

**TERMS OF REFERENCE (TOR)**

**FOR**

**HIRING OF CATHODIC PROTECTION SYSTEMS  
INSPECTION AND CONSULTANCY SERVICES**



**TENDER ENQUIRY # PROC-SERVICES/CB/CORR-  
5350/2022**

**TERM OF REFERENCE (TOR)**  
**HIRING OF CP SYSTEM'S INSPECTION, MAINTENANCE, REHABILITATION,  
UP-GRADATION, INSTALLATION & CONSULTANCY SERVICES**

**1. Introduction**

- i. OGDCL, the largest Oil & Gas Exploring and Production Company in Pakistan intends to hire services of experienced and reputed CP contractor for hiring cathodic protection services at its various fields in all areas of the country to ensure external corrosion control of the installed assets.
- ii. The services shall be required on rate-running contract basis initially for a period of two years (to be extendable for one more year with mutual consent on same rates, terms and conditions) at all field locations where OGDCL carries its field operations.

**2. Purpose of Services**

- i. To hire reputable cathodic protection systems engineering & consultancy contractor with specialized experience and certified man-power for monitoring, special audit, inspection, repairs, maintenance, rehabilitation & up-gradation of already installed CP Systems and install new CP systems where ever and whenever needed / required at all OGDCL fields / processing plants for all type of assets such as well casings, pipelines, storage tanks and processing plant's under-ground piping network etc. and to provide consultancy services.
- ii. To ensure that installed CP Systems are efficiently and effectively working for proper protection of the assets as per NACE standards / recommended practices.
- iii. To enhance life expectancy of the installed CP Systems hence enhance working life of assets.

**3. Technical Job Responsibilities / Required Services.**

The prime responsibility and basic KPIs for successful bidder shall be that all CP Systems at the fields shall keep on working effectively by providing proper cathodic protection to the OGDCL assets to prevent external corrosion so that the assets shall be operationally available till their estimated life.

**3.2 CP System's Periodical Inspection, Audit and Monitoring Services**

The bidder shall be required to arrange periodical visits of their certified CP professionals for monitoring, inspection, audit, minor repairs, maintenance etc. of already installed CP Systems at OGDCL fields. This segment of services shall include minimum but not limited to following, therefore the successful bidder shall have to fulfill these requirements during each visit:-

- i. To physically check and monitor each active CP System including all its components, hardware etc.
- ii. To examine all components by taking readings to ensure effective performance of power source (es) and current control boxes.
- iii. Inspection of each anode's current output contribution placed in anode junction boxes. Also total current output of the anode ground bed (AGB).
- iv. Inspection / monitoring resistance of the anode ground bed.

- V. To check functioning of and ensure that all components / hardware of CP systems are working properly.
- VI. The over-all system is effectively providing required potential as per requirement.
- VII. Periodical, preventive & Routine repair & maintenance including following (*whatever the case may be*):
  - a. Cleaning of all components and hardware equipments.
  - b. Removing rust from components if any.
  - c. Check/change/replacement of TEG Filters.
  - d. Check & Change battery water, T/R Unit's oil, solar cards.
  - e. Change shunts/rheostats from already installed AJB / CCB if required.
  - f. All type of cable connections.
  - g. Proper dust removing from solar panels.
- VIII. All above activities shall be carried out under supervision of graduate or associate engineer in relevant field (ie mechanical, metallurgical, material sciences, chemical, corrosion) along with NACE CP Level-III (CP Technologist) certified professional having 7 years' experience as mentioned at clause 4.3 (iii).
- IX. After each visit the service contractor is required to prepare and submit a comprehensive report to the company encompassing findings and recommendations for better performance. The report shall be reviewed, endorsed and signing by professional mentioned at clause 4.2;
  - a. Bachelor in Engg. (Mechanical, Metallurgy, Material Sciences, Chemical or Corrosion engineering disciplines) along with NACE CP level-III or equivalent certification and minimum 10 Years' proven track record of CP related experience.
  - b. In case of Masters or above in (Mechanical, Metallurgy, Material Sciences, Chemical or Corrosion engineering disciplines) along with minimum 15 Years' proven track record of CP related experience, no CP certification required.

