



GUJARAT GAS



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**TECHNICAL SCOPE
FOR COMPREHENSIVE TYPE ANNUAL MAINTENANCE CONTRACT
FOR AIR COMPRESSOR & AIR INFLATORS**

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00	Technical Scope for comprehensive type annual maintenance contract for air compressor & air inflators	

NAME OF COMPANY	GUJARAT GAS LTD.		
	NAME		SIGN & DATE
Prepared By			
Approved by			

1. INTRODUCTION

Gujarat Gas Ltd, a Group Company of Gujarat State Petroleum Corporation Ltd., (State Government undertaking), is in business of distribution Natural Gas to Industrial/Commercial/Non-Commercial/Domestic Customers and CNG Stations in various cities across Gujarat and outside Gujarat.

2. DEFINATIONS/GLOSSARY

CLAIMS	shall mean claims, liens, judgments, penalties, awards, remedies, debts, liabilities, damages, demands, costs, losses, expenses or causes of action of whatever nature, including, without limitation, those made or enjoyed by dependents, heirs, claimants, executors, administrators, successors, survivors or assigns.
OWNER or GGL or COMPANY	shall mean Gujarat Gas Limited, a company incorporated under the Companies Act, 1956 and having its registered office at Block no.15, 3rd floor, Udhog Bhavan, Sector 11, Gandhinagar – 382 011 and more particularly specified in the CONTRACT, and shall include its successors and assignees.
OWNER'S REPRESENTATIVE or CONTRACT OWNER	Shall mean the person appointed from time to time by the OWNER and notified in writing to the BIDDER/SERVICE PROVIDER to act as the OWNER'S REPRESENTATIVE for the purpose of the CONTRACT or in absence of such notification, the OWNER.
BIDDER/SERVICE PROVIDER	Shall means the person, firm or company specified and entering into the Contract with the Owner and its or their legal personal representatives, successors and permitted assigns
SPECIFICATION	shall mean all directions, Various technical specifications, provisions, land requirements attached and referred to in contract documents which pertain to the method and manner of performing the work or works, to the quantities and qualities of the work or works and the materials to be furnished under the contract for the work or works, as may be amplified or modified by the OWNER or Engineer –In- Charge during the performance of the contract in order to provide the unforeseen conditions or in the best interests of the works or works. It shall also be include the latest edition of relevant Indian Standard Specifications and code including all addenda/corrigenda published before acceptance of bid.
WORKING DAY	Means any day which is not declared to be holiday or rest day by the OWNER.
APPROVED	Shall mean approved in writing including subsequent written confirmation of previous verbal approval and "APPROVAL" means approval in writing including aforesaid.

MOBILIZATION	Shall mean the mobilization of equipments, tools, tackles, spares, consumables, manpower etc.
BIDDER/SERVICE PROVIDER'S REPRESENTATIVE	Shall mean person appointed from time to time by the BIDDER/SERVICE PROVIDER and notified in writing to act as its REPRESENTATIVE for the purposes of CONTRACT or in default of such notification the BIDDER/SERVICE PROVIDER.
SITE	Means the area or areas on which the SERVICES are to be executed or carried out and any other places provided by OWNER for the purpose of the CONTRACT.
GGL EIC	Gujarat Gas Company 's Engineer In Charge
CNG	Compressed Natural Gas
OEM	Original Equipment Manufacturer
NABL	National Accreditation Board for Testing and Calibration Laboratories
BDT	Break Down Time
O&M	Operation And Maintenance
AOMP	Annual Operation and Maintenance Plan
UPS	Uninterrupted Power Supply
MIS	Management Information System
DPR	Daily Progress Report
PLC	Programmable Logic Controller
MMI	Man Machine Interface
PPE	Personal protective Equipments
PTW	Permit To Work
SLA	Service Level Agreement
DG	Diesel Generator
WA	Work Authorisation
SMT	Senior Management Team
ASTM	American Society for Testing and Materials, is an international standards organization that develops and publishes voluntary consensus technical standards for a wide range of materials, products, systems, and services.
ASME	American Society of Mechanical Engineers (ASME) is a professional association that promotes the art, science, and practice of multidisciplinary

engineering and allied sciences around the globe via continuing education, training and professional development, codes and standards, research, conferences and publications, government relations, and other forms of outreach.

