

LP GAS UTILITY PEAK SHAVING PLANT CHECK LIST NFPA 59 (2004) & NFPA 58 (2008)

ck	Summary	Code Ref.	Code
	License Current and Posted (copy located at remote bulk sites)	SC 40-82-30	
	Piping, Liquid / Vapor In or Out		May use Backflow Check Valve (58-6.10.3) if flow into container only
	ESV Required	NFPA 59 (04) 11.2.2.1	Where a hose or swivel-type piping 1½ in. (38 mm) or larger is used for liquid transfer or a 1¼ in. (32 mm) or larger vapor hose or swivel-type piping is used in this service, an emergency shutoff valve complying with 7.1.4 shall be installed in the fixed piping of the transfer system within 20 ft (6.1 m) of lineal pipe from the nearest end of the hose or swivel-type piping to which the hose or swivel-type piping is connected. Where either a liquid or vapor line has two or more hose or swivel-type piping of the sizes designated, an emergency shutoff valve or a backflow check valve shall be installed in each leg of the piping.
	ESV requirements	NFPA 59 7.1.4	Emergency shutoff valves shall be approved and shall incorporate all of the following means of closing: (1) Automatic shutoff through thermal (fire) actuation (2) Manual shutoff from two or more remote locations (3) Manual shutoff at the installed location
	ESV Remote	NFPA 59 11.2.2.7	All new installations and all existing installations shall have at least two clearly identified and easily accessible manually operated remote emergency shutoff devices. One shutoff device shall be located not less than 20 ft (6.1 m) nor more than 100 ft (30.5 m) in the path of egress from the emergency shutoff valve.
	Breakaway stanchion at Bulkhead listed (or minimum 12" threaded Sch. 80 pipe)	NFPA 59 (04) 11.2.2.4	(Breakaway stanchion shall be provided so) any break resulting from a pull will occur on the hose or swivel-type piping side of the connection while retaining intact the valves and piping on the plant side of the connection.
	Hydrostatic relief required where liquid trapped (valves and backchecks)	NFPA 59 (04) 10.10	A hydrostatic relief valve shall be installed between each pair of shutoff valves on LP-Gas liquid piping so as to relieve the pressure that could develop from the trapped liquid.
	Rain Caps Hydrostatic Relief Valve	NFPA 58 6.7.2.4	Hydrostatic relief valves shall have rain caps installed.
	Liquid and vapor lines Labeled or Color Coded.	NFPA 59 (04) 7.2.9	All inlet and outlet connections on any container shall be labeled or color coded, or valves connected to the connections shall be labeled to designate whether they are connected to a vapor or liquid space.
	ESV Remote clearly Identified (58-6.12.10(1)) use 58-6.11.5	NFPA 58 6.11.5	Emergency remote shutdown stations shall be identified by a sign, visible from the point of transfer, incorporating the words "Propane — Container Liquid Valve Emergency Shutoff" in block letters of not less than 2 in. (51 mm) in height on a background of contrasting colors to the letters.
	Properly Sized Excess Flow Valve Required at container and change of pipe size	NFPA 59 (04) 7.2.4	The connections or lines, including valves, fittings, and so forth, downstream of an excess-flow valve shall have a greater capacity than the rated flow of the excess-flow valve.
	Annual test of ESV and Backflow Check Valve. Documentation needed	NFPA 59 (04) 11.2.2.6	Emergency shutoff valves and check valves required by Section 11.2 shall be tested annually for proper operation. The results of the tests shall be documented.
	Piping Secured	NFPA 59 (04) 7.1.9	Piping outside buildings shall be supported and protected against physical damage and corrosion.
	Piping painted to protect from corrosion	NFPA 59 (04) 7.1.9	Piping outside buildings shall be supported and protected against physical damage and corrosion.
	Swing Joint or piping for Expansion provided	NFPA 59 (04) 7.1.8	Provision shall be made for expansion, contraction, jarring, vibration, and settling.
	Swing Joint or piping for Expansion provided between container & manifold	NFPA 59 (04) 7.3.1	Piping connections between container and manifold shall be designed to provide allowances for contraction, expansion, vibration, and settlement. Compression-type couplings shall not be permitted for this purpose.
	2" Piping to be welded or welded flanges used.	NFPA 59 (04) 7.1.2	Piping connections to the container for sizes over 2 in. nominal pipe diameter excluding excess-flow valves shall be made by welding or with welded flanges.
	Separation Distances		
	Cargo tank vehicle transfer min. 25' from container	NFPA 59 (04) 11.2.4.2	A cargo tank vehicle transfer area shall be of sufficient size to accommodate the vehicles without excessive movement or turning. Cargo tank vehicles that unload into or load from storage containers shall be at least 25 ft (7.6 m) from the container and positioned so that the shutoff valves on both the truck cargo tank vehicle and the transfer station are readily accessible.
	Distance between containers and Important Buildings	NFPA 59 (04) 5.4.1.2	Containers shall be located in accordance with Table 5.4.1.2
	Separation from Flammable Liquids minimum 20 ft.	NFPA 58 6.4.5.5	The minimum horizontal separation between aboveground LP gas containers and aboveground tanks containing liquids having flash points below 200 degrees F shall be 20 ft.
	Fire Protection		
	Minimum 18 Lb. Fire Extinguisher Required	NFPA 59 (04) 13.5.2	The minimum size portable dry chemical extinguisher shall be 18 lb (8.2 kg) with a B:C rating.

