



Today's discussion is from the Wildland / Urban Interface Category.

Liquefied Propane Gas (LPG) Tank Hazards

Liquefied Propane Gas (LPG) tanks are commonly found in the wildland-urban interface and present hazards to firefighters in that environment. LPG tanks may be found in a number of other environments such as motor homes, travel trailers, grills, camp stoves, lanterns, etc. Directly attacking LPG tank fires is a structural fire task involving hazardous materials and should only be attempted by trained personnel using full structural personal protective equipment and equipped with a volume of water adequate to safely attack the fire.

● Boiling Liquid Expanding Vapor Explosions (BLEVE)

- The most recognized hazard with LPG tanks is BLEVE (Boiling Liquid Expanding Vapor Explosions) or sudden complete failure of the tank. Some training courses have directed responders to approach the tank from the sides, believing that the force of the explosion will occur on the ends of the tank. However, this is not a guarantee that you will be safe from projectiles or missiles from the explosion, as they may travel in ALL directions up to 2,500 feet away. Leave the area immediately if you smell propane, hear a rising sound from venting safety devices or see discoloration or deformation of the tank. If you leave the area, get at least 2,500 feet away and do not go down wind or down slope of the leaking propane. BLEVEs are a major hazard to emergency responders!

● Fuel Reduction Around Tanks

- Wildland firefighters may take action to prevent direct flame impingement on LPG tanks by removing wildland fuels in the area. However, be aware that lines from the tank to structures may be above or below ground, and may be cut by tools or equipment. Propane gas is heavier than air, and may move along the ground at some distance, and may be ignited when it reaches an open flame or another ignition source. Use extreme caution when doing fuel reduction around tanks, and flag any lines you encounter.

● Other Wildland Fire Considerations

- Do not position engines or other apparatus near LPG tanks or downwind / down slope from tanks.
- Do not deploy fire shelters near LPG tanks or downwind / down slope from tanks.

● Cooling Tanks

- In light fuels such as grasses, where any heat exposure to the tank will be very limited, rapid application of cooling water on the outside of the tank above the liquid level can reduce the likelihood of container failure by lowering the external temperature of the shell of the exposed tank. Water should not be directed at the valve safety devices, due to the potential of "icing" the valve closed.
- In heavy fuels where long duration heat exposure to the LPG tank is likely, evacuate all personnel and equipment 2,500 feet away and not down slope or down wind. NFPA says that direct flame impingement protection requires water flow of at least 500 gpm from an unmanned monitor nozzle. This is a situation for properly trained, equipped and supported structural firefighters.

References:

[Propane Safety Web Site](#)

[Natl. Institute for Occupational Safety & Health's Web Site](#)

[National Propane Gas Association's Web Site](#)

[National Fire Protection Association's Web Site](#)

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