MAINE PUBLIC UTILITIES COMMISSION
FACILITY EVALUATION REPORT FOR LIQUIFIED PETROLEUM GAS SYSTEMS

Facility ID # _____ **Date:** _____

Date of Last Inspection: _____ **State Inspector:** _____

Facility Name/Site location:_____

Address: _____

City: _____ **State:** _____ **Zip** _____

Location: **Lat:** _____ **Long:** _____

Installation Date of Original System: _____

Number of Services: **Existing:** _____ **Active:** _____

Public Place: **Yes:** _____ **No:** _____ **Storage Cap. (gals. ag/ug):** _____

Facility Operator: _____

Operator's Address: _____

City: _____ **State:** _____ **Zip** _____

Facility Owner: _____

Owner's Address: _____

City: _____ **State:** _____ **Zip** _____

* S=Satisfactory; U=Unsatisfactory; N/A=Not Applicable
Unless otherwise noted, all code references are to NFPA 58 (2004 Edition).

Revised 4/27/09

Section	ANSI/NFPA 58 REQUIREMENTS	S	U	N/A
	General			
4.2.3	The presence of odorant is determined by sniff testing or other means and the results documented: (a) Whenever LP-Gas is delivered to a bulk plant. (b) When shipments of LP-Gas bypass the bulk plant.			
	The operator ensures that the gas in the system is odorized.			
4.3.1	Plans for fixed installations utilizing storage containers over 2000 gallon individual water capacity, or with an aggregate water capacity exceeding 4000 gallons, shall be submitted to the authority having jurisdiction before installation is started.			
5.7.11.1(f)	Shutoff valves shall be readily accessible for operation and maintenance under normal emergency conditions.			
5.7.11.1(g)	A ladder is permanently fixed to the tank if it's higher than six feet above the ground or a valve can be operated remotely from a point 6 feet or less from the ground.			
6.7.2.1	Pressure relief devices shall be installed so they are in direct communication with the vapor space.			
5.7.11.4(c)	On an underground tank the dome or manhole cover has an opening equal to the discharge area of relief valve and regulator vent.			
5.10.1	All valves used in piping systems are made of steel, ductile iron, malleable iron, or brass.			
5.10.2	All valves are suitable for the appropriate working pressure.			
5.15.1.2	All equipment such as pumps, compressors, vaporizers, strainers, must be suitable for the appropriate working pressures.			
5.11.1	Hydrostatic relief valves must be used when liquid can be trapped between two valves in the liquid piping.			
	Hydrostatic relief valve discharge settings are not less than 400 psi or more than 500psi.			
	Piping			
6.8.3.3	Piping is used for pressures up to 125 psi designed for 125 psi or greater.			
	Piping being used for pressures greater than 125 psi must be designed for 250 psi or greater.			
	Piping used for pressures greater than tank pressure shall be designed for 350 psi or greater.			
5.8.3	Pipe or tubing is of a suitable material for the purpose it is being used for.			
5.8.4 and 5.8.5	Fittings for pipe and tubing is of a suitable material they are being used for.			
6.8.4.1	Polyethylene pipe is installed outdoors and underground.			
6.8.1.1(4)	There is no more than 20 psi being piped into any buildings.			
6.8.1.1	The vapor pressure in polyethylene piping system is 30 psi or less.			
6.8.3.5	Fittings used in excess of 125 psi must be Schedule 80.			
	Fittings used for Schedule 40 must be welded if over 125 psi.			
	If the pipe is brazed, the melting point of the brazing material is at least 1000 deg. F.			
6.8.3.8	Tank pressure manifold piping is designed so that the LP condensate goes back to the tank.			
6.8.3.9(b)	There is no non-metallic pipe, tubing, or hose used in the piping system.			
6.8.3.10	The above ground piping is supported properly and the piping is protected against physical damage from vehicles.			
6.8.3.11	The portion of aboveground piping in contact with a support or a corrosion-causing substance shall be protected against corrosion.			
6.8.4.2	The polyethylene pipe is buried at least eighteen inches (this may be reduced to twelve inches if external damage is unlikely or if conduit or shielding is used).			
6.8.4.3	In a polyethylene system there is an anode- less riser that connects the underground piping to the above ground piping.			
	The horizontal section of the riser has at least twelve inches of cover.			
6.8.3.14	The underground steel piping is protected against corrosion.			