CCoE / PESO	The Government of India's Petroleum and Explosives Safety Organization (PESO) Chief Controller of Explosives (CCOE) issues approvals to products for hazardous environments that conform to Indian standards
NZS	New Zealand Standard
ANSI	American National Standards Institute
NFPA	National Fire Protection Association
OISD	Oil Industry Safety Directorate

3. BIDDER/SERVICE PROVIDER'S SCOPE OF WORK

A) General:

- 3.1 The scope/specification covers the minimum specified requirement for the various activities to be carried out by the Bidder/Service Provider toward the maintenance and related work of air compressor & air inflator installed at CNG stations across GGL.
- 3.2 Bidder/Service Provider shall, with due care & diligence, execute the work in compliance with all laws, by laws, ordinances, regulation etc. and provide all services and labour inclusive of supervision thereof.
- 3.3 All the materials, equipment, appliances or other things of whatsoever nature required in or about the execution of the work, whether of temporary or permanent nature shall be provided by the Bidder/Service Provider.
- 3.4 Before starting of work at site, Bidder/Service Provider shall himself be familiarized for the work given by owner for which approval/clearance is obtained from Owner.
- 3.5 Without limiting the generality thereon, Bidder/Service Provider shall do all work necessary at each of the job which is complete in all respect with site restoration.

B) Specific Terms & Conditions:

- 3.6 Bidder/Service Provider shall carry out Comprehensive type Preventive and Breakdown Maintenance of Air Compressors and Air Inflators installed at Owner CNG Stations across GGL.
- 3.7 Bidder/Service Provider shall follow the instruction in OEM manual for all type of preventive Maintenance activity of Air Compressor and Inflators.
- 3.8 The indicative list of Preventive maintenance activity are mentioned below.

3.9 Quarterly Preventive Maintenance of Air Inflator

Bidder/Service Provider shall carry out following indicative maintenance activities needs to be carried but not limited to Quarterly Preventive Maintenance cum Inspection of Air Inflators, Running hours based maintenance etc.

- a. Cleaning of Air Filter, Tubings, Piping's, Contacts, equipment etc.
- b. Check condition of Mechanical, Electrical and Electronics Components of Equipment.

- c. Checking Tightness of Joints for Air Leakage in Equipment as well as GI Pipe between Air Compressor and Inflator.
- d. Removal of Rusting on Parts or Bolts by applying Rusting Protection Solvents.
- e. Check functioning of Equipment gauges and repair/replace if required.
- f. Replacement of Filling Valve (Plunger Set).

3.10 Quarterly Preventive Maintenance of Air Compressor

Bidder/Service Provider shall carry out following activity during Quarterly Preventive Maintenance cum Inspection of Air Compressors

- a. Proper Cleaning of Air Compressor External Parts like Air Filter, Motor, Switch Boards, Belt Guard and Others.
- b. Check functioning of Mechanical, Electrical, & electronic parts and repair/replace it if required.
- c. Check motor belt alignment and condition of belt guard.
- d. Check condition of SRV and functional testing of SRV as per the recommended practice..

