

BUREAU OF STANDARDS

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Section No. 4

Version: 1.1

Procedure No. 5-1

TITLE: LP Gas Dispensing Unit Final Inspection

PURPOSE: This document details the procedures used to conduct a Final Inspection of a Liquefied Petroleum Gas Dispensing Unit. Per Chapter 527.0605 Florida Statute, the Final Inspection is required prior to the installer placing a container in operation where the unit is operated for resale to the public.

The standard for installation and maintenance of a LP Gas dispensing unit is covered in Chapter 527 Florida Statute, Rule 5J-20 Florida Administrative Code and NFPA 58, 2011 edition as adopted by Rule 5J-20.002 Florida Administrative Code. All data and observations are recorded on the inspection worksheet.

1. License and Qualifier Review

1.1. Determine the scope of the business to insure the business will be operating under the scope of the license.

1.2. Review training documentation for all employees dispensing propane.

NOTE: If the status of the license is not original issue or renewed do not proceed with final inspection. Contact supervisor for further instructions.

2. Security and protection

2.1. Verify the dispensing equipment is secured and not accessible by the public.

2.1.1. Where fencing is utilized a minimum 6 foot fence with 2 means of egress is required where the enclosed area is 100 sq ft or greater.

EXCEPTION: Where the Point of Transfer is within 3 feet of the gate.

2.1.2. A clearance of at least 3 feet is provided to allow access to the required means of egress.

2.1.3. Where equipment cabinet is utilized confirm all equipment is stored and secured inside the cabinet enclosure.

2.2. Verify containers and Equipment are protected from potential vehicular traffic

2.2.1. Crash Posts minimum requirements: 3 inch diameter posts, 3 feet deep, 3 feet above ground, and 3 feet apart from the tank 10 feet from the point of transfer (scale) or equivalent.

2.3. Fire Extinguisher

2.3.1. Minimum 18 lb B:C rated

NOTE: Fire extinguishers having more than one letter classification with the B:C rating included are acceptable.

2.3.2. Located within 50 feet of the point of transfer.

2.3.3. Visually inspect the fire extinguisher to insure it is fully charged.

2.3.4. Verify the annual inspection by a certified fire extinguisher company/individual has been conducted. This will be reflected on an inspection tag attached to the fire extinguisher.

3. Container inspection

- 3.1. Container meets minimum separation distances from other containers, Important buildings and Line of Adjoining Property that can be built upon as required by NFPA 58 Table 6.3.1.
- 3.2. Verify aboveground containers are not located within 20 ft of above ground containers containing liquids with a flashpoint below 200 °F.
- 3.3. No portion of the container is located within 6 feet of a vertical plane beneath overhead power lines that are over 600 volts.

NOTE: Where confirmation of the voltage cannot be confirmed by visual certification, the license holder can typically obtain confirmation from the servicing power company.

- 3.4. Locate the container data plate and insure all information is clearly legible.
- 3.5. Verify the data plate is securely attached to the container.
- 3.6. Visibly inspect the container surface to insure it is properly painted (a light reflected coating is preferred) and does not reflect signs of corrosion, pitting, or other shell damage which may compromise the integrity of the container wall.
 - 3.6.1. If pitting is observed, measure and compare pitting to the thickness listed on the tank data plate and the information noted on the inspection report.
- 3.7. Verify No Smoking signs are prominently posted on the visible or approachable sides and ends of the container.
- 3.8. Verify Flammable Gas or Propane signs are prominently posted on the visible or approachable sides of the container.
- 3.9. If the container is owned by the supplier, verify the suppliers name and phone number are marked on the container in a legible manner by a decal, tag, stencil or similar marking.
- 3.10. Visually inspect container legs for damage that will affect the ability to securely support the container at full capacity in the position in which it is designed to be installed.
- 3.11. Inspection of this area of the container should include:
 - 3.11.1. Observations of corrosion which have affected the integrity of the supports.
 - 3.11.2. Damage to the welds connecting the supports to the container.
 - 3.11.3. Visible damage which have changed the configuration or design in which the supports were attached to the container such as bent or flattened supports.
 - 3.11.4. If the container is an ASME vertical container, the legs are required to be protected against fire exposure with a material that has a fire resistant rating of at least 2 hour rating.
- 3.12. Verify the container is fitted with a fixed maximum liquid level gauging devise.
- 3.13. Insure the area within 10 feet of the container is clear of loose or piled combustible materials, weeds and long dry grass.
- 3.14. Verify all valves shall are readily accessible, operational and rated for the applicable use and all valve handles are properly attached.
- 3.15. Verify container shut-off valves are as close as practical to the container.
- 3.16. If piping is connected to the tank service valve the first fitting shall be an excess flow valve or a regulator
- 3.17. If an actuated liquid withdrawal is in use, verify it is approved for continued use.
- 3.18. Verify the liquid withdrawal opening is equipped with either an internal valve fitted for remote closure and automatic shutoff using thermal actuation or a positive shutoff valve that is located as close to the container as practical in combination with an excess-flow