Inspector Comments:

	Meters, Regulators & Pressure Relief Devices	S	U	N/A
6.7.3	The system is a two-stage system or has a two- stage integral regulator, or a 2 psi regulator.			
	Gas distribution systems utilizing multiple second-stage regulators shall be permitted to use a high-pressure regulator installed at the container provided a first-stage regulator is installed downstream of the high-pressure regulator and ahead of the second-stage regulators.			
	If a high-pressure regulator is used a first stage regulator shall be permitted between it and the second stage regulator, or if a high-pressure regulator is used and rated for a capacity of over 500,000 Btu/hr, there must be over pressure protection for both the high-pressure regulator and the second stage regulators.			
6.7.4.3	The first stage or high-pressure regulator shall be installed outside.			
6.7.4.4	The regulator set-up is designed against freezing rain, sleet, snow, ice, mud or debris (integrally or otherwise).			
6.7.4.5	The regulators relief vent is installed at least three feet horizontally from any building opening that is below the discharge of the vent.			
6.7.4.6	The point of discharge is at least five feet away from any source of ignition, direct vent appliance, or mechanical ventilation air intake.			
6.7.4.8	The vent of a regulator that is installed inside of a building must be piped to the outside and the vent location meets the requirements.			
6.6.6.1(h)	Regulator vents for underground containers must be mounted above the normal high water mark.			
6.13	In areas where heavy snow fall is anticipated, piping, regulators and meters, and other equipment installed in the piping system shall be protected from the forces anticipated as a result of accumulated snow.			
6.8.1.2	LP-Gas vapor pressures exceeding 10 psi must be in accordance with Chapter 10.			
6.15.5.1	Liquid or vapor meters shall be installed in accordance with the manufacturers' installation instructions.			
6.15.5.2	Liquid meters shall be installed so that the meter housing is not subject to excessive strains from the connecting piping. If not provided in the piping design, the use of flexible connectors shall be permitted.			
6.15.5.3	Vapor meters shall be installed so as to minimize the possibility of physical damage.			
	Tanks			
5.2.1.4	Containers showing serious denting, bulging, gouging, or excessive corrosion must be removed from service.			
5.2.1.5	Repairs or alterations of containers must comply with the regulations, rules, or code under which the container was fabricated.			
5.2.2.2	DOT tanks must be current or have a current re-qualification date.			
5.2.4	The minimum design pressure for ASME containers is in accordance with Table 5.2.4.2.			
5.2.4.1	The minimum design service pressure for DOT tanks must be in accordance with CFR 49.			
5.2.5.3	Containers designed to be filled volumetrically shall be equipped for filling into the vapor space.			
5.2.5.4	Containers that are greater than 125 gal water capacity through 2000 gallon water capacity are provided with a ¾" or larger connection for liquid evacuation.			
5.7.8	Fixed or variable liquid level gauges are installed on all containers filled by volume and installed in accordance with this provision.			
6.7.2.1	The relief valve communicates with the vapor space of the tank.			
6.7.2.12	On underground tanks over 2000 gal. the relief valve stacks at least 7 feet above the ground.			
6.7.2.11	On underground tanks for 2000 gal. or less, the relief valves shall discharge into the manhole or housing when the manhole or housing is ventilated.			
6.3	Containers are installed the proper distance from important buildings or property that can be built on (in accordance with table 6.3.1).			
6.3.4.1	For underground/above ground tanks, the separation between tanks is at least three feet or more (table 6.3.1).			

Inspector Comments:

Section	Tanks (Cont'd)	S	U	N/A
6.3.9	The distance measured horizontally from the point of discharge of a container pressure relief valve to any building opening below the level of such discharge shall be in accordance with Table 6.3.9.			
6.3.10	The distance measured in any direction from the point of discharge of a container pressure relief valve, vent of a fixed maximum liquid level gauge on a container, and the container filling connection to exterior sources of ignition, openings into direct-vent (sealed combustion system) appliances, and mechanical ventilation air intakes shall be in accordance with Table 6.3.9.			
6.4.5.2	There shall be no loose combustible materials, weeds, or dry grass within ten feet of the tank.			
6.6.1.6	Where tank floatation is a possibility, the tank is properly anchored.			
6.4.5.12	No portion of an above ground container is located within six feet of a vertical plane beneath overhead power lines that are over 600 volts nominal.			
6.20.1.1	Tanks must be located at least ten feet from any source of electrical equipment (see table 6.20.2.2).			
6.6.1.4	Above ground containers shall be painted.			
6.6.3.1(c)	If the tank is more than a 2000-gal tank, it is mounted on saddles that fit the contour of the tank.			
6.6.3.5	The saddle has a pad between it and the tank that prevents corrosion between the tank and the saddle.			
6.6.6.3	If the tank is mounded there is at least one foot of cover over the tank.			
6.6.6.3(3)	Valves and other appurtenances are accessible without disturbing the mounding material.			
6.6.6.2	The mounded tank is protected against corrosion.			
6.6.6.1(a)	On an underground tank there is at least six inches of cover.			
6.6.6.1	If subject to loading from vehicles, there is at least eighteen inches of cover (for a non-interchangeable tank or, if the tank is an interchangeable tank, then no more than twelve inches of cover) and protected from vehicle traffic.			
6.6.6.1	The tank housing, piping, etc. in the above scenario is protected against traffic.			
6.6.1.2	The tank, housing, piping, etc. is protected against vehicles.			
6.6.6.2	The underground tank is protected against corrosion.			
6.14.1	All metallic equipment and components that are buried or mounded shall be coated or protected and maintained to minimize corrosion.			
6.7.2.4	Rain caps or other means shall be provided to minimize the possibility of the entrance of water or other extraneous matter into the relief device or any discharge piping. Provisions shall be made for drainage where the accumulation of water is anticipated.			
6.7.2.6	The design of the pressure relief valve drain opening shall provide the following: (1) protection of the container against flame impingement resulting from ignited product escaping from the drain opening (2) direction of the pressure relief valve drain opening so that adjacent container(s), piping, or equipment are not subject to flame impingement.			
5.2.5.5	Containers larger than 2000 gal water capacity is equipped with an opening for a pressure gauge.			
6.6.3.3	For horizontal containers above 2000 gal water capacity on a concrete foundation, the total height of the outside bottom of the container above the concrete foundation is less than 6 inches.			
	A) For horizontal containers less than 2000 gal water capacity installed on concrete foundations raised above the ground level by more than 12 inches, the bottom of the horizontal steel support is not less than 2 inches or more than 12 inches, below the outside bottom of the container shell.			
	B) For installation on paved or concrete foundations within 4 inches of ground level, the bottoms of the structural members are no more than 24 inches below the outside bottom of the container shell.			
5.2.8.1(a)	If one or more compressed gases are stored or used in the same areas as LP-Gas, the containers shall be marked "Flammable" and either "LP-Gas," "LPG," "Propane," or "Butane."			
5.7.1.1	Container appurtenances shall be fabricated of materials suitable for LP-Gas service and resilient to the action of LP-Gas under service.			
5.7.1.3	Container appurtenances shall have a rated working pressure of at least 250 psig.			
5.7.1.4	Gaskets used in LP-Gas service shall be resilient to the action of LP-Gas.			
5.7.1.4(b)	Gaskets shall be replaced when flanges are opened.			
5.7.2.1	Containers shall be equipped with one or more pressure relief devices designed to relieve vapor.			

