

BUREAU OF STANDARDS

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Section No. 4

Version: 1.2

Procedure No. 3-2

TITLE: LP Gas Bulk Plant Routine Inspection

PURPOSE: This document details the procedures used to conduct a routine inspection of a Liquefied Petroleum Gas Bulk Plant facility located within the State of Florida as authorized by Chapter 527.061 Florida Statute.

The standard for installation and maintenance at a bulk facility 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.

1.0 Pre-Inspection/Document Review

- 1.1 Follow **Procedure 1.2 Approach and Contact** regarding the facility.
- 1.2 Ask if a manager or supervisor is available to review your findings at the close of the inspections.

NOTE: In the instance of a Dealer Remote Storage or Consumer Storage it is not uncommon for no one to be on site

- 1.3 View all available license(s) as applicable.
- 1.4 Review emergency shut off valve testing documentation
- 1.5 Verify documentation of odorization test are maintained
- 1.6 Review DOT cylinder recertification documents to insure compliance
- 1.7 Verify training documentation is maintained

2.0 Plant Security

- 2.1 Observe emergency contact information is prominently posted.

NOTE: Signage may be posted on the entrance of the business or at the entrance into the plant.

- 2.1.1 Phone number to be easily readable.
 - 2.1.2 4 inch letter height minimum.
- 2.2 Verify entrance into bulk facility is secured if unattended.
- 2.3 Verify fencing is a minimum 6 foot fence with 2 means of egress.

3.0 Plant Yard

- 3.1 Inspect the fire extinguisher to verify required minimum size 18 pound B:C rated, fully charged, within 50 feet, accessible from all points of transfer, and annual inspection by a certified fire extinguisher company/individual is current.
- 3.2 Inspect electrical equipment including switches, light fixtures, outlets and equipment within the classified areas to confirm they are maintained in compliant with NFPA 58 6.22.

4.0 Container

- 4.1 Confirm data plate is visible, legible and attached directly to the container.

NOTE: The data plate is typically attached to end of the container or on the top of the container in the area where the container appurtenances are located.

- 4.2 For containers over 4,000 gallons, inspect the internal liquid valves.

4.2.1 Automatic shutdown of the internal valves in liquid service is provided using thermal (fire) actuation.

4.2.2 The thermal sensing element of the internal valve is within 5 ft of the internal valve and the signage identifying the remote emergency shut station is legible and visible from the point of transfer.

4.2.3 The verbiage of the signage incorporates the words "Propane—Container Liquid Valve Emergency Shut-off" in at least 2" block letters with contrasting background.

4.2.4 If the Internal valve in the open position and operation are not being conducted, test the valve for operation by closing the valve from the remote emergency shutdown station.

NOTE: Following the instructions to close the valve, valves should begin to close within 1 minute. Where multiple container valves, once the first valve closes the remaining valves will close in a domino type effect.

- 4.3 If valves are not fitted for remote closure and are 6 feet or greater from ground level verify extension handles, ladders, stairs or platforms are on site to access the valves.

- 4.4 Inspect the container relief valves to confirm rain caps are in place, the valves are unobstructed and the drain openings are clear.

- 4.5 Visually inspect the container surface to insure it is properly painted (a light reflected coating).

- 4.6 Visually inspect the container for signs of corrosion, pitting, or other shell damage which may compromise the integrity of the container wall.

- 4.7 Visually inspect the welds of the container for corrosion, pitting or other damage that may compromise the integrity of the weld.

- 4.8 Visually inspect container legs or foot ring 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. Inspection of this area of the container should include:

4.8.1 Observations of corrosion which have affected the integrity of the supports.

4.8.2 Damage to the welds connecting the supports to the container.

4.8.3 Visible damage which have changed the configuration or design in which the supports were attached to the container such as bent or flattened supports.

- 4.9 If containers are placed on skids, concrete saddles or other supports that are in contact with the container shell, visually inspect the container surface and supports for damage or defects. Inspection of this area of the container should include:

- 4.9.1 If the container support is constructed of metal, the support shall be inspected for rust, corrosion or other damage that will affect its' ability to securely support the container at full capacity.
- 4.9.2 If the container support is constructed of concrete, the support shall be inspected for cracks, chips, deterioration or other damage that will affect its' ability to securely support the container at full capacity.
- 4.9.3 Visibly inspect the pads or coating on the masonry saddles to insure there is no deterioration of either.
- 4.9.4 Visibly inspect the containers surface in the area of contact with the support for rust and or corrosion.