- valve installed in the container, plus an emergency shutoff valve (ESV) that is fitted for remote closure and installed downstream from the positive shutoff valve.
- 3.19. If a supplemental temperature-sensitive element is used that is not part of the valve verify it is rated to operate at a maximum temperature of 250°F and is not painted.
- 3.20. Inspect ESV pneumatic operation and check for forced open inoperable ESV valves.
NOTE: This would be objects or mechanisms in place to forcibly hold the ESV in the open position which would have to be manually removed for the ESV to close.
- 3.20.1. Verify the liquid remote ESV device is located not less than 3 ft or more than 100 ft from the point of transfer
- 3.20.2. The Shut-Off device is identified and accessible
- 3.20.3. Check the valve for proper operation accomplished with the valve in the open position; follow the instructions at the remote station to close the valve.
- 3.21. Inspect the container relief valves
NOTE: When inspecting relief valves avoid looking directly into the relief valve. A mirror should be utilized for this part of the inspection.
- 3.21.1. Confirm start-to-leak pressure, relieving capacity in SCFM air, manufacturer's name and catalog number
- 3.21.2. Confirm relief valve rain caps are in place
- 3.21.3. Verify the valves are unobstructed and directed upward into the atmosphere
NOTE: If a canopy is utilized the installer will use piping to meet the discharge requirement. The piping must be in compliance with NFPA 58 6.7.2.14.
- 3.21.4. If the container is installed underground, verify the relief devices are piped vertically upward to a point at least 10 ft above ground.
- 3.21.5. Visibly inspect the drain openings to confirm they are clear and directed away from adjacent containers, piping or other equipment
- 3.22. If the dispensing station is located 25 feet away from pits, verify there are no drains or blow-offs from the unit directed toward or within 15 ft of a sewer system opening.
- 3.23. Verify the dispensing devices are located a minimum of 10 ft from any dispensing device for Class I liquids
NOTE: If low emission transfer systems are installed in accordance with NFPA 58 Section 6.26 the distance may be reduced to 5 ft. The transfer site is required to be identified by a sign or other marking posted in the area reflecting "Low Emission Transfer Site."

4. Piping System

- 4.1. Piping, Tubing and Valves shall be steel, brass, copper, malleable or ductile iron. No cast iron may be used. Brazing filling material has a melting point that exceeds 1000 °F.
- 4.2. Service pressure:

Service	Minimum Pressure
Higher than container pressure	350 psig (2.4 MPag) or the MAWP, whichever is higher, or 400 psig (2.8 MPag) WOG rating
Lp-Gas Liquid or vapor at operating pressure over 125 psig (0.9 MPag) and at or below container pressure	250 psig (1.7 MPag)

LP-Gas vapor at operating pressure of 125 psig (0.9 MPag or less	125 psig (0.9 MPag)
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- 4.2.1. Where 2 containers or more are piped together, verify flexible connectors used in this application are metallic

4.3. Verify the piping installed meets with the required rating below:

Service	Schedule 40	Schedule 80
Liquid	Welded or brazed	Threaded, welded or brazed
Vapor $\leq$ 125 psig ($\leq$ 0.9 MPag)	Threaded, welded or brazed	Threaded, welded or brazed
Vapor $\geq$ 125 psig ($\geq$ 0.9 MPag)	Welded or brazed	Threaded, welded or brazed

- 4.3.1. Verify piping is installed to allow for expansion, contraction, jarring, vibration and settling.
- 4.3.2. Flexible metallic connectors shall not exceed 5 feet in overall length when used with liquid or vapor piping on stationary container of 2,000 gallons or less.
- 4.3.3. Where flexible metallic connectors are used to prevent excessive strain on the pump, verify the flexible connectors do not exceed 36 inches in over length.
- 4.4. Visually inspect piping and fittings for observations of rust, corrosion or damage which will affect integrity of the piping system.
- 4.4.1. Where piping supports are installed—inspect for corrosion where the pipe is in contact with the support.
- 4.5. Verify aboveground piping is supported and protected against vehicular damage
- 4.6. If piping is installed underground verify the existence of dielectric unions
- 4.7. Inspect pipe color coding for compliance with Rule 5J-20.025, F.A.C.
- 4.7.1. Color coding within 30 inches each side of all shut off valves
- 4.7.1.1. Liquid valves Red
- 4.7.1.2. Vapor valves Yellow
- 4.7.1.3. Water valves Blue
- 4.8. Inspect piping for leakage in accordance with the departments adopted procedure for the detection of leaks
- 4.9. Visually inspect strainers for proper installation to permit proper flow direction and the strainer is installed to allow for the removal of the strainer element without removing equipment or piping.
- 4.10. Verify a Hydrostatic relief valve is installed in the liquid line or hose where liquid can be isolated in a line between shut off valves.
- NOTE: The hydrostatic relief valve is designed and installed to relieve pressure that could develop from the trapped liquid.**
- 4.10.1. Confirm the rating of the hydrostatic relief valve is in compliant with NFPA 58 5.13
- 4.11. Inspect the meter vapor tubing and pump bypass tubing is installed in accordance with the meter manufactures instructions.
- NOTE: Typically the vapor tubing and pump bypass tubing must be installed separately back to the tank.**
- 4.12. Verify a spare or open $\frac{3}{4}$ " Acme vapor connection is available to accommodate the meter testing.