### **3.2 New CP Systems Installation Services**

- I. The CP contractor shall be required to install new CP System(s) at any OGDCL field / plant as per company requirement.
- II. The design parameters, material specifications, BOQ requirement shall be proposed and discussed on basis of available data and already designed CP Systems for that area before installation. The service contractor shall be required to provide inputs, endorsement of proposed design by his professional as per para 3.1 (ix) above.
- III. The installation activities shall be directly supervised by professional as mentioned at clause 4.3(iii) below.
- IV. For installing new CP System(s) major components (such as DC power source, anodes, cable, AJBs, CCBs, test posts, shunts, rheostats, splice kits, cad weld of the system) shall be provided by OGDCL. The other consumable items shall be contractor's responsibility.
- V. All civil works such as preparing anode ground beds (shallow, horizontal / vertical, or deep ground bed whatever the case may be) trenching, digging, back-filling,

welding, cable connections, proper concrete foundations for power source, AJBs and CCBs etc. shall be contractor's responsibility.

### **3.3 Rehabilitation and up-gradation services**

The successful bidder shall be required to provide services as part of rehabilitation and up-gradation of already installed CP Systems on as and when required basis at any of the fields. These services may include any or all of the following:

- I. Installation of individual Anode Junction Box(es), Anode Ground Bed(s), Current Control Box(es), Bond Box(es), Test Post(s) etc as per field's specific requirement. This activity shall include all cable installation / connections and foundation etc.
- II. Replacement of battery bank(s).
- III. Installation of additional anodes. This will include digging & cable connections / installation with AJB or CCB.
- IV. Replacement of Power source units on already installed CP System.
- V. Replacement of damaged cables will be included digging and connections.
- VI. For above-mentioned jobs / activities all civil works such as properly concrete foundation(s) for AJBs, CCBs, Bond Boxes, Test Posts etc, digging / trenching, back-filling, cable laying / installation & connections, welding / slicing etc shall be contractor's responsibility and will be included in above activities.

### **3.4 Call-Out Services on day rate basis**

- I. Contractor may also be required to provide experienced & NACE Certified professionals (engineers & technicians) at any field on call out basis for specific jobs as per company requirement on day-rate basis.
- II. The successful bidders shall also have to provide technical & operational expert opinion & consultancy services on any problem / issue regarding CP Systems with no additional cost.

### **3.5 Dismantling of installed CP System**

- I. The successful bidder may be required to provide services for dismantling of installed CP Systems where those are no more required or need to shift from one location to other location.
- II. It will be bidder's responsibility to dismantle the system very carefully to get maximum material recovery for re-use.
- III. All major components such as power source, AJBs, CCBs, shunts, rheostats, cables etc. to be checked for re-usability.
- IV. After dismantling, all material shall be transported to store / designated place by field engineer for proper stacking. The transport for material shifting from well / site to store shall be provided by OGDCL.

### **3.6 Soil Resistivity Survey**

- I. The contractor shall be required to conduct soil resistivity through winner – 4 – pin method or geonics for existing or new anode ground beds to determine number of anodes and current resistance of the soil etc.
- II. The contractor shall be required to conduct E-Log I tests as per requirement.

#### **4. Man-Power Requirement**

It is necessary for a responsive bidding company that they have required technical man-power / professionals available in country preferably of Pakistani origin (so as to move freely in all parts of the country to provide CP services on as and when required basis). The minimum technical man-power requirement is given below.

##### **4.1 Project Incharge / Manager**

- I. Shall be a key person having engineering degree with 15 years of experience for project management and full awareness of CP related job requirements.
- II. Shall carry full authority and complete responsibility for all project activities including technical, operational, financial, administrative, logistic & day-to-day other matters and communication / meetings to take issues with company.
- III. Shall be responsible for timely mobilization of the field team(s), submit reports, ensure quality of work, generate and follow-up invoices etc.

##### **4.2 Cathodic Protection Expert**

- I. The bidder shall have a CP expert on his payroll who shall be responsible to review all reports, findings, recommendations etc and put his / her sign on it as endorsement.
- II. Shall be required to provide technical guidance to field team(s) on rehabilitation / up-gradation, installation etc.
- III. Shall bear Bachelor Degree in Mechanical / Metallurgy / Material Sciences / Chemical / Corrosion + NACE Level –III or equivalent certification and 10 years relevant experience “OR” Masters or above degree in relevant field and more than 15 years.

