

**TEXAS PUBLICATION FOR BID
LIQUIFIED PETROLEUM GAS (LPG) (PROPANE)**

SCOPE:

This document defines the minimum technical specifications and functional criteria to upgrade existing propane refueling infrastructure, or install new refueling infrastructure. It is also noted that the Customer County does not accept any liabilities within this publication/bid specification when it is used in the procurement process by any other entity.

Equipment supplied must meet all Texas Railroad Commission (RRC) and American Recovery and Reinvestment ACT (ARRA) grant requirements including but not limited to the following:

1. Domestic content: Under Section 1605 of the ARRA, no funds appropriated by the Act may be used for a public buildings/works project unless “all iron, steel and manufactured goods used... are produced in the U.S.”
2. Prevailing wage: “Any laborers and mechanics employed by contractors or subcontractors on construction, modernization, renovation, or repair projects assisted in whole or in part with ARRA funds must be paid in accordance with the prevailing wage requirements as determined by the Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40 of the United States Code (commonly called “Davis-Bacon and related acts”). (See also 20 U.S.C. 1232b Labor Standards and Section 1606 of the ARRA.)

Contracts must include language that acknowledges that all contractors or subcontractors must pay laborers and mechanics employed under the contract no less than the locally prevailing wages for corresponding work on similar projects in the area. The Davis-Bacon Act directs the U.S. Department of Labor (DOL) to determine such locally prevailing wage rates. Contractor must file weekly payroll records on the attached or equivalent form documenting compliance.

Vendor will provide bid for labor, equipment, installation and commissioning for new propane refueling installations and for upgrades to existing propane refueling stations, including but not limited to the following configurations. (Note: Purchaser to provide site preparation including piping and electrical to the site).

- 1) New Installation of 2000 gallon vertical tank skid package
 - Clean Fuel Technologies Pro Series Dispenser or equivalent
 - Electronic fuel management system to tie into current customer system
 - Incidental site preparation not to exceed \$4,800
 - Safety protection as specified (see technical specifications)
 - Testing / Regulatory compliance, including filing of all required forms and permits; and assuring final inspection of completed infrastructure by the Railroad Commission of Texas
 - GG20 3/4 in- Gasgard Nozzle or equivalent

- 2) New Installation of 2000 gallon horizontal tank skid package
 - Clean Fuel Technologies Pro Series Dispenser or equivalent
 - Electronic Fuel Management to tie into current customer system
 - Incidental site preparation not to exceed not to exceed \$4,800
 - Safety protection as specified (see technical specifications)
 - Testing / Regulatory compliance, including filing of all required forms and permits; and assuring final inspection of completed infrastructure by the Railroad Commission of Texas
 - GG20 3/4 in- Gasgard Nozzle or equivalent

- 3) New Installation of 10,000 - 12,000 gallon water capacity Tank
 - Piers/saddles
 - Site engineering/miscellaneous site prep not to exceed not to exceed \$4,800
 - Equipment rental
 - Concrete pad site work
 - Two Clean Fuel Technologies Pro Series Dispensers or equivalent
 - Electronic fuel management system to tie into current customer system
 - Safety protection as specified (see technical specifications)
 - Testing / Regulatory compliance, including filing of all required forms and permits; and assuring final inspection of completed infrastructure by the Railroad Commission of Texas
 - GG20 3/4 in- Gasgard Nozzle or equivalent

- 4) New Installation of 30,000 gallon water capacity Tank
 - Piers/saddles
 - Site engineering/miscellaneous site prep not to exceed not to exceed \$4,800
 - Equipment rental
 - Concrete pad site work
 - Two Clean Fuel Technologies Pro Series Dispensers or equivalent
 - Electronic fuel management system to tie into current customer system
 - Safety protection as specified (see technical specifications)
 - Testing / Regulatory compliance, including filing of all required forms and permits; and assuring final inspection of completed infrastructure by the Railroad Commission of Texas
 - GG20 3/4 in- Gasgard Nozzle or equivalent