5. Equipment/Point of Transfer

- 5.1. If the dispensing unit is installed under a weather shelter or canopy, verify the area is ventilated and not enclosed for more than 50% of its perimeter.
- 5.2. Verify the meter register indicating element is clear, easily readable and can be accurately read or observed by the consumer and operator from a reasonable position.
- 5.3. Verify point of transfer (POT) provide required clearance in accordance with NFPA 58 table 6.5.3.

NOTE: The point of transfer can be at any point where the hose can be connected to a container.

- 5.4. Verify the dispenser is installed on a concrete foundation or is part of a complete storage and dispensing unit mounted on a common base in compliance with NFPA 58 Table 6.6.3.3 (A) and placed either on a paved surface or on concrete pads at ground level within 4 inches of ground level.
- 5.5. Verify proper filling instructions are prominently posted at the transfer location
- 5.6. Verify electrical equipment, switches, and wiring within the classified area as well as non classified areas are in compliant with NFPA 58 6.22
- 5.7. Verify the control for the pump used to transfer LP-gas through the unit is provided at the device.
- 5.8. Verify the existence of a remote switch or circuit breaker to shut off the power in case of an emergency
 - 5.8.1. To be located not less than 20 ft or more than 100 ft from the point of transfer
 - 5.8.2. Is identified, accessible and visible from the point of transfer
 - 5.8.3. Check the switch for operation.

NOTE: This is best accomplished by requesting the dispensing operator turn on the pump; walk over to the switch and turn it off while you remain at the dispensing equipment.

- 5.9. Verify an excess-flow check valve or differential back pressure valve is installed in or on the dispenser at the point where the dispenser hose is connected to the liquid piping.
- 5.10. Verify a listed emergency breakaway device designed to retain liquid on both sides of the breakaway point is installed.

NOTE: Where the facility filling cylinders only, the emergency breakaway device is not required.

- 5.11. Where more than one hose is installed on the outlet side of the meter, confirm a 3 way isolation valve is installed to restrict the flow through only 1 hose during transfer.
- 5.12. Verify a quick-acting shutoff valve is installed at the discharge end of the transfer hose
- 5.13. Inspect the hoses and hose assembly.
 - 5.13.1. Verify the hose does not exceed 18 ft and is secured for protection when not in use
 - 5.13.1.1. Where the hose exceeds 18 ft, the facility must have written approval from the department
 - 5.13.2. Verify approval for application per NFPA 58 5.9.6
 - 5.13.3. Inspect Hoses and assembly for defects, damage or leaks
 - 5.13.3.1. Damage to outer cover that exposes reinforcement
 - 5.13.3.2. Kinked or flattened hose
 - 5.13.3.3. Soft spots or bulges in the hose

- 5.13.3.4. Couplings that have slipped on the hose, are damaged, have missing parts, or have loose bolts
 - 5.13.3.5. Leakage other than permeability
 - 5.14. Verify the meter window on the register is not damaged, missing or broken; the window is clear to the extent the numbers can be easily read
NOTE: The numbers must be definite original markings, unaltered, not faded or worn to the point in which they are not recognizable.
 - 5.15. Verify meter is set to a definite zero
 - 5.16. Where the facility fills cylinders by weight, verify the existence of a scale and the scale balances at 0
 - 5.17. Check for required supplies
 - 5.17.1. Approved liquid leak solution to check containers being filled for leaks
 - 5.17.2. Consumer warning labels
 - 5.17.3. 1075 labels
 - 5.18. Where a purge system is present, verify the following:
 - 5.18.1. Installed to purge containers with vapor only
 - 5.18.2. Designed to safely discharge product and allow for rapid disbursement of the product
 - 5.18.3. Where a vent manifold is utilized to allow for the purging of more than one container at a time, verify each connection to the vent manifold is equipment with a backflow check valve.
NOTE: Where no purge system is installed, discuss the scope of the business with the owner to determine if the purge system is necessary. Where it is determined the facility will not be purging containers, it should be noted on the inspection report, "facility not authorized to purge containers". This note should also be made in the database for future reference.
6. Containers in storage
- 6.1. Where the facility offers cylinder exchange or stores containers on site check for the following
 - 6.1.1. Cylinders are not stored within 5 feet of the dispenser
 - 6.1.2. Cylinders stored in an area open to the public are in a lockable cabinet or rack
 - 6.1.3. Cylinders are equipment with a collar or cap
 - 6.1.4. Cylinders are capped, plugged, effective seal
 - 6.1.5. Cylinders are protected from vehicular damage

Version	Rev. Date	Change Control Comments	Approver
1.1	12/13/16	Added note to Section 1	AES