##### **4.3 Field Team**

- I. The responsive / successful bidder is required to have a dedicated field Team on his payroll which shall be responsible to carry out all kinds of field activities assigned by the company through Project Incharge / Manager and under technical guidance of CP Expert.
- II. The field team shall consist of at least following professionals so as to meet operational requirements at 1 – 2 locations at a time.
- III. Two professionals bearing Bachelor Degree/Diploma Holder + NACE CP level – III or equivalent certification and 7 years CP related proven experience (CP inspection, audit, maintenance, rehabilitation, up-gradation). These professionals shall lead the field team(s) during all kind of activities.
- IV. At least four diploma or college certificate holders with hands on 3-5-year’s field / CP related job experience to assist the team leaders.
- V. Raw-handed helpers may be hired locally as per requirement with advice of concerned field management.

#### **5. Operational / Service Zones**

As described above the services shall be hired for inspection of one complete CP system. Approximately 230 CP systems are installed at below mentioned zone-wise OGDCL Fields

**i. South Zone.**

- a. Tando Alam Oil Complex including all its satellite sub-fields.
- b. Noor – Bagla field
- c. Sinjoro Field's including all its feeding wells.
- d. Kunnar / KPD-TAY Processing Facility with feeding wells.
- e. Bobo Oil Field wells, gathering facility, Processing Plant and storage tanks.

**ii. Center Zone**

- a. Uch – I, Uch – II wells & Processing Plant, sale gas line and delivery station at Uch Power Plant and all storage tanks.
- b. Qadir Pur Field's gathering facility, Processing Plant, storage tanks and its satellite wells Thal-East, Thal-West, Bhambhra and other up-coming well.
- c. Maru-Reti field's wells.

**iii. North Zone**

- a. Dakhni Field & Processing Plant.
- b. Nashpa Field, Processing Plant, feeding wells and storage tanks including Togh & Dhok Hussain sub-fields.
- c. Chanda and Mela Field, Processing Plant, feeding wells, transport line from Mela to Nashpa and storage tanks.
- d. Sadqal Field

**6. Contractor's General Responsibilities and Requirements.**

- I. The contractor shall be responsible to provide all services as described above at fields / processing plants on as and when required basis depending upon specific field requirements.
- II. For periodic field visit minimum three professionals including NACE CP Level-III with 7 year's relevant professional experience and 2 technicians with 3-5 years field / CP experience shall be deputed. In case any labour is required for civil works, it will be service contractor's responsibility to hire from local market at his own cost.
- III. The contractor's professionals shall ensure that all assigned systems are properly attended during each visit and minor repairs, maintenance as described above have been made accordingly and systems are working properly.
- IV. During visit the contractor's rep shall also check and report available CP Material and suggest spares for future need and same shall be mentioned in visit report.
- V. After every visit or job activity the contractor's professionals shall share collected data with concerned field manager. However, the final report duly endorsed by expert as mentioned above with his expert opinion mentioning all readings, flaws (if any), repairs / maintenance work done, suggestions / recommendations for improvement etc. shall be submitted to head office within 15 days after demobilization from the field.
- VI. Provision of transportation for mob-Demob of professionals to & from field and inside the field for CP jobs as per requirement shall be sole responsibility of contractor. However, transportation of material for new installation, dismantling shall be company's responsibility.

- VII. To provide proper PPEs, complete tool kit necessary equipped for inspection, monitoring, repair, maintenance, up-gradation, rehabilitation and installation etc. to meet above-mentioned requirement.
- VIII. After every job, the contractor's rep shall obtain Job Ticket / Work Completion Certificate duly signed by concerned field incharge to be presented with invoice for that particular job without which the invoice shall not be processed for payment.
- IX. OGDCL will provide boarding, lodging and messing facilities for professionals of the contractor at field facilities / camp.
- X. Regarding HSEQ, Safety & Security the contractor shall be required to strictly follow following. In case of any breach the field HSEQ officer may ask the contractor to halt the job and leave the site.
  - a. To follow Company's HSEQ & safety, security Policies.
  - b. All time coordinate field management's instructions / guidelines.
  - c. No professional of the contractor shall leave field / well or plant site without prior information to field management / coordinator.
  - d. All employees must wear proper PPEs with their company's logo.
  - e. Obtain proper work permits for specific jobs.
  - f. To follow timing for field mobilizations – after sunset mobilization is generally not allowed at most fields.

