

FAQs from the NWGLDE

... All you ever wanted to know about leak detection, but were afraid to ask.

What Is CITLDS Leak Detection All About?

In this issue of FAQs from the National Work Group on Leak Detection Evaluations (NWGLDE), we follow-up on a FAQ from LUST-Line #50 (August 2005). At that time we discussed protocols used for evaluating CITLDS without explaining what CITLDS leak detection is all about. We now present the rest of the story. (Please note: the views expressed in this column represent those of the work group and not necessarily those of any implementing agency.)

Q. What exactly is a CITLDS?

A. CITLDS stands for "Continuous In-Tank Leak-Detection System." It is a volumetric leak-detection method that does not require an extended shut-down period in order to conduct a leak test. The system gathers pieces of data from all designated input devices during tank "quiet time" and then performs the leak-test calculations when enough data have been recorded. The term continuous, in this situation, implies that data are collected on a regular basis and when available. Most CITLDS methods employ the use of an Automatic Tank Gauge ("ATG") to gather product-level data and some use additional information from input devices such as the dispenser totalizers and point-of-sale records.

CITLDS are well suited to facilities that are open 24/7, as long as the volume of product sold from the storage system does not exceed the throughput limit of the CITLDS method. There must be sufficient data collected in order to perform the leak-test calculations. For example, if there is not enough "quiet time," then not enough data will have been collected to complete a test. If enough suitable data have not been collected during the month to perform a leak test, the tank system must be shut down and a "static" test performed.

Q. Why are there two separate line entries in the "List" index for Continuous In-Tank Leak Detection Systems?

A. Currently there are two types of CITLDS methods on the NWGLDE List. These types are referred to as CITLDS "Continuous Automatic Tank Gauging" and CITLDS "Continual Reconciliation." The primary distinction between these two is that the ATG systems use only product-level data to conduct a test and are most similar to standard, or static, ATGs that test only the tank. Reconciliation systems use both product-level data and sales data to see if the volume of fuel dispensed from the tank, as measured from ATG readings, is equal to the volume of fuel measured by the meter in the dispenser.

"Continuous Automatic Tank Gauging" systems use an ATG probe to collect data during tank "quiet time." An algorithm then combines data from a number of such periods until there is enough evidence to make a determination about the leak status of the tank. Because these systems typically monitor only the liquid level in the tank, they test only the tank, not the piping. This type of system functions

like an ATG, except that it does not require the tank to be taken out of service for a set period of time whenever a test is conducted. Instead, it uses data from shorter, stable time periods and combines the results to estimate a leak rate. If sufficient good-quality data has not been obtained over the month, the system may be programmed to default to a static or shut-down ATG test which requires the tank to be out of service for a few hours.

"Continual Reconciliation" systems combine continuous product-level and temperature monitoring from the tank with data from dispensing meters. Data from delivery and point-of-sale records may also be included. Because of multiple-device data input, the system is capable of detecting leaks or unexplained losses of product from the tank, pressurized lines, or even dispensers. In addition, it can combine data from times when the tank is static (no dispensing activity) as well as when the tank is active to monitor the system for a leak. (For a more in-depth discussion of "Continual Reconciliation," refer to "Continual Reconciliation Applications for Active Fueling Facilities" on page 4 of this issue of LUSTLine.

All CITLDS methods are volumetric and designed to operate continuously or nearly continuously in order to collect the necessary data for the determination of a quantitative leak rate. They may use different combinations of data and inputs but they share the same characteristic of monitoring tank and/or other data continuously for days, weeks, or months, and then providing leak-detection capabilities and leak status on demand once the initial data requirements are met. ■

About the NWGLDE

The NWGLDE is an independent work group comprising 10 members, including 9 state and 1 U.S. EPA member. This column provides answers to frequently asked questions (FAQs) the NWGLDE receives from regulators and people in the industry on leak detection. If you have questions for the group, please contact them at questions@nwglde.org.

NWGLDE's Mission:

- Review leak-detection system evaluations to determine if each evaluation was performed in accordance with an acceptable leak-detection test method protocol and ensure that the leak-detection system meets USEPA and/or other applicable regulatory performance standards.
- Review only draft and final leak-detection test method protocols submitted to the work group by a peer review committee to ensure they meet equivalency standards stated in the USEPA standard test procedures.
- Make the results of such reviews available to interested parties.