- 5) Upgrade of Existing Propane Refueling Station Option 1
 - Clean Fuel Technologies Pro Series Dispenser or equivalent
 - Electronic fuel management system to tie into current customer system
 - Upgrade existing control hydraulics & Pneumatics (Assumes replacement of internal valves, actuators, control solenoids, tubing, etc)
 - GG20 3/4 in- Gasgard Nozzle or equivalent
 - LPG pump FF 150 Corken Pump or equivalent

- B166-CAU bypass valve or equivalent
- pump and motor frame FF150 - 7.5hp or equivalent
- electric motor 7.5 hp/three-phase/3450 rpms/explosion-proof
- new piping/dispenser
- Misc. parts / new flange, gaskets, seal outlets
- Incidental site preparation not to exceed not to exceed \$4,800
- Safety protection as specified (see technical specifications)
- Testing / Regulatory compliance, including filing of all required forms and permits; and assuring final inspection of completed infrastructure by the Railroad Commission of Texas

GENERAL CLAUSES AND CONDITIONS

1. The equipment furnished under this specification shall be the latest model in current production, as offered to commercial trade. The respondent represents that all equipment offered under this specification is in good working order and shall be in compliance with the current Railroad Commission of Texas (RRC Liquefied Petroleum Gas (LPG) Safety Rules and National Fire Protection Association (NFPA-58) safety codes, and other Federal, State & local Codes or regulations as RRC (UL, NEC, NIST, Etc.).
2. Respondent should submit with the solicitation the latest printed literature and detailed specifications of the equipment the respondent proposes to furnish and must meet the requirements as listed in this specification.
3. All equipment within the specification shall be completely assembled (may be in modular form) and ready for installation and continuous operation upon delivery.
4. All parts required for a turnkey operation of vehicle fueling station shall be furnished by the respondent and conform in strength, quality and workmanship to the accepted standards of the industry.
5. The equipment shall meet or exceed all federal and state of Texas safety, health, lighting and noise regulations and standards in effect at time of manufacture.
6. It is the intent to ensure the purchase of goods, equipment and services having the least adverse environmental impact, within the constraints of statutory purchasing requirements. Suggested changes and environmental enhancements for possible inclusion in future revisions of this specification are encouraged.

TECHNICAL SPECIFICATIONS

FUELING STATION SYSTEM

1. Fuel Storage & Pumping System

- 1.1 Only aboveground, ASME containers may be used for propane storage.
- 1.2 Horizontal aboveground ASME containers shall be placed on masonry or other noncombustible structural supports located on concrete or masonry foundations in accordance with NFPA 58 (2008 Edition).
- 1.3 Vertical ASME containers shall be installed on reinforced concrete or steel structural supports on reinforced concrete foundations designed to meet the loading provisions in NFPA 58 (2008 Edition).
- 1.4 The station pumping system shall have a design capacity of 18 gallons per minute, and be capable of delivering a minimum flow rate of 10 gallons per minute, through each hose in the system as specified, with a minimum differential pressure of 125 PSI, when all hoses are operating simultaneously.
 - 1.4.1 Vertical or horizontal tank depending on location and plot size restrictions
 - 1.4.2 The tank shall be an ASME Propane tank, 250 psi working pressure, of sufficient size as determined by number of vehicles in the fleet and estimated weekly/monthly fueling requirements. The tank shall be new production and be specifically designed for propane fueling station service and shall have the following minimum design criteria:
 - 1.4.2.1 Tank will be fitted with
 - 1.4.2.1.1 A minimum of 3 bottom openings in the tank, minimum 1-1/4" NPT, 2 for vapor service, 1 for liquid service
 - 1.4.2.1.2 Pressure relief valve with fully internal spring design. (Number of valves, size, and flow/discharge rate as RRC to tank design in accordance with NFPA 58 and RRC rules.)
 - 1.4.2.1.3 One 1 1/4" NPT X 1 3/4" ACME fill valve (preferred mounted on side of tank for ease of access, and within a protective guard for protection from impact.)
 - 1.4.2.1.4 Fixed maximum liquid level gauge (80% bleeder) (preferred mounted on side of tank for ease of access, and within a protective guard for protection from impact) 1" NPT mechanical float level gauge and mounted on side of tank for ease of access, and within a protective guard for protection from impact.
 - 1.4.2.1.4.1 In the case of a vertical tank 2 float level gauges are required
 - 1.4.2.1.5 Minimum 1 1/4" liquid pump supply (liquid port) with internal valve, pneumatic operated, auto open/close controlled by dispenser.
 - 1.4.2.1.6 Minimum 1 1/4" vapor pump bypass return (vapor port) with internal valve pneumatic operated, auto open/close controlled by dispenser.