## **7. Invoicing Terms and Conditions**

The contractor shall be liable to submit invoice which shall be considered for processing for payment after following has been done

- I. The assigned work or segment of the work or any individual activity as per serial no. 3 is completed.
- II. Proper work completion certificate or job ticket duly signed and stamped by Field Manager or his nominee has been obtained and provided with invoice in original.
- III. The invoice may be for individual job for each field or different jobs / activities carried out at one field during invoicing month (as the case may be) on basis of unit rate given in financial bid / contract.
- IV. No LC shall be opened. Payment shall be made against cross checks against actual work done based on unit cost in equivalent Pak rupees on official exchange rate on day of payment.
- V. Proof of submission of provincial sale tax as per requirement.
- VI. Copy of contract showing unit costs.
- VII. Incomplete invoices shall not be entertained and be returned unpaid.

## **8. Duration of Contract:**

The services shall be required on rate-running contract basis initially for a period of two years (to be extendable for one more year with mutual consent on same rates, terms and conditions) at all field locations where OGDCL carries its field operations.

## 9. **Payment Terms**

- I. The bidder to quote rates in US\$ and should be fixed/firm and inclusive of all applicable taxes, duties and levies etc. except Provincial Sales Tax/ICT Tax on services.
- II. The payments to the service company will be made in 100% equivalent Pak rupees, at actual, against verified invoices at official exchange rate prevalent on the date of payment.

**(This clause will prevail instead of Master Tender document “ITB” clause # 07 ‘PAYMENT’).**

## 10. **BID BOND:**

Bid bond/Bid security amounting to US\$ 10,000/- (US Dollar Ten Thousand Only) is to be attached/provided with financial bid. Please see master set of tender document for further details.

## 11. **MODE OF PROCUREMENT:**

Bids against this tender are invited on “**Single Stage Two Envelope Bidding Procedure**” through press tendering, therefore, the bidders shall submit one original technical bid along with its soft copy and one original financial bid.

**Note:** The Master set of tender documents for services uploaded on OGDCL’s website ([www.ogdcl.com](http://www.ogdcl.com)) is the integral part of this TOR.



## **SUMMARY OF CP SYSTEMS INSTALLED AT FIELDS IN DIFFERENT REGIONS**

Sr.#	Field Name	No. of CPS	Remarks
<b>NORTH ZONE</b>			
1.	Nashpa, Togh & Dhok Hussain Field	13	Well casings, Flow lines, storage tanks and Plant piping
2.	Chanda / Mela Field	11	Flow lines & Storage Tanks
3.	Dakhni Field	10	Well casings, Flow Lines, Storage Tanks
4.	Sadqal Oil Field	01	For sale gas line
<b>Total of North Zone</b>		<b>35</b>	
<b>CENTER ZONE</b>			
1.	Uch Gas Field	36	Well Casings, Flow Lines & Storage Tanks
2.	Qadir Pur Gas Field	72	Well Casings, Flow Lines, Plant Piping and Storage Tanks
3.	Maru - Reti	02	For flow lines
<b>Total of Center Zone</b>		<b>110</b>	
<b>SOUTH ZONE</b>			
1.	Tando Alam Oil Complex	12	Flow Lines & Storage Tanks
2.	Noor – Bagla	1	Flow lines
3.	Sinjhorro Complex	22	Well casings, Flow Lines, Plant Piping and Storage Tanks
4.	Kunnar, KPD-TAY	45	Well casings, Flow Lines, Plant Piping and Storage Tanks
5.	Bobi Field	05	Well casings, sale gas line, water disposal well & Storage Tanks
<b>Total of South Zone</b>		<b>85</b>	
<b>Grand Total of all fields</b>		<b>230</b>	

## Technical Evaluation & Responsiveness Criteria

Following are **minimum mandatory requirements** for being technically responsive and to be considered further for financial bid evaluation.