Inspector Comments:

Section	Tanks (Cont'd)	S	U	N/A
5.7.2.4	A) Pressure relief valves shall be designed for sufficient relieving capacity with the requirements of Table 5.7.2.4(a).			
5.7.2.8	B) Pressure relief valves shall be marked accordingly.			
5.7.2.9	C) Shut off valves shall be eliminated between the container and pressure relief device.			
5.7.2.10	D) Pressure relief devices shall be designed to minimize tampering.			
5.7.7.1(f)	A) Containers less than 2000gal water capacity shall comply with Table 5.7.7.1(e).			
5.7.7.3	B) For containers over 2000 gal water capacity must comply with: 1) For vapor and liquid withdrawal openings: a. A positive shut-off valve located as close to the tank as possible. b. An internal valve with an integral excess flow valve or excess flow protection.			
	2) For vapor and liquid inlet openings: a. A positive shut-off valve in combination with either a backflow check valve or excess flow valve. b. An internal valve with an integral excess flow valve or excess flow protection.			
	3) Other container appurtenances: a. An internal spring-type, flush-type full internal, or external pressure relief valve (See Annex A). b. Fixed liquid level gauge. c. Float gauge, rotary gauge, or slip tube gauge. d. Pressure gauge. e. Temperature gauge.			
Indirect-Fired & Electric Vaporizers				
6.19.2.1	Vaporizers installed in a building must comply with section 10.2 or 10.3.			
6.19.2.2	The building or structure shall not have any unprotected drains to sewer or sump pits.			
6.19.2.3	Pressure relief valves must be piped to the outside.			
6.19.2.4	If the heat source is gas-fired and located within 15 feet, see direct-fired vaporizers for requirements (6.19.3).			
6.19.2.6	If gas-fired heat source, it must have an automatic safety device.			
Direct-Fired Vaporizers				
6.19.3.1	If vaporizer is in a building it must be built according to Chapter 10.			
6.19.3.2	Drains or sump pump cannot be shared with another structure.			
6.19.3.3	Pressure relief valve must be piped to the outside.			
6.19.3.5	A manual shutoff shall be installed in each connection of the container that is supplying the vaporizer.			
6.19.3.6	For direct-fired vaporizers see section 6.19.3.6 and 6.19.4.5: • Vaporizer is 10 ft from container; • Vaporizer is 15 ft from container shutoffs; • Vaporizer is 15 ft from the point of transfer (if transfer is within 15 ft, burner and pilot must be shut off when transferring liquid) • Vaporizer is 25 ft from nearest building or property line.			
Waterbath Vaporizers				
6.19.6.1	If electrically heated, all electrical equipment must be Class 1, Group D. (Treat as an indirect-fired vaporizer)			
6.19.6.2	If not electrically heated, treat as direct-fired.			

Inspector Comments:

Section	PART 192 REQUIREMENTS Field Performance Review	S	U	N/A
.181	Valve Locations – distribution line			
.365	Valve Locations – service line			
.463	Carthodic Protection			
.467(b)	One or more insulating devices must be installed where electrical isolation of a portion of a pipeline is necessary to facilitate the application of corrosion control			
.479	Pipeline Components Exposed to the Atmosphere			
.605(a) (8)	Knowledge of Operating Personnel			
.707	Line Markers			
.751	Warning Signs			

Inspector Comments: