



west virginia department of environmental protection

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WEST VIRGINIA ABOVEGROUND STORAGE TANK PROGRAM

Aboveground Storage Tank Installation Guidance

This general guidance is being provided for the owner or operator who plans to install a regulated AST system on or after August 1, 2016. The information provided is a summary of some of the major points to consider when installing an AST system.

Definitions

- New AST means a tank for which physical installation began on or after August 1, 2016.
- Install means activities to construct, reconstruct, erect, or put into service a storage tank.
- “Reconstruction” means the work necessary to reassemble a storage tank that has been dismantled and reassembled at the site or at a new site.
- Regulated AST means an AST that meets the definition of a level 1 or level 2 regulated AST.

Registration

- AST cannot be operated after July 1, 2015 unless properly registered and applicable fees paid.
- AST must be registered within thirty days of installation or acquisition, but they cannot be operated until they are properly registered and applicable fees paid. As long as the AST is not operated, the tank owner has 30 days to register the tank after acquisition or installation.

Financial Responsibility

- On or after August 1, 2016, the owner or operator of a regulated AST must demonstrate financial responsibility (FR) for taking corrective action caused by accidental releases arising from the operation of aboveground storage tank systems prior to operating the AST. Refer to Section 12 of the AST Rule for acceptable FR mechanisms and amounts.

Siting

- New ASTs storing flammable or combustible liquids must be positioned to meet all applicable setback and distance from buildings required by the local jurisdiction and the State Fire Marshal’s office.

- Owners/operators of new ASTs that are using visual methods alone for leak detection must ensure a minimum spacing of not less than three (3) feet between tanks and between tanks and dike or vault walls, or a substantially unobstructed view to determine leakage.
- Owners/operators of new ASTs to be constructed in karst terrain must submit to the Secretary documentation of the new construction design criteria and engineering specifications to indicate that surface or subsurface conditions will not result in excessive settling or unstable support of the proposed regulated AST. Designs must be approved by a professional engineer or an individual certified by API or STI to perform installations.

AST design

- New ASTS must be designed, constructed, and installed according to the manufacturer's or fabricator's instructions, the AST Rule, and industry standards.
- All new Level 1 ASTs installed (i.e. **constructed, reconstructed, erected, or a tank put into service**) after August 1, 2016 shall be double walled, double bottomed or placed on a Release Prevention Barrier that allows for releases from all parts of the AST to be visually observed and contained.
- A new AST must have a stable foundation, capable of supporting the total weight of the tank when full of product without movement, rolling or unacceptable settling.
- The AST foundation must minimize corrosion and provide positive drainage of water away from the base.
- ASTs located in areas subject to flooding must be protected from floatation.
- ASTs storing flammable liquids, combustible liquids or other liquids required by industry standards or the manufacturer to have normal and emergency vents shall be so equipped.
- All regulated metallic ASTs installed after August 1, 2016 that have tank bottoms in contact with soil or an electrolyte shall be protected from corrosion.
- Regulated piping (piping up to the first point of isolation) must be compatible with the substance stored and properly designed to protect against corrosion and physical damage, including damage from stresses arising from settlement, expansion, contraction, vibration, and shock.
- New ASTs must have a gauge or monitoring device that accurately indicates the level or volume in the tank and is visible to the individual responsible for the transfer of the product; or a high-level alarm with an automatic high-level cut-off device or a high-level alarm with a manned operator shutdown procedure in operation; or any other overfill device approved by the Secretary in writing.
- New ASTS must have a secondary containment system that collects and contains a release from an AST and its ancillary equipment up to the first point of isolation.
- ASTs must be monitored for leak detection at least once per calendar month, using a method or combination of methods that are capable of detecting a release from any portion of the AST.
- If a new AST is to be installed in a vault, the vault must be designed according to sound engineering practices. An AST must be in its own vault and there may be no backfill around the tank. Sufficient space between the tank and vault wall must be present to allow for inspection.
- Tanks installed in vaults must be designed for aboveground ground use and they must be suitably anchored to withstand uplifting from water or a release from the tank.
- The need for fire suppression for ASTs containing flammable and combustible liquids must be considered when placing a new AST in a vault.

Secondary Containment

- Double walled ASTs serve as secondary containment so long as substance transfer and the interstitial space are continuously monitored. However, piping and ancillary equipment associated with the double walled AST must have secondary containment up to the first point of isolation.
- Permeability of the secondary containment for new Level 1 ASTs installed after August 1, 2016 must be less than 1×10^{-7} cm/sec at anticipated hydrostatic head and shall be verified at the time of installation.
- The owner/operator shall ensure that secondary containment areas are designed and certified by a professional engineer or other qualified person to prevent the discharge from the containment area of the entire capacity of the largest single tank, assuming a full tank, and sufficient freeboard to contain all collected precipitation

Testing at Installation

- ASTs shall be tested for tightness at installation and reconstruction.
- Regulated piping shall be tested for tightness at installation and after repairs. Any deficiencies found must be remedied prior to placing the piping into service.

Records Related to Installs

- Original installation and modification of tank system design specifications, including applicable manufacturer's documentation for the tank system and any regulated ancillary equipment must be maintained for each AST.
- All manufacturer's instructions, performance claims, and their manner of determination described in writing by the equipment manufacturer or installer shall be retained by the owner or operator for the life of the regulated AST and made available to the Secretary upon request.
- All regulated AST system components, including piping and ancillary equipment up to the first point of isolation, installed after August 1, 2016 shall have baseline data including: floor and wall or shell thickness measurements; material certifications; and all manufacturer's instructions and performance claims.