<b>SNo.</b>	<b>Description of Requirements</b>	<b>OGDCL's requirement</b>	<b>Bidder to Provide</b>
<b>1.</b>	<b>Authentication of Company's Registration</b>		
1.1	<i>Registered Office in Pakistan. Foreign companies must have office in Pakistan or Joint-venture with local Company.</i>	<i>Full Address with all contact details</i>	<i>To be attached in technical bid</i>
1.2	<i>Registration of the company with SECP, FBR and related authorities as CP Services provider company.</i>	<i>Evidence of registration(s). (Foreign companies shall be exempted).</i>	<i>To be attached in technical bid</i>
1.3	<i>ISO Certified in CP Services &amp; other related jobs</i>	<i>Evidence of ISO certification</i>	<i>To be attached in technical bid</i>
<b>2.</b>	<b>Availability of relevant Technical Man-Power</b>		
2.1	<i>Project Manager / Incharge</i>	<i>As per clause 4.1</i>	<i>Proof of employment along with all certificates / experience to be provided</i>
2.2	<i>CP Expert (Min 2 professionals)</i>	<i>As per clause 4.2</i>	
2.3	<i>Field Team</i>	<i>As per clause 4.3</i>	
<b>3.</b>	<b>Relevant Experience</b>		
3.1	<i>Installation of complete Systems</i>	<i>Min 10 CP Systems</i>	<i>Evidence in shape of contract, Work completion certificates etc to be provided.</i>
3.2	<i>Rehabilitation &amp; up-gradation</i>	<i>Min 20 CP Systems</i>	
3.3	<i>Inspection, Audit &amp; Monitoring</i>	<i>Min 100 CP Systems</i>	
3.4	<i>Execution of similar Type rate-running contracts</i>	<i>Minimum 2 contracts of similar services</i>	

## FINANCIAL BID FORMAT

Contract shall be awarded on total complete package comprising of all from S No. 1 – 5. The bidders are required to submit their financial bids in following format only as no other format shall be acceptable, no hidden charges shall also be considered.

S.No.	Description	Unit Cost	Est'd Qty	Total Cost
<b>1.</b>	<b>Periodical Inspection, Audit and Monitoring Services</b>			
1.1	Periodical inspection, Audit, monitoring, maintenance and minor repairs of installed CP Systems in south zone fields	Per CP System	75x4x2= 600 **	
1.2	Periodical inspection, Audit, monitoring, maintenance and minor repairs of installed CP Systems in center zone fields	Per CP System	110x4x2= 880 **	
1.3	Periodical inspection, Audit, monitoring, maintenance and minor repairs of installed CP Systems in north zone fields	Per CP System	45x4x2= 360 **	
<b>Total of S No. 1</b>				
<b>2.</b>	<b>Complete New CP Systems Installation Services</b>			
2.1	Installation of complete new CP System in south zone fields with deep anode ground bed.	Lump Sum / System	09	
2.2	Installation of complete new CP System in south zone fields with shallow / horizontal AGB.	Lump Sum / System	01	
2.3	Installation of complete new CP System in Center zone fields with deep anode ground bed.	Lump Sum / System	03	
2.4	Installation of complete new CP System in center zone fields with shallow / horizontal AGB.	Lump Sum / System	02	
2.5	Installation of complete new CP System in north zone fields with deep anode ground bed.	Lump Sum / System	07	
2.6	Installation of complete new CP System in north zone fields with shallow / horizontal AGB.	Lump Sum / System	03	
<b>Total of S No. 2</b>				
<b>3.</b>	<b>Rehabilitation and up-gradation services</b>			
3.1	Installation of Vertical / Deep Anode ground bed	Per AGB	10	All cable installation & connections including
3.2	Installation of Shallow / Horizontal AGB	Per AGB	05	
3.3	Installation of AJB, CCB or Bond Box	per unit	15	
3.4	Installation of test posts	Per unit	25	
3.5	Replacement of DC power source	Per unit	05	
3.6	Replacement of battery banks	Per unit	05	
3.7	Replacement of or installing new cable	Per meter	10,000 Mtr	

3.8	Soil resistivity	Per AGB	20	
3.9	E-Log I Tests	Per well	20	
<b>Total of S No. 3</b>				
<b>4.</b>	<b>Dismantling of installed CP Systems</b>			
4.1	Dismantling of installed systems in south zone fields	Per unit	07	
4.2	Dismantling of installed systems in center zone fields	Per unit	05	
4.3	Dismantling of installed systems in north zone fields	Per unit	03	
<b>Total of S No. 4</b>				
<b>5.</b>	<b>Call Out Services</b>			
5.1	NACE CP-III certified Engineer's call out services	Per Day	30 days	
5.2	CP Technician's services	Per Day	60 days	
<b>Total of S No. 5</b>				
<b>GRAND TOTAL COST (Total of S No. 1 – 5)</b>				

\*\* = Considering each CP system to be inspected 4 times in a year (i.e after every 3 months period) and 8 times in two years.

**Note: Financial Evaluation shall be carried out on “Grand Total Cost” basis and Contract shall be awarded to lowest evaluated bidder.**