

BUREAU OF STANDARDS

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Section No. 4

Version: 1.0

Procedure No. 8

TITLE: LP Gas Leak Severity Classification

PURPOSE: This document details the severity classification of LP gas leaks by bureau inspectors and the policies associated with this procedure.

All data and observations will be recorded on the inspection worksheet. Worksheets must be transmitted to the Bureau of Standards email account along with all associated inspection records and reports upon completion of the inspection and before the inspector leaves the premises.

Leak Classification and the resulting action taken by the bureau will be determined by evaluation of the facility type, facility location, volume on site, rate of release and most importantly potential hazard to persons or property.

- 1.0. Class I Leak - A leak that indicates an on-going hazard to persons or property that requires immediate action, immediate repair, and/or continuous action until the conditions are no longer hazardous.
 - 1.1. Prompt action in response to a Class I leak may require multiple types of response from the facility personnel such as evacuating the premises, blocking off the area, re-routing traffic, eliminating sources of ignition, venting the area and/or notifying police and fire departments.
 - 1.2. Class I leaks are characterized by any one or more indicators such as a strong odor, vapor cloud, hissing sound, drips and ice/frost formation. These leaks shall be determined whenever possible through appropriate quantifiable testing to be at or above the Lower Explosive Limit (LEL) of 2.1 percent, by volume. Other leaks not meeting these specific criteria are enumerated below.
 - 1.3. Any leak found during in a LP Gas cargo vehicle is considered a Class I leak.
 - 1.4. Any leak found on the liquid side of a piping system or valve designed to shut off the flow of product at a retail dispensing unit is considered a Class I leak.
 - 1.5. Any leak found at the service valve of a bulk plant or consumer storage when in the fully open or closed position is considered a Class I leak.
 - 1.6. Hose leaks, other than permeation as described in NFPA 58 Chapter 7, detected in a systems hoses shall be considered a Class I leak.
 - 1.7. Any system found with multiple Class II leaks may be re-classified as Class I with supervisory approval.
 - 1.8. Any Class II leak found in a system in close proximity to a sensitive area such as a school or large public gathering space may be re-classified as a Class I leak with supervisory approval.
- 2.0. Class II Leak – A leak that poses a low risk of hazard to persons or property or a leak which may be developing due to progression of the failure whose risk may increase without proper action.

These leaks must be addressed but at a lower urgency than Class I leaks.

- 2.1. Action in response to a Class II leak may require multiple types of response from the facility personnel such as blocking off the area, eliminating sources of ignition and/or venting the area.
 - 2.2. Class II leaks are characterized by any one or more indicators such as a faint odor and/or the observation of oily residue around any container, container fitting, pipe or valve connection point. These indicators of possible leaks must be verified by sustained and rapid bubble formation after the application of approved leak detection solution to the suspect area. These leaks shall be determined whenever possible through appropriate quantifiable testing to be within 10 percent below the LEL of 2.1 percent, by volume. Other leaks not meeting these specific criteria are enumerated below.
 - 2.3. All leaks found at the container fittings of retail dispensing units where the fitting is connected to the vapor space will be considered a Class II leak.
 - 2.4. Any system found with multiple Class III leaks may be re-classified as Class II with supervisory approval.
 - 2.5. A Class II leak must be monitored by the system owner to ensure no worsening occurs until remediation can be scheduled.
- 3.0. Class III Leak - A Class III leak is non-hazardous at the time of detection and can reasonably be expected to remain not hazardous until remediation can be completed.
- 3.1. Class III leaks are characterized by any one or more indicators such as a faint odor and/or the observation of oily residue around any container, container fitting, pipe or valve connection point. These indicators of possible leaks must be verified by the application of approved leak detection solution to the suspect area yielding slow formation of “foam” type bubbles. These leaks shall be determined whenever possible through quantifiable testing to be more than 10 percent below the LEL of 2.1 percent, by volume.
 - 3.2. A Class III leak must be monitored by the facility to ensure no worsening occurs until remediation can be scheduled.
- 4.0. Special Considerations
- 4.1. Any deviations from this procedure must be approved by a supervisor and documented on the inspection worksheet.
 - 4.2. Any leak detected that may not be suitable for testing by leak detection devices (poor access to location and/or poor environmental conditions) shall be classified based on the physical characteristics enumerated in sections 1.0 -3.0, with prior supervisory approval.
 - 4.3. All leaks must be photographed for supervisory review.
 - 4.4. Action taken regarding the classification of the leak is detailed in Procedure 4-X.

Version	Rev. Date	Change Control Comments	Approver