NOTE: ASME and DOT containers constructed of steel are more susceptible to rust and corrosion where the container surface comes in contact with concrete saddle and therefore a protective coating or padding is required on this section of the container. The most common method of protection is padding. Over time the padding will deteriorate. The combination of air and moisture in contact with the area will ultimately result in corrosion which is not always readily visible.

5.0 Piping System

- 5.1 Inspect any evidence of recent piping changes to insure new piping, tubing and valves are compliant with Table 1 and 2 below:

Table 1		
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 pressur of 125 psig (0.9 Mpag or less	125 psig (0.9 MPag)	
Table 2		
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

- 5.2 Inspect any evidence of hose and flex connector replacement to insure they compliant with NFPA 58 5.9.6 specifications
- 5.3 Visually inspect for observations of rust, corrosion or damage which will affect integrity of the piping system.
- 5.4 Verify color coding is maintained in compliant with Rule 5J-20.025, F.A.C., within 30 inches each side of all shut off valves
 - 5.4.1 Liquid valves Red
 - 5.4.2 Vapor valves Yellow
 - 5.4.3 Water valves Blue

5.5 Inspect piping for leakage in accordance with the departments adopted procedure for the detection of leaks

5.5.1 If leaks are observed the inspector shall contact the supervisor to discuss the issuance of a Stop Use Order.

6.0 Liquid transfer areas (bulk truck and transport):

6.1 Inspect for evidence of any changes to insure the bulkhead emergency shut off valves (ESV) or backflow check valve are installed in the fixed piping so any break resulting from a pull away will occur on the hose or swivel-type piping side of the connection leaving the valves and piping on the plant side connection intact.

6.2 Inspect ESV, remote actuators, backflow check valves to insure valves are being maintained.

6.2.1 Valves clearly identified, accessible at a minimum 25 ft to maximum 100 ft in a path of egress.

6.2.2 Are not operated with the use of propane.

6.2.3 A temperature sensitive element is used to actuate the valve in case of emergency.

6.2.4 Supplemental temperature-sensitive element in use that is not part of the valve,

6.2.4.1 Operates at a maximum temperature of 250°F

6.2.4.2 Connects to the valve within 5 ft of the nearest hose end or swivel-type piping connected to the line in which the valve is installed.

6.2.4.3 The element is not painted or coated with any finish after manufacture.

6.2.5 Inspect 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.

6.3 Inspect the Hoses and hose assembly for defects, damage or leaks

6.3.1 Inspect Hoses and assembly for the following:

6.3.1.1 Damage to outer cover that exposes reinforcement.

6.3.1.2 Kinked or flattened hose.

6.3.1.3 Soft spots or bulges in the hose.

6.3.1.4 Couplings that have slipped on the hose, are damaged, missing parts, or loose bolts.

6.3.1.5 Leakage other than permeability leakage.

NOTE: Hoses must be approved for application per NFPA 58 5.9.6

6.3.2 The inspector shall contact the supervisor to discuss the issue of a Stop Use Order if hose damage or leakage is observed.

6.4 Inspect electrical equipment including switches, light fixtures, outlets and equipment within the classified areas to confirm they are maintained in compliant with NFPA 58 6.22

6.5 Confirm containers in storage other than those awaiting refill are a minimum 10 feet from the point of transfer.

7.0 Cylinder dock:

- 7.1 Inspect hoses as described in Section 6.3.
- 7.2 Check scales to insure they are balanced at 0.
- 7.3 Inspect the fire extinguisher as in Section 3.1.
- 7.4 Inspect electrical equipment including switches, light fixtures, outlets and equipment within the classified areas to confirm they are maintained in compliant with NFPA 58 6.22.

8.0 Rail Riser

- 8.1 Inspect hoses as described in Section 6.3.
- 8.2 Visually inspect Emergency Shut off valves for railroad tank car transfer system for damage or defects that would restrict operation.
- 8.3 Inspect quick connects for damage.
- 8.4 Inspect all valves for operation, signs of damage and or leaks.
- 8.5 Check for leaks in accordance with the departments established procedure for detection of leaks.
- 8.6 Inspect piping per piping procedure Section 5 of this procedure
- 8.7 If a rail car is on site verify chock blocks and signage are in place.

Version	Rev. Date	Change Control Comments	Approver
1.1	9/19/16	Section 6.3.1.1-6.3.1.5, 6.3.2 updated language	AES
1.2	12/12/16	Section 4.2.3 added "Container"	AES