



*Interruption of Service Reminders:*

- Develop a company policy for interruptions of service and always follow them.
- Communicate your policy to your customers.
- Verify appliances can operate if there is any doubt the system may be out of gas.
- Always perform a leak check and document it for all out of gas deliveries.

## HOW DO YOU KNOW A PROPANE SYSTEM IS “OUT-OF-GAS”?

*This is what we do know:*

If a fire and/or explosion occurs after a delivery, one of the first questions will be: Was the propane system out of gas? This question will need to be answered carefully and precisely.

With many fires and/or explosions, the propane marketer may not initially appear to be at fault. There may have been some cause unrelated to an out-of-gas delivery. But when it is determined the system was Out-of-Gas or service had been interrupted with no documented leak check performed, it makes it harder to defend the propane marketer. An investigation may disclose the true cause of an explosion was not related to an out-of-gas situation.

However, an argument will be made that the accident would not have occurred had a leak check been performed.

## How do you know a propane system is "Out-of-Gas"?

### Risk Engineering

**When investigating propane fires and explosions, many questions are asked. Below are just a few that you need to be prepared for that may be related to an out-of-gas situation.**

- 1 Did the customer call saying they were out of gas?
  - a. If yes, was a leak check performed?
  - b. Did you document the call in a call log?
- 2 Was a leak check documented with pressure recorded and time held?
- 3 Was there a customer signature verifying a leak check was performed?
- 4 What was the size and number of propane containers on site?
- 5 How much gas was delivered?
- 6 What was the percentage of gas in the propane container before and after delivery?
- 7 What was the gas delivery history?
  - a. How much gas was delivered?
  - b. Is there evidence that this customer may have used more gas than previous history showed?

**Below are some answers that have been given why a leak check was not performed:**

- 1 When I opened the fixed liquid level gauges (bleeder as some may call it) there was pressure.
- 2 There was a volume in the tank above 0%, so I did not think the tank was empty.
- 3 A leak check was performed 3 months ago when the system last ran out of gas, so I did not think it was needed this time.
- 4 I was not told to perform a leak check.
- 5 I did not have enough time.
- 6 It was not our company policy.
- 7 The customer was not home.

None of these excuses are acceptable. The first two reasons are the most common answers given as to why a leak check was not performed. The fixed liquid level and percentage gauges are used to fill a container, not to determine if the gas system is out of gas or does not have enough vapor pressure to operate all appliances. **The only true measure for determining whether a system is out-of-gas is to verify if the appliances are operating.**

What is the definition of an **Out-of-Gas** or an **Interruption of Service**?

#### *Definition of Interruption of Service (Out of Gas)*

The Propane Education and Research Council (PERC) in their CETP courses define an Out-of-Gas situation as follows: It is when the vapor pressure in the vapor distribution system is no longer sufficient for all appliances to operate.



Fixed Liquid Level Gauge  
Used for filling container and not to  
verify if the container has enough  
vapor pressure to operate appliances.

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You cannot precisely (accurately) validate or prove that the appliances have enough vapor pressure to operate by opening the fixed liquid level gauge or by reading the percentage gauge. The fixed liquid level gauge is used to fill the container to a certain level so it is not over-filled. When the vapor coming out changes to a white fog it indicates the container has reached the maximum allowable fill level. The percentage gauge shows an “estimated” percentage of propane volume in the container. Neither the fixed liquid level gauge or the percentage gauge should be used to determine how much pressure there is in the piping system and if the system is out of gas.

The only way to really know if a propane system is completely out-of-gas is to check the tank pressure and to then verify that all appliances are continuing to operate. Using the fixed level gauge or the float gauge to determine whether the propane system is out-of-gas without **verifying the operation of the appliance(s)**, is what gets most companies involved in an insurance claim or costly and prolonged litigation.

There are some other situations that need to be considered in determining whether there has been an interruption in gas service:

- 1 A call is received that the customer is out of gas.
- 2 The driver arrives to make a delivery and the tank gauge is at or near 0%.
- 3 The driver arrives and finds the container service valve shut off.
- 4 The number of gallons delivered indicates the propane container may have been empty.

### *Customer Calls - “I’m Out-of-Gas”*

Any time the customer calls explaining that they are out of gas, it needs to be treated as if the system is Out-of-Gas. This is a perfect opportunity for your customer service representative (CSR) to explain the company procedures.

