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The installation of underground propane tanks from the American Society of Mechanical Engineers (ASME) plays a huge role in the industry here in the Northeast. At D.F. Richard Energy, more than 70 percent of our horizontal propane tank installations are underground, with the majority of those supplying central heating systems. The continued rise in new construction has significantly increased the demand for underground propane tanks, bringing installations to an all-time high. Understanding the advantages, disadvantages and proper installation techniques can help companies protect their investment for many years. Build relationships with contractors Building contractors play a huge role in the installation of underground propane tanks. The relationship and communication with the builders tend to be the most important parts of the installation process. The contractor usually has heavy digging equipment on-site during home construction and does not typically like equipment sitting around. Our office or sales representative usually gets the builder's call looking for the tank's installation with short notice – the next day or the following day. Depending on necessary town permits, we can usually make this happen. However, meeting with these contractors prior to the tank set is crucial to helping the licensed technician perform the job safely, efficiently and to meet all state and local codes. Underground propane tanks are protected from extreme weather conditions. (Photo by LP Gas staff) Going underground There are many advantages to the customer choosing underground tanks versus aboveground tanks: One main advantage is the protection from extreme weather conditions, whereas aboveground tanks are exposed to elements like rain, snow, sleet, wind and sun on a daily basis. These weather elements could cause rust, paint peeling and corrosion. Underground tanks are also hidden, which makes the customer feel safe and secure. In the customer's eyes, aboveground tanks can be considered high maintenance. There are also some disadvantages of having a steel tank in the ground. The earth has a natural electrical current that causes electrolysis. Electrolysis can cause damage to steel when a tank is not properly protected. Depending on the tank size, we use at least one sacrificial anode bag to protect the propane tank. This bag diverts the electrolysis from the tank and acts as an electrical decoy. This protects the tank from corrosion and, in most cases, will keep the tank looking new, even buried in the ground for many years. Underground tanks can be easy to maintain if properly installed, but remember it's not easy to swap one out like we do with aboveground tanks. Technician's role The technician performing the install is the first line of defense to ensure the tank can uphold its integrity. Making sure adequate backfill is used to cover the tank and piping will protect the tank from natural rocks in the earth. The anode bag must be properly connected to the tank, installed in the designated location, and activation using water is important. A lot of companies have policies and procedures regarding cathodic testing for their underground propane tanks. (The Propane Education & Research Council has developed a great program that goes into detail on cathodic protection.) Making sure the tank has the correct voltage reading from the first install will give the company a great starting point. The majority of these underground propane tanks are owned and maintained by us, the propane company. A small percentage of underground tanks are owned by the customer here in New England. We make a huge investment when installing propane tanks, especially underground. There are many things we can do to protect our investment. During gas checks, we should test and record our readings. During deliveries, we should visibly inspect the tank for rust or corrosion. Taking these steps will ensure the maximum lifespan of an underground propane tank and protect the investment made by you and your customers for many years to come. Ryan Card is the operations manager for D.F. Richard Energy in Dover, New Hampshire. He can be reached at rcard@dfrichard.com or 603-516-3225. Liquefied Petroleum Gas (LPG) systems are a popular choice for both residential and commercial applications due to their efficiency and versatility. Proper installation and maintenance are crucial for safety and optimal performance. Site Assessment: Begin with a thorough evaluation of the installation site. Ensure adequate ventilation and accessibility for future maintenance. Choosing Equipment: Select high-quality LPG tanks, regulators, and piping. Ensure they meet local regulations and standards. Installation Process: Engage a licensed professional for installation. This involves securely placing the LPG tank, connecting it to the gas line, and ensuring all components are leak-proof. Testing: Once installed, conduct a pressure test to identify leaks. Use a soap solution on joints and fittings; bubbles will indicate escaping gas. Regular Inspections: Schedule periodic inspections by qualified technicians. Check for leaks, corrosion, and other wear and tear. Tank Refilling: Monitor tank levels and arrange refills promptly to prevent running out of gas, which can lead to pressure issues. Clean Equipment: Keep all components clean and free from debris. Regularly check filters and replace them as needed. Emergency Protocols: Have a plan in place for emergencies. Ensure all users know how to shut off the system and recognize the smell of gas. By following these guidelines, you can ensure a safe and efficient LPG system that meets your energy needs. 100%(1)100% found this document useful (1 vote)1K viewsThis document provides installation instructions for a sequential LPG/CNG fuel system. It describes the key components of the system, including the regulators that reduce gas pressures, the ...SaveSave LPG Installation Manual For Later100%100% found this document useful, undefined Preparing for a new LP tank installation? Read on below to learn more about what to expect for the day of the install. Reading through this guide will better prepare you and your home for a LP gas cylinder install. Learn about right placement and what may be hazardous surroundings for the new propane tank. Here's an at-a-glance version of a few key points from the diagram below: Areas subject to capturing propane fumes into the house should be specified and steered clear from. The gas tank must have 10 feet of clearance from openings into direct-vent appliances or mechanical ventilation air intakes Review of any possible ignition sources are and where they are located around the perimeter of your home. A 10 feet clearance from any ignition source is required for placement of the propane tank Ignition sources include a window A/C unit and an A/C Compressor unit Your qualified service technician and installer will survey the land to provide the exact measurements and placement for your gas cylinder, taking all of these important areas to avoid and laying it out in a plan before install. This information is from NFPA Pamphlet 58. It is for informative use only, all installations must be done by a qualified installer only, and in accordance with all applicable codes and industry standards. SMALLER PROPANE TANKS Your qualified installer might use the diagram below for a typical cylinder container installation per NFPA Pamphlet 58. (This figure is for illustrative purposes only; always check to determine what codes shall govern.) (This figure for illustrative purposes only; code shall govern.) Note 1: 5-ft minimum from relief valve in any direction away from any exterior source of ignition, openings into direct-vent appliances, or mechanical ventilation air intakes. Refer to 3.2.2.2(b). Note 2: If the cylinder is filled on site from bulk truck, the filling connection and vent valve must be at least 10 feet from any exterior source of ignition, openings into direct-vent appliances, or mechanical ventilation air intakes. Refer to 3.2.2.2(d). LARGER ASME PROPANE CYLINDERS Your qualified installer might use the diagram below for a typical aboveground ASME container installation per NFPA Pamphlet 58. (This figure is for illustrative purposes only; always check to determine what codes shall govern.) Note 1: Regardless of its size, any ASME container filled on site must be located so that the filling connection and fixed maximum liquid level gauge are at least 10 feet from any external source of ignition (e.g., open flame, window A/C, compressor), intake to direct-vent gas appliances, or intake to a mechanical ventilation system. Refer to 3.2.2.2(d). Note 2: Refer to 3.2.2.2(c). Note 3: This distance may be reduced to no less than 10 feet for a single container of 1200 gal (4.5 m3) water capacity or less, provided such container is at least 25 feet from any other LP-Gas container or more than 125 gal (0.5 m3) water capacity. Refer to 3.2.2.2(e). UNDERGROUND PROPANE CYLINDERS Your qualified installer might use the diagram below for a typical underground ASME container installation per NFPA Pamphlet 58. (This figure is for illustrative purposes only; always check to determine what codes shall govern.) Note 1: The relief valve, filling connection, and liquid level gauge vent connection at the container must be at least 10 ft. from any exterior source of ignition, openings into direct-vent appliances, or mechanical ventilation air intakes. Refer to 6.3.10 Note 2: No part of an underground tank shall be less than 10 ft. from an important building or line of adjoining property that may be built upon. Refer to 6.3.4.2