3.11 Yearly Preventive Maintenance of Air Inflator

Bidder/Service Provider shall carry out following activity during Yearly Preventive Maintenance cum Inspection of Air Inflators

- a. Cleaning of Tubings, Piping's, Contacts, equipment etc.
- b. Replacement of air filter.
- c. Check condition of Mechanical, Electrical and Electronics Components of Equipment
- d. Checking Tightness of Joints for Air Leakage in Equipment as well as GI Pipe between Air Compressor and Inflator.
- e. Removal of Rusting on Parts or Bolts by applying proper rusting Protection Solvents.
- f. Check for Calibration of Equipment Gauges and ensure the gauges and instruments are getting calibrated as per the GGL AOMP. Submission of Calibration report of the instrument and gauges.
- g. Replacement of Filling Valve (Plunger Set),
- h. Painting Work of GI Piping & Rusted Parts of Air Inflator after making proper rough surface with two Coats of Red Oxide and Three Coats of Finished Paint.

3.12 Yearly Preventive Maintenance of Air Compressor

Bidder/Service Provider shall carry out following activity during Yearly Preventive Maintenance cum Inspection of Air Compressors

- a. Proper Cleaning of Air Compressor External Parts like Air Filter, Motor, Switch Boards, Belt Guard and Others.
- b. Proper Cleaning of all suction & discharge Valve assembly
- c. Inspection of Piston rings & Wear ring and replacement of the same if required
- d. Checking of Oil rings, Ring & Spring packing set
- e. Inspection of crankshaft, connecting rod, cylinder etc.
- f. Checking functioning of Mechanical, Electrical & Electronics parts and repair/replace them, if required

- g. Check of motor belt alignment and condition of belt guard.
 - h. Check for Calibration of SRV (Safety relief valve) as per the AOMP of GGL.
 - i. Crank Case cleaning by Proper Solvent to Remove Fouling of Oil and Dust.
 - j. Gasket Set and Air filter Replacement.
 - k. Oil replacement.
 - l. Painting of rusted parts with 2 coats of red oxide and 3 coats of finish paint.
- 3.13 Bidder/Service Provider shall carry out complete Overhauling of Air Compressors & Air Inflators once in a year as per OEM Manual/Recommendation.
- 3.14 Carry out calibration of pressure gauge as per OEM recommendation and AOMP of GGL and report to be submitted to Owner before starting of job.
- 3.15 All safety relief valves shall also be functionally tested and calibrated every year including replacement with new one if required.
- Service Provider shall provide Calibration Certificate for SRV tested as per SMPV rules to be certified by competent authority certified under Factories act 1948.
- 3.16 Bidder/Service Provider shall carryout necessary testing required for pressure vessels as per requirement of Factory act i.e. once in a year.
- Bidder shall ensure that this assessment is carried out by certified and competent personnel – ASNT Level-II as minimum and reviewed/approved by ASNT Level-III as deemed necessary, - Competent Authority authorized by Inspector.
- 3.17 Bidder/Service Provider shall provide services for attending Emergency/Breakdown services 24 x7 at no extra cost. The services shall be extended over the period of contract.
- 3.18 Bidder/Service Provider shall attend breakdown calls and rectify the same within 48 hours.
- 3.19 Bidder/Service Provider shall supply all the necessary consumables, spares, piping and housings for both Air Compressor and Inflator.
- 3.20 Bidder/Service Provider shall provide any technical assistance by any mode of communication to Owner for immediate solution.
- 3.21 Before replacing any defective part, Bidder/Service Provider shall inform the company Site In charge and get the prior approval.
- 3.22 Bidder/Service Provider shall ensure certification of the inward material from Owner engineer in charge before usage
- 3.23 Bidder/Service Provider shall be responsible to submit the removed/scrap materials to Owner designated CNG Stations/Locations/ware house as decided on case to case basis as per instruction given by Owner Engineer in Charge
- 3.24 Bidder/Service Provider shall ensure that all parts/spares are available in his warehouse/stores.
- 3.25 For replacement of any spare, Bidder/Service Provider shall enter into Agreement with the original equipment manufacturers (OEM)/ supplier and copy of this agreement shall be furnished to the Owner for their reference.
- 3.26 Bidder/Service Provider shall ensure that all the Air Compressors & Air Inflators are in working condition at the time of expiry or termination of contract.
- 3.27 All the observations needs to be closed at no extra cost before handing over of the Equipment to GGL.
- 3.28 Bidder/Service Provider shall maintained equipment wise history card and updates all records of service & maintenance. After updating of History Card, Bidder/Service Provider shall take the signature of responsible person of Owner.
- 3.29 Bidder/Service Provider shall perform all activities during inspection/maintenance & functional check of Air Compressors & Air Inflators and also provide fitness certificate to Owner Engineer in charge.