- An adult needs to be present so a delivery and leak check can be performed.
- Appliances will be put back into service or at least offered to be put back into service, depending on your company policy.
- If during the conversation the customer admits that the system is not out-of-gas, the CSR needs to document the call and points of the conversation.

If a driver is asked to make a delivery due to an Out-of-Gas call and when arriving finds the percentage gauge above 0%, the delivery still needs to be treated as an Out-of-Gas call. **The customer said they were out of gas**, perhaps signaling that one or more appliances are not working. The percentage gauge also may not be working correctly. Making this delivery without performing a leak check **is a big mistake!** Since the facts don’t line up it requires more diligence before just filling the tank.

If the driver can go in the house or other building to verify the appliances are operating, only then may they consider forgoing a leak check. The driver shall document and obtain a customer signature verifying the appliances are operating and the propane system is not out-of-gas. There may be other problems with the appliances such as a malfunctioning safety shut off valve.

# How do you know a propane system is “Out-of-Gas”?

## Risk Engineering

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### *Making a delivery and finding the percentage gauge above 0%*

The driver has to make the decision if the system is Out-of-Gas. If there was no call received from a customer indicating that the propane system is out-of-gas, a driver may believe the gas system is not out of gas. However, if the percentage gauge is near 0%, a driver should see if anyone is home to verify if appliances are operating. Again, opening the fixed liquid level gauge to determine if there is pressure in the tank is not the correct means to determine if the propane gas system is out-of-gas. Some companies have instituted a policy requiring a leak check if the percentage gauge is below 5%. A policy like that is completely discretionary and is not required by any code. Whatever policy you do develop, ensure it is always followed.

What the driver will need to keep in mind is the next point.

### *Gallons Delivered May Be a Sign of an Out-of-Gas Situation*

The number of gallons delivered is not an accurate way of knowing if the system is out-of-gas. However, after a delivery where there is a fire and/or explosion, it is hard to convince a jury that the system was not out-of-gas if the gallons delivered are at or near an 80% delivery. Where the tank is near 0% it would be prudent to hedge on the safe side and complete a leak check or verify all appliances are operating. As a reminder, it is best to verify if appliances are operating before beginning to fill the propane container.

### *Conclusion*

Unfortunately, the Out-of-Gas topic is not easy to put into simple terms. What every company needs to contemplate is how they will determine when a propane system is out-of-gas. The failure to articulate clear policies and procedures can lead to mistakes and catastrophic fires and explosions.

As mentioned earlier, the biggest and most frequent mistake is relying on the fixed liquid level and percentage gauge to determine if the propane system is Out-of-Gas as they are not reliable methods. It is recommended to manage the risk by doing the following:

- 1** Take measures to reduce Out-of-Gas calls.
  - a. Monitor usage
    - i. Installation of tank monitors can help reduce systems running out of gas.
  - b. Increase automatic fill customers.
  - c. Communicate with customers what your Interruption of Service policy is and what your local and state standards are.

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- 2** Educate personnel how to handle calls from customers who say they are Out-of-Gas.
- 3** Train drivers on your company procedures. If they have any doubt, verify the propane system is not out-of-gas and has not been otherwise interrupted.
- 4** Perform leak checks and document the pressure, time held, and if at all possible obtain a customer signature for all deliveries made for propane systems that are Out-of-Gas.
- 5** If a leak check cannot be made during an Out-of-Gas delivery, steps should be made to reduce the possibility of the propane system being turned on before a leak check is performed by a qualified person. Company policy suggestions:
  - a.** If the tank was out-of-gas do not fill propane tank unless an adult is home.
  - b.** If the tank was out-of-gas and you fill the propane tank consider the following:
    - i.** Leave an appropriate warning tag, such as one from PERC, to alert the customer of the Out-of-Gas/Interruption of Service situation and to call your company.
    - ii.** Call the customer to advise the container is shut off. Document the call.
    - iii.** Secure the container, such as with a POL or service valve lock to further prevent someone from turning on the gas. Removing a regulator is not a preferred method.
    - iv.** Document and/or take a photo of the lock and tag on propane container. Make sure you are consistent in taking photos and saving them in a secure place to be referred to when needed.

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