- 1.4.2.1.7 Minimum 1 ¼” meter vapor return (vapor port) with internal valve pneumatically operated, auto open/close controlled by dispenser is preferred.
- 1.4.2.1.8 Pneumatically controlled internal valves shall be Fisher model C407 series or equivalent and installed in accordance with manufacturer’s recommendations
- 1.4.2.1.9 Pneumatic control actuators for internal valves shall be Fisher P389 or equivalent and installed in accordance with manufacturer’s recommendations.
- 1.4.2.1.10 Use of “multivalves” or “combination” valves for pumping system operation shall not be accepted.
- 1.4.2.1.11 Pneumatically operated valves shall be connected with thermally sacrificial tubing, which is environmentally and UV rated (minimum 5 years life) for the application, and rated of continuous use with the product selected for valve. actuation (compressed air, nitrogen or tank propane vapor).
- 1.4.2.1.12 Pneumatically controlled valves and control system shall be designed to accommodate operation with a cylinder of compressed, dried nitrogen, but may be operated by local compressed air (filtered and dried), at the customer’s discretion. Nitrogen and gauge regulator set, or dried and filter compressed air, shall be the responsibility of the customer.
- 1.4.2.1.13 Pneumatic control system shall be designed to operate at ambient temperatures of -20o to + 125oF.
- 1.4.2.1.14 Systems using propane tank vapor pressure to operate pneumatically controlled valves are permissible instead of 1.4.2.1.12.
- 1.4.3 Piping will be schedule 80 threaded steel and black iron meeting standards specified in NFPA 58, painted or otherwise protected to prevent corrosion. Use of flanged connections or welded pipe, if assembled and installed in accordance with NFPA 58 and RRC rules and regulations will be acceptable
- 1.4.4 Pump supply piping shall be a minimum of 1-1/4” NPT from the tank internal valve to the pump inlet
- 1.4.5 Pump bypass return piping shall be a minimum of ¾” NPT from the bypass valve to the tank internal valve. Dispenser meter vapor return piping shall be a minimum of ¾” NPT from the meter vapor return outlet connection fittings/tubing, to the tank internal valve
- 1.4.6 All piping shall be marked to indicate liquid or vapor service and direction of flow. Red arrows for liquid, and yellow arrows for vapor.
- 1.4.7 Pipe fittings will be forged and rated at a minimum of 2000 psi
- 1.4.8 All ball valves shall be full port design and 600 psi WOG rated
- 1.4.9 80 mesh strainer installed before the fuel pump rated at 2000 psi, and installed in a position so as to easily facility access for maintenance