- 3.30 Bidder/Service Provider shall carry out work with safe operating practices suggested by Owner & OEM.
- 3.31 Bidder/Service Provider shall ensure normal operation of instruments after servicing/maintenance.
- 3.32 Any repetitive failure of certain part in the Air Compressors & Air Inflators Installed at Owner CNG Stations across GGL; Bidder/Service Provider shall provide RCA for the same and submit the report for the remedial actions to the owners engineer.
- 3.33 Bidder/Service Provider shall provide any additional service that may be required, using the expertise and technology of OEM services and should provide a detailed inspection report with no additional cost to Owner.
- 3.34 Bidder/Service Provider shall take due care of Owner's equipment. Bidder/Service Provider shall be responsible for any damage to GGL equipment during execution of job
- 3.35 The Duty hours of the Bidder/Service Providers representative shall start only after arrival at Owner site/station and same has been reported / recorded in visitors / LOG Book kept at station. The duty hours shall end at the station when the Bidder/Service Provider Representative leaves the station post Job Completion OR handing over responsibility to Reliever.

3.36 Penalty Terms

Sr. No.	Service Level Agreement	Penalty & Frequency (Per Scanner)
1	Not Attending breakdown within 48 hours from the time that is recorded in log sheet/ complaint book or email communication from owner.	INR 500/day
2	Unsafe Practice, Unsafe Behaviour, Not wearing PPE	INR 200/- per instance

*The Cumulative Penalty per year shall be limited to maximum 50% of the Contract Value.

C) Permits & Authorizations:

- 3.37 Bidder/Service Provider shall apply and obtain all necessary permits for inspection and related work to be performed. After completion of work a joint inspection shall be done at work place.
- 3.38 For any work covered under company's work permit system, as informed by the engineer in charge, the Bidder/Service Provider shall collect the work permit or extension of work permit from engineer in charge at Owner's office. Cost for execution of work entrusted to him.
- 3.39 Bidder/Service Provider shall carry out the work normally within the official duty hours of Company. The Concerned Supervisor must ratify any deviation from the normal working hours. No Work shall be carried out without permission of Company representative beyond the official duty hours.
- 3.40 Bidder/Service Provider's Representative should not be without Identity Card at Owner sites & office. I-Card shall be provided by Bidder/Service Provider.
- 3.41 Bidder/Service Provider shall depute competent manpower at site. Owner will provide basic training for the same. Bidder/Service Provider shall commence the work only after receiving of Safety Training & Safety Passport (if Applicable).
- 3.42 Before Starting of Job, Bidder/Service Provider shall Conduct Tool Box talks with all involved manpower at each location for each activity and maintains record.

D) HSE Guidelines:

- 3.43 Bidder/Service Provider shall ensure that all tools, appliances, machines or other equipment, are in safe working condition at all times and comply with current regulations.
- 3.44 All activities shall be carried out as per Owner documented procedure.
- 3.45 Bidder/Service Provider shall observe all prevailing HSE norms & labour laws applicable to them during the period of contract.
- 3.46 Bidder/Service Provider shall fully conform to the safety work permit system of Owner and shall submit various safety-related reports e.g. Near Miss Report, Hazard Report etc. as advised by Owner.
- 3.47 Bidder/Service Provider shall ensure that all the equipments & safety devices are inspected & certified by competent person & are suitable for use.
- 3.48 Bidder/Service Provider shall ensure that all accident, incident, injuries shall be reported promptly to Owner.
- 3.49 Proper Handling of the Material while execution of any Maintenance activity.

