

UST/AST Installation Inspection Guidelines

The purpose of the installation inspection by the Commerce or LPO agent inspector is to maintain regulatory oversight of systems that have a potential to pose significant risk to fire safety and environmental contamination if not properly installed. The inspector functions as a liaison for the state regulatory and enforcement program and as a monitor to protect the interests of the owner.

The concept behind the installation inspection requirements and Departmental expectation is to monitor a minimum of two milestones in the installation process. Two inspections may not be adequate to maintain proper regulatory oversight, depending upon the magnitude or scheduling of the installation. Regulatory inspection oversight may be maintained at some AST installations through one inspection just prior to placing the system in operation.

The first inspection milestone is after the major excavation work has been completed and the primary components of the system are in place. The piping will be exposed and the line pressure test will be taking place prior to connection to the dispenser and the tank.

The final inspection milestone will be conducted prior to placing the system into operation. This inspection is intended to confirm the previous work, verify the integrity of the system and the leak detection methodology in place, and bring the administrative process to closure.

The Department has taken the position that if the contractor gives adequate notice to the LPO for a pending installation inspection, conflicts with the LPO's schedule should not hold-up the contractor's progress. This does not mean that the inspector's inspection obligations or the regulatory oversight are diminished. The inspector may authorize the contractor to continue, but the contractor must allow provisions for verification of specific inspection points. Examples are burial depth, slope, flex connectors, anodes, isolation bushings, etc. The inspector has the authority to require that the contractor provide specific accommodations to facilitate inspection. Restricting the amount of trench backfilled and/or providing photographs are just two means an inspector may use to maintain verification oversight.

The final inspection is extremely important. The inspector conducting the final inspection is signing the form confirming that the final and all prior inspections have been thorough, all components are in place, and that no changes have occurred that are not documented. It is the Department's expectation that the final inspection will involve a walk-through visual inspection of the entire system from the storage tank to the dispenser. The inspector will have access covers and dispenser doors opened to accommodate a visual verification. The inspector has discretion to require or verify that alarms are functional, etc.

The accompanying Installation Inspection Guide is designed to serve as an internal check for the inspector, enabling the inspector to gauge his/her thoroughness and consistency when conducting installation inspections. This form can be used in many ways, individually or by the agency when multiple inspectors are involved with a site through the duration of the installation.

Installation Inspection Expectations:

The Department does not expect the LPO inspector to attend the duration of component integrity or diagnostic testing. It is the expectation of the Department that the inspector visit the site at some point in time during or immediately after a component test, such as the initial pipe test, is conducted. The department expects that the inspector will review component test results to confirm that the test procedure and results are documented.

Primary Site Inspection Components

These guidelines should be used in conjunction with the installation checklist (SBD-6294).

A. Administrative

Plan review verification.

- Approved plans on site.
- Installation Inspection Checklist started.
- Tank capacity and number corresponds with submittal.
- Tank setbacks within restrictions. (Property line, buildings, LP tanks, etc.)
- Dispenser setback. (Building, retail/nonretail, kerosene dispensing, etc.)
- Access manways installed corresponding with submittal.
- Overfill devices confirmed.
- Spill containment confirmed.
- All leak detection methodology has Material Approval.
- If changes have been made is there a plan revision on site or pending revision?
- Tank soap test documentation on site.
- Material Approval (if applicable) for pipe, leak detection, tank, flex connectors, dike liners.
- Installation according to Material Approval or Petition For Variance.

B. Piping

Precision Test.

- Primary piping been completed and test information documented by technician.
- Secondary piping been completed and test information documented by technician.

Peripherals.

- Configuration of piping code complying.
- Steel piping has number of anodes as indicate on plan review.
- Piping has mechanical listed flex connectors at tank and dispenser (except for flexible piping with material approval).
- Emergency shut-off valve with fusible link is positioned according to manufacturer's specifications.
- Vent pipes for class 1 products minimum 12' above grade and 5 feet from building openings.
- Vent pipes for class II products minimum 4' above grade.

C. Cathodic Protection Systems

- Anodes placed as approved.
- Impressed current CP - conductor buried at least 24" below finished grade.
- Test stations installed.

- Test conducted for effectiveness, if so is copy of test results on site.

D. Release Detection

- Precision test has been conducted on tank and lines prior to placing the system into operation.
- Leak detection methodology applies to the system in place.
 - Size of tank.
 - Manifolded tanks.

Automatic Tank Gauging.

- Diagnostic and calibration test conducted on ATG system.

Automatic Tank Gauging & Inventory Control.

- Diagnostic and calibration test conducted on ATG system.
- Inventory Control recordkeeping system established.

Interstice Monitoring.

- All interstice monitoring systems whether mechanical or electrical, require precise installation, testing, and in some cases calibration.
- Recordkeeping system established.

Inventory Control & Tightness Testing.

- Recordkeeping system established.

Statistical Inventory Reconciliation.

- Recordkeeping system established.

Manual Tank Gauging.

- Recordkeeping system established.

Electronic Line Leak Detector

- Diagnostic check and alarms tested and verified operational.
- If used for startup test and/or annual precision test of piping a diagnostic check and documentation of a passed tightness test (to specifications on Material Approval) of pipe.

Mechanical Flow Restrictor

- Verification that mechanical flow restrictor was checked to trip at 3 GPH (max.) flow rate.

E. Overfill Protection

- Verify 90% alert mechanism and proximity to delivery driver.
- Verify 95% shut-off mechanism.

F. Site Overview Inspection

- Fill pipe caps and manhole covers color coded appropriate for product.
- An emergency breakaway on each Class I & II liquid hose.
- Are fuel oil and kerosene dispensers at least 10 feet away from dispensing equipment for class 1 liquids.
- Operating instructions and emergency instructions for unattended self-service stations.
- Stop motor and no smoking signs posted.
- Are dispensers mounted and bolted down properly.
- Emergency shut off installed inside building and working.
- Push-to-stop button on dispensers (if required).
- Unattended fueling - Emergency Shut-down device installed and visible.
- Unattended fueling - Fire Department notification posted.

G. Documentation and Training

- Site address, installation specifications and data on installation plans, installation inspection checklist, and inventory forms match.
- Components installed correspond with components on plan submittal.
- Copy of startup test(s) included with submittal of Installation Checklist.
- Owner/operator been trained in the use of the leak detection and monitoring system *before* the system has been place into service.
- Owner has been provided with all installation, operating instructions, and Material Approval documents for all components of the tank system.
- Owner/operator has all documents available for inspection, as required.

If all the respective requirements of this guideline cannot be met the system should not be allowed to be put into service.

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