STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION

DIVISION OF UNDERGROUND STORAGE TANKS

COMPLIANCE GUIDANCE DOCUMENT - 104

EFFECTIVE DATE - July 29, 1996
(REVISION DATE - July 19, 1999)

RE: REQUIREMENTS FOR AUTOMATIC TANK GAUGING

The purpose of this guidance document is to assist the regulated community in understanding the regulatory requirements for automatic tank gauging. Automatic tank gauging is allowed by *Rule 1200-1-15-.04(3)(d)* Automatic tank gauging, and *Rule 1200-1-15-.04(3)(h)* Other methods.

***Rule 1200-1-15-.04 (3) (d)* states:**

Automatic tank gauging. Equipment for automatic tank gauging that tests for the loss of petroleum and conducts inventory control must meet the following requirements:

1. *The automatic product level monitor test can detect a 0.20 gallon per hour leak rate from any portion of the tank that routinely contains petroleum and*

2. *Inventory control (or another test of equivalent performance) is conducted in accordance with the requirements of rule 1200-1-15 -.04(3)(a).*

***Rule 1200-1-15- .04 (3) (h)* states:**

Other methods. Any other type of release detection method, or combination of methods, can be used if:

1. *It can detect a 0.20 gallon per hour leak rate or a release of 150 gallons within a month with a probability of detection of 0.95 and a probability of false alarm of 0.05; or*

2. *The Division may approve another method if the owner and operator can demonstrate that the method can detect a release as effective as any of the methods allowed in subparagraphs (c)-(h) of Rule 1200-1-15-.04 (3). In comparing methods, the Division shall consider the size of release that the method can detect and the frequency and reliability with which it can be detected. If the method is approved, the owner and operator must comply with any conditions imposed by the Division on its use to ensure the protection of human health and the environment.*

INTRODUCTION

An automatic tank gauge (ATG) is a device permanently installed in an underground storage tank (UST). The most common types of in-tank monitors are:

1. ATGs that can only report the level of product in an UST.

2. ATGs that can monitor and report the level of product and conduct a leak detect test when the UST is taken out of service for a sufficient (as determined by the manufacturer) length of time.

3. ATGs that can continuously monitor the level of product in an UST, then perform a statistical analysis of the accumulated data to determine if a release has occurred. This type of ATG does not require that the UST be taken out of service if sufficient data has been collected in 30 days.

Some ATGs are capable of meeting tank tightness testing requirements. Also, some ATG devices can be combined with electronic line leak detectors and/or interstitial monitoring systems for release detection on piping.

REQUIREMENTS FOR AUTOMATIC TANK GAUGING

A. ATG as a sole method

ATGs used as a stand alone method for UST release detection must be capable of detecting at least a 0.20 gallon per hour (gph) leak rate. Unless the ATG was installed prior to December 22, 1990, it must have a probability of detection of at least 95% and probability of false alarm of 5% or less. The ATG leak detect test results must be collected at least once every month; **OR**

B. ATG Used for Inventory Control

Inventory control (or another test of equivalent performance) is conducted in accordance with the requirements of *Rule 1200-1-15-.04(3)(a),* if the ATG is not used as a stand alone method for UST release detection **and** *Rule 1200-1-15-.04(a)1 and 2:*

1. UST systems that meet the performance standards (corrosion protection and spill/overfill protection) in *Rule 1200-1-15-.02(1)* (new tank standards) or *Rule 1200-1-15-.02(2)* (upgrade standards) must use tank tightness testing (conducted following *Rule 1200-1-15-.04(3)(c))* at least every 5 years for 10 years or until December 22, 1998, whichever date is later; **or**

2. UST systems that do not meet the performance standards (corrosion protection and spill/overfill protection) in *Rule 1200-1-15-.02(1)* (new tank standards) or *Rule 1200-1-15-.02(2)* (upgrade standards) must use tank tightness testing (conducted following *Rule 1200-1-15-.04(3)(c))* at least once a year until December 22, 1998 when the tanks are required to be upgraded or permanently closed.