E) General Condition of Contract:

- 3.50 Transportation charges will not be paid extra, the rates agreed in the contracts shall be including the transportation charges.
- 3.51 Bidder/Service Provider shall provide mobile phone to their staff for effective communication from station/site to Owner office can be done effectively.
- 3.52 Any communication between Authorized representative & Bidder/Service Providers representative shall be considered as legally binding communication.
- 3.53 All persons engaged by the Bidder/Service Provider shall be the Bidder/Service Provider's own employee and they will claim no privileges from Owner. The Bidder/Service Provider will directly be responsible for the administration of his employee as regard general discipline and courteous behavior.
- 3.54 Communication to Owner as per contingency plan in case of any accident during inspection.
- 3.55 In case of any hazard like fire, leakage etc. due to gross negligence of the Bidder/Service Provider, Owner reserves the right to impose penalty up to actual damage cost and or termination of Work Order depending upon the gravity of the situation.
- 3.56 While carrying out the job all deputed persons shall follow safety rules & regulation of Owner.
- 3.57 Bidder/Service Provider shall ensure to comply with the other guidelines for site management and medical emergency, released by Owner time and again as per Contract Management Process / System
- 3.58 If the works are not done as per Owner Satisfaction level then Bidder/Service Provider shall do the necessary rework at his own cost.
- 3.59 Bidder/Service Provider shall notify the Owner Engineer nominated about all the activities planned for the day through an email/ fax along with the Progress Report. The Bidder/Service Provider shall not commence any works on any given day without intimating the Engineer the location where the Works are to be executed for that particular day.
- 3.60 Emergency Response Plan
In case of any injury or an accident at the site, the Bidder/Service Provider shall immediately inform the site in-charge and further take immediate steps to take the injured person(s) to any of the Owner nominated hospitals. The payments for such hospitalization and treatment shall be initially borne by Owner and shall be subsequently recovered from the Running Bills of the Bidder/Service Provider.

4. OWNER'S SCOPE OF SUPPLY

- 4.1 Owner shall handover Air Compressors & Air Inflators for Maintenance Purpose.

- 4.2 Owner shall provide work permit for execution of job.
- 4.3 Owner will provide Safety & Technical Assistance as and when required.
- 4.4 Owner will inform Bidder/Service Provider about Risk Associated with the job & it's Control Measure.
- 4.5 Owner's Representative will witness the entire job.
- 4.6 Owner shall provide necessary site clearance / approval for carrying out the job.

5. EQUIPMENT DETAILS

This document is intended for all types of Air compressor & Air Inflator installed at CNG stations across GGL.

Work shall be carried out as per OEM Manual, Safe Engineering Practice & Requirement of Owner Engineer in Charge.

Technical Specifications of Air Inflator

- ❖ Make: Sunrise, Protech or any other make approved by GGL.
- ❖ Air Inflator with floor mounting stands
- ❖ Range: 0-150 PSI or 0.07 Kg/cm²
- ❖ Accuracy +/- 1 PSI
- ❖ Display 2X 3 digits super bright LCD display.
- ❖ [1] Actual tyre pressure. [2] Set pressure. [3] Vehicle selection for front & rear tyre Pressure. [4] At least 7 Mtrs. Long double braided nylon tubing with nozzle at one end. [5] Pipeline from instrument to compressor as per site requirement. [6] Increment/Decrement switches for KG/cm² [7] Cabinet as per IP 65

Technical Specifications of Air Compressor

- ❖ Make: Sunirise, Dint-Tech, Ingersoll Rand or any other make approved by GGL.
- ❖ Air Compressor Motor 3 HP
- ❖ Flow rate 6.77cfm
- ❖ Max working pressure 10 Kgs/cm²
- ❖ Supply 420 Volts
- ❖ 3 Phase , 50 Hz
- ❖ 160 Liter tank capacity
- ❖ Reputed make Motor starter