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	Fire Safety Analysis (FSA) 4000 WG or more	NFPA 59 (04) 13.4.3.1	* Fire protection shall be provided for installations with an aggregate water capacity of more than 4000 gal (15.1 m ³) and of ASME containers on roofs. The modes of such protection shall be specified in a written product release prevention and incident preparedness review. The review shall be made available to the authority having jurisdiction and local emergency responders upon request. The product release prevention and incident preparedness review shall be reviewed and revised when storage capacity or transfer equipment is modified.
	Provide copy of FSA at site and Fire Department	NFPA 58 6.25.3.3	The review shall be submitted by the owner, operator, or their designee to the authority having jurisdiction and local emergency responders.
	FSA to be updated	NFPA 58 6.25.3.4	The review shall be updated when storage capacity or transfer system is modified.
	Special Safety requirements	NFPA 58 6.25.3.6	If in the preparation of the incident prevention review it is determined that a hazard to adjacent structures exists that exceeds the protection provided by the provisions of the code, special protection shall be provided in accordance with 6.23.5.
	Fire Department Access Required	NFPA 58 6.25.4.1	Roadways or other means of access for emergency equipment, such as fire department apparatus, shall be provided.
	NFPA 704 Marking Required	IFC (06) 2703.5	Unless otherwise exempted by the fire code official, visible hazard identification signs as specified in NFPA 704 for the specific material contained shall be placed on stationary containers and above-ground tanks and at entrances to locations where hazardous materials are stored, dispensed, used or handled in quantities requiring a permit and at specific entrances and locations designated by the fire code official.
	Ignition Source Control		
	Container not under power >600 volts	NFPA 58 6.4.5.12	LP Gas tanks and dispensers shall not be installed within 6 ft. of a vertical plane beneath any overhead power line(s) that are over 600 volts nominal.
	Smoking, Sparks and Flame Prohibited and Enforced	NFPA 59 (04) 4.8.1	Smoking and nonprocess ignition sources within the protective enclosure shall be prohibited, unless in accordance with 4.8.2 through 4.8.4.
	No Smoking Posted from all directions of approach	IFC (06) 310.3	
	Electrical equipment per Code	NFPA 59 (04) 4.5.2.1	Electrical equipment and wiring installed in unclassified areas shall be in accordance with NFPA 70, National Electrical Code®, for nonclassified locations. [58:6.20.2.1]
	Open Flame Equipment	NFPA 58 6.22.3.3	Open flame equipment located and used in plant facility shall be installed and used according to code.
	No Parking within 50 ft. of containers	NFPA 59 (04) 4.8.4	Vehicles and other mobile equipment that constitute potential ignition sources shall be prohibited within diked areas or within 50 ft (15 m) of containers that contain LP-Gas, flammable liquids, or flammable refrigerants, except where specifically authorized and under constant supervision or where loading or unloading at facilities specifically designed for the purpose.
	Misc. / Other		
	Container properly Painted	NFPA 59 (04) 5.5.1.5	Containers shall be kept properly painted or otherwise protected from the elements.
	Traffic Protection Provided where needed	NFPA 59 (04) 4.4	Where damage to liquefied petroleum gas systems from vehicular traffic is a possibility, precautions (such as warning signs or devices, or barricades) shall be taken against such damage. (See 5.8.2.)
	Corrosion at Bulk container Saddles	NFPA 59 (04) 5.5.1.4	Means to minimize corrosion shall be provided on that portion of the container that is in contact with the foundations or saddles.
	Area to be protected by fence or other approved means	NFPA 59 (04) 13.8.2	A protective enclosure including a peripheral fence, building wall, or natural barrier shall be provided to enclose major facility components, such as the following:
	Lighting to be provided	NFPA 59 (04) 4.6	Lighting shall be provided to illuminate operating facilities such as walkways, essential control valves, and loading and unloading facilities in particular
	Data plate required for tanks.	NFPA 59 (04) 5.3.1	ASME containers shall be identified by the attachment of a nameplate.
	LP Hose Marked LP 350 psi	NFPA 59 (04) 7.5.2.1	Hose shall be designed for a minimum bursting pressure of 1750 psi (12.1 MPa) [350 psi (2.41 MPa) working pressure] and shall be marked with "LP-Gas" or "LPG," with the working pressure in psi marked at not greater than 10 ft (3 m) intervals.
	System and Piping free of leaks	NFPA 59 (04) 7.1.7	All piping, tubing, fittings, and valves shall be leak tested after assembly and proved to be free of leaks at not less than normal operating pressures. Tests shall not be made with a flame.
	Maintenance manuals required	NFPA 59 (04)12.1.1	Maintenance manuals for normally attended facilities shall be kept at the facility and shall be available to maintenance personnel.
	Relief Piping extended upward 7 ft.	NFPA 59 (04) 10.7.1 <C>	The vent piping shall extend upward at least 7 ft (2.2 m) above the top of the container.

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	Rain Cap required for Relief Valves	NFPA 58 6.7.2.4	Rain caps shall be installed on pressure relief valves that do not restrict relief device flow.
	Min two gauges required including Fixed Liquid Level gauge.	NFPA 59 (04) 7.4.1 (1)	If the liquid level gauging device is a float type or a pressure differential type, the container also shall be provided with an auxiliary gauging device, such as a fixed dip tube, slip tube, rotary gauge, or similar device.
	Pressure Gauge required	NFPA 59 (04) 7.2.11	Each storage container shall be provided with a pressure gauge.
	Fixed liquid gauge required to have marking showing the percentage set for.	NFPA 58 5.7.5.4	ASME containers shall have permanently attached to the container adjacent to the fixed maximum liquid level gauge, or on the container nameplate, markings showing the percentage of capacity that is indicated by that gauge.