- 1.4.10 High differential pressure pump, specific for propane fuel dispensing. CORKEN FF / DLF-075 (1-2 hoses) or DLF / FF-150 (3– hoses), or equivalent with external by-pass valve (Corken CAU-166 or equivalent) as recommended by the manufacture for higher differential pressure pumps. Pump shall be installed in accordance with manufacturer’s recommendations, specifically in regards to the use of eccentric reducers, pump entry and exit minimum pipe lengths, etc
- 1.4.11 Pump inlet pipe shall be a minimum of 10 times the pump inlet diameter, of straight pipe, free of fittings, flexible connectors, strainers, etc., to ensure proper function in accordance with manufacturer’s specifications.
- 1.4.12 The pump shall be isolated by minimum of 1-1/4” full port ball valves to facilitate ease of service and maintenance, with minimum loss of fuel. Valves shall be sized according to pump inlet & outlet dimensions.
- 1.4.13 Motor requirement shall be a minimum of manufacturer recommended rpm, 5HP, Single phase, 60 Hz, 230 volt, Explosion proof, NEMA Class 1 group C & D. Where 3 phase electricity is available, motor shall be 3 phase and 7.5 HP.
- 1.4.13.1 Steel Skid support frame for tank, dispenser, control panel, pump and piping. The frame shall be of a design sufficient to support the full loaded weight of the tank and pumping system. The frame shall be treated and painted to prevent corrosion. Where tank will be mounted on a reinforced concrete foundation, a steel frame support shall not be required, provided-the tank has welded support legs attached and designed specifically for installation on the concrete foundation.
- 1.4.13.2 Concrete foundations shall be sufficient to support the combined weight of the tank, dispenser, pumping system and all associated station equipment, when full of gas, and shall prevent the floatation and movement of the tank in the event of flooding. Design shall permit containers to be self-supporting without the use of guy wires and shall withstand wind, seismic forces and hydrostatic test loads anticipated at the site in accordance with NFPA 58 5.2.4.3 and 5.2.7.1, 2008 edition.
- 1.4.13.3 Explosion proof electrical control panel specifically designed to integrate dispenser, pump, control valves, internal valves and associated equipment with facility power. Minimum NEMA enclosure specification for outside installation.
- 1.4.13.4 Emergency Shutoff Device (ESD) Button type, (circuit breakers shall not be accepted). ESD shall not be capable of being locked in the “ON” position. ESD capable of “Lock out-Tag out” shall be accepted, when only lockable in the off position. ESD may be combined with electrical control panel, where panel is mounted in accordance with distance and visibility requirements.
- 1.4.13.5 Crash Protection, ~~Bollards~~ installed in accordance with NFPA 58 and RRC rule 9.140(d) rules. Crash protection ~~and bollards~~ shall not be permanently affixed to the structure of the tank or integral frame

- assembly, so as to prevent transfer of impact energy to the tank and plumbing.
- 1.4.13.6 Labeling in accordance with NFPA 58 and RRC rule 9.140(g).
- 1.4.13.7 Explosion proof electrical connections, in accordance with NEC class1, division 1 &2 where required by RRC.
- 1.4.13.8 Land site preparation as required (Site preparation may be performed by the customer or local contractors at the customer's discretion), including but not limited to electrical work, excavation, construction, concrete work.
- 1.4.13.9 Fueling dispensers shall be connected to supply piping by a device, such as a Tripod valve, designed to prevent the loss of LP-gas in the event the dispenser is displaced.

2 Propane) Dispenser

- 2.3.1 CFT PRO-7100 electronic LPG dispenser single hose, or equivalent.
 - Optional 2 hoses, 2 sided dispenser as required
 - 2.3.1.1 White Painted finish steel cabinet enclosure
 - 2.3.1.2 Electronic Control computer
 - 2.3.1.2.1 Display & keyboard allowing access to Menu Options; displays gallons & price
 - 2.3.1.2.2 Gilbarco 2 wire communication protocol allowing connection with most Fuel Management systems
 - 2.3.1.2.3 Electronic pulser
 - 2.3.1.2.4 Electronic calibration
 - 2.3.1.2.5 Option for automatic temperature compensation
 - 2.3.1.2.6 Integrated communication and control for connection to 3rd party electronic fuel management systems
 - 2.3.1.2.7 Electronic and mechanical totalizer
 - 2.3.1.2.8 Secured access to computer, with pass codes for different levels of operation (i.e., operator, technician, manager and state weights & measures)
 - 2.3.1.2.9 Integrated sequential control of tank internal valves, pump motor and dispensing hose solenoid valve to ensure pump prime
 - 2.3.1.3 LPG Meter will be positive displacement ¾" meter with vapor eliminator and differential valve
 - 2.3.1.4 115/220 Volt flow control solenoid valve
 - 2.3.1.5 GG 20 Minimum Bleed GASGUARD Fueling Nozzle, or equivalent
 - 2.3.1.6 Hose pull away device (Rego lanyard type or Squibb Taylor Tripod or equivalent)
 - 2.3.1.7 UL 21 or 23 propane delivery hoses 350 PSI W.P. 1750 Burst Pressure, rated for LPG, minimum 12 feet overall length (11 feet of delivery hose from pullaway device)
 - 2.3.1.8 POS / Fuel management system connections as required based on station operational intent (public or private access)

