Proposal remedial actions associated with shortfalls/problems areas.
- Outstanding matters
- All reports shall be submitted with OGDCL Engineer(s) signature as well.

11 FINAL INSPECTION & COMMISSIONING.

OGDCL would undertake its routine site monitoring for the progress and reserves the right to carry out the mutually agreed third party inspection. Moreover, calibration of tank; as per API certification requirement; is included in the contractor's scope of work.

12 EXPERIENCE.

The contractor who intends to participate in this project must have 7 years of fabrication and installation experience of above ground crude storage tanks. Further the contractor should submit a list of recent projects of similar nature carried out by him with brief scope of work, cost and completion duration along the technical portion of the bid, otherwise his bid shall not be considered for further evaluation.

In addition to above contractor should submit his PEC registration showing that the he can do the quoted work (financial limit) under this registration.

13 HIRING OF SERVICES.

In case Contractor hires the services of any activity for the project like designing, installation, fabrication, inspection etc. from other company. He must propose at least 03 Nos. of reputed companies at the time of submission of bids having at least 07 years relative experience. After approval of the bid no change regarding replacement of the sub-contractor can be made OGDCL would finally nominate one of the proposed sub-contractor.

14 REPAIRS.

All welding defects shall be brought to the Purchaser's / Engineering Contractor's knowledge and approval shall be obtained before repairing them.
All remedies must get approval of the Purchaser / Engineering Contract.

15 BOX-UP.

After testing and calibration, the tank shall be emptied and water disposed of as per instruction of Purchaser / Engineering Contractor. Tank shall be thoroughly cleaned internally and boxed-up, including mounting, fitting, fixing and bolting of all tank fittings and accessories provided by Purchaser such a valves, level gauge, etc. The cost of this work shall be considered included in the Contractor's rates for fabrication of tanks.

16 DELIVERY OF TANK.

Once the OGDCL has awarded the job, the contractor is required to complete the repair jobs and handover the tank in 60 days' time from the date of signing of Contract.

17 PAYMENT SCHEDULE.

Following is the payment schedule:

- 10% Mobilization Advance against bank guarantee.
- 30% payment after procurement of material and its successful inspection at site by OGDCL.
- 30% payment after completion of fabrication works (i.e bottom, roof, shell replacements, completion of nozzle works etc.) and successful inspection at site by OGDCL engineer.
- 30% payment after handing over the tank upon completion of job.

18 TECHNICAL EVALUATION CRITERIA.

Description	Total Marks	Criteria	Scores
Pakistan Engineering Council (PEC) Certification	20	C-5 or above C-6 Not	20 10 0
Experience for Construction of Above Ground Storage Tanks (Nos)	30	More than 15 Between 11-15 Between 5-10 Less than 5 Not	30 25 20 10 0
Performance Certificate from clients	20	More than 3 Between 1-3 Not	20 10 0
Five (05) year experience of tanks manufacturing	10	Provided Not	10 0
NTN Registration Certificate	10	Provided Not	10 0
Compliance of OGDCL SOW	10	Compliance Not	10 0
Total	100		
Qualifying Marks			70

Note: Bidder to provide relevant documentations for proof of his claims.