For more information concerning inventory control and tank tightness testing see Compliance Guidance Documents (CGDs) - 102 and 112 respectively.

Owners and/or operators must be able to demonstrate to the Division proficiency with the ATG device during an inspection.

C. ATG Used for Tightness Testing

Automatic Tank Gauging (ATG) systems may be used to conduct periodic tank tightness testing (excluding lines) if the following requirements are met: the ATG must be permanently installed in the UST; the ATG must be capable of performing a 0.10 gph leak test with a probability of detection of at least 95% and a probability of false alarm of 5% or less; and the ATG is third party certified.

If an owner/operator uses an ATG to meet periodic tightness testing requirements, one of the following conditions must be met:

1. Conduct an underfill tank tightness test with the ATG in conjunction with an ullage test for the unfilled portion of the tank. These tests must be conducted with no change in product level. The tank must be idle during the test; or

2. The ATG must test the tank at the maximum capacity allowed by the overfill device; or

3. Conduct an underfill tank tightness test with the ATG at the highest level the tank has held product for the last twelve months. Inventory records **must** be provided to determine the maximum level.

If an owner/operator uses an ATG to meet tightness testing requirements at new tank installation, release investigations, upgrades, and repairs, the tank must be tightness tested following items 1 or 2 above. The product piping must be tested separately to satisfy the tightness test requirement.

REPORTING AND RECORDKEEPING

If monitoring results indicate the UST has had a release **above the established leak rate threshold of the ATG device, as determined through third party certification,** then the owner and/or operator shall notify the Division within 72 hours and begin release investigation and confirmation steps in accordance with *Rule 1200-1-15-.05(3).* This reporting requirement applies unless the monitoring device is found to be defective, and is immediately repaired, recalibrated, or replaced, and additional monitoring does not confirm the initial result. If the monitoring device is determined to be defective and a suspected release was not reported to the Division, the owner/operator shall document that the device was defective and the actions taken for correction. This documentation shall also include additional monitoring results.

If the results from any tightness testing indicate the tank and/or lines have had a release of petroleum, the owner/operator must notify the Division within 72 hours. The owner/operator must take immediate action to prevent any further release of petroleum into the environment, and take immediate action to identify and mitigate fire, explosion, and vapor hazards. The owner/operator must repair, replace, or upgrade the UST and/or piping, and begin corrective action in accordance with *Rule 1200-1-15-.06.*

Release detection records must be maintained and available for inspection by the Division. ATG leak detect test results must be collected at least once every month. The last twelve months of leak detection results (ATG "printouts") are required, and if applicable, the most recent tank and/or line tightness test results.

Records should be maintained showing the ATG device was installed according to the manufacturer's specifications. Records of all calibration, maintenance, and repairs of release detection equipment permanently located on-site must be maintained for at least one year after the servicing work is completed. Any schedules of required calibration and maintenance provided by the release detection equipment manufacturer must be retained for five (5) years from the date of installation. Note: Records of UST system repairs must be maintained for the life of the UST system.

THINGS TO REMEMBER

- If the ATG only measures the product level in the UST then inventory control must be conducted monthly accompanied with a periodic tightness test, performed in accordance with the time schedule specified in the regulations.

- If the ATG has the capability to perform a 0.20 gallon per hour (gph) leak detect test, has been properly programmed, and is being used monthly, then with evidence of the test, it meets the standards for monthly monitoring for tanks.

- Some ATGs can exceed the minimum requirements. However, monthly records must indicate the UST system is not leaking. If the ATG exceeds the performance standard (0.20 gph leak rate), then it must meet the leak rate established for that device.

- The last twelve months of release detection records shall be maintained at all times.

- An approved method of release detection for piping must be selected in addition to the ATG. For additional information concerning release detection requirements for UST piping, refer to CGD - 110 for pressurized piping or CGD - 111 for suction piping.