2.3.1.8.1 Fuel management system shall be capable of functioning with customers existing fuel network, if requested (Attachment XX) using existing card or user interface (i.e., WEX, Voyager, VISA Fleet, etc)

2.3.1.9 Labeling in accordance with NFPA 58 and RRC rules

3 WARRANTY

3.3.1 Warranty on station components and assemblies shall be for a minimum of 36 months

3.3.1.1 Warranty shall cover defects in parts and workmanship

3.3.1.2 Warranty statement with detailed limitations and exclusions shall be provided with bid submittal package

3.3.1.3 Bidders shall have the option to offer extended warranties

4 TRAINING & TECHNICAL SUPPORT

4.3 Documented propane station operator & maintenance training (One day estimated 3 hours classroom & 1 hours on equipment)

4.3.1 Propane properties & characteristics

4.3.1.1 Safe handling

4.3.1.2 Station operation and maintenance & fueling the vehicle propane tank

4.3.2 Propane fueling system function, diagnosis, maintenance and repair

4.3.3 primary fault simulation

4.4 Ongoing training support upon request. Additional cost of training shall be the responsibility of the customer

5 LICENSING & ENGINEERING APPROVALS

5.3 All work shall be performed by personnel properly licensed or registered in accordance with RRC rules and regulations

5.4 At the customer's discretion, all site engineering for land preparation, construction and installation shall be reviewed by and approved by a State licensed Professional Engineer (PE). All engineering work beyond the normal scope as prescribed under RRC rules shall be at the expense of the customer.

5.5 All sub-contracted work (i.e., electrical, plumbing, LPG piping, etc) shall be performed by companies or individuals properly licensed or registered as required by the authorities having jurisdiction.

5.6 Customer warrants and represents that any site preparation or other work performed by, on the behalf of the customer by an outside vendor, shall comply with all applicable RRC rules and regulations.

6 TECHNICAL COMPLIANCE

6.3 All bids submitted MUST be in compliance with all of the above specifications

6.4 Packages submitted with required documentation missing, shall not be accepted

- 6.5 Packages shall include a table of specifications from above stating “Compliant” or “Not Compliant”
- 6.6 Packages submitted with deviations from the above specifications, shall be noted and have an explanation attached explaining either the benefits and attributes of the non compliance, or why the specification is incorrect
- 6.7 Packages submitted with deviations from the above specifications, and required explanatory attachments, may be reviewed by a third party qualified entity for functional, operational and regulatory compliance
- 6.8 Packages submitted containing substitutions (equivalents) to proposed components, shall have attachments detailing all specifications and functional equivalency

7 VENDOR QUALIFICATIONS

- 7.3 All bidding vendors shall have a minimum of 5 years experience in the field of propane fueling station design, construction, service & support
- 7.4 Vendor shall provide a minimum of 3 references from past propane station business activities. The references shall include address, telephone number, and email address.
- 7.5 Vendor shall be licensed in accordance with Texas Railroad Commission regulations
- 7.6 Vendor using sub contractors shall ensure that all subcontractors are qualified and properly licensed or registered.