

REM-1

2020

Overfill Prevention Equipment Requirements for Aboveground Petroleum Storage Tanks

A gauge and alarm system, designed to prevent releases to the environment by alerting the person filling the tank of a potential overfill problem, are required for all aboveground storage tanks (ASTs), even those with a capacity less than 660 gallons, that are regulated by Env-Or 300. Overfill prevention equipment has been a requirement for all regulated ASTs since April 25, 2000.

Regulated AST facilities include:

- Those facilities having a single aboveground storage tank system with an oil storage capacity of more than 660 gallons.
- Those facilities with two or more aboveground storage tank systems, to include 55-gallon drums, having a combined oil storage capacity of more than 1,320 gallons, intended for storage, transfer or distribution of oil as defined in RSA 146-A:2,III.

Regardless of other oil storage, ASTs that store heating oil (to include used engine, transmission, gear or hydraulic oil) used solely for heating an on-premise structure are exempt from the requirements of Env-Or 300 if they have a combined storage capacity of 1,320 gallons or less.

Overfilling is the most frequent cause of oil spills from ASTs and is usually associated with human error. The purpose of requiring a gauge and high-level alarm is to provide a convenient (audible and visible) signal to inform the person filling the tank of the product level in the tank and that the tank is nearly full. Remember, the most effective method of dealing with the safety concerns and the high cost of cleaning up an oil spill is to prevent one from happening. The requirements for overfill protection for all regulated ASTs are as follows:

Gauge and Alarm Must Operate Independently of Each Other – That is, the sensor or float that operates the gauge shall not be the same mechanism that triggers the alarm. This provides a back-up method of determining the liquid level or triggering an alarm in the event one system fails.

Gauge Requirements – The gauge shall be precise enough to be useful in performing inventory monitoring, potentially avoiding the need to routinely “stick” the tank to determine product level if the facility owner is required to do so by Env-Or 306.03. The “pop-up” type gauge typically found on home-heating oil tanks does not meet this requirement for tanks having a capacity greater than 660 gallons.

Alarm System Requirements – According to Env-Or 305.11(b)(2) of the New Hampshire Code of Administrative Rules, the high-level warning alarm shall be audible and visible to the person controlling transfer of oil to the AST. That means the alarm must make a sound (horn, bell, whistle,

siren, etc.) and illuminate a light when the product level in the tank is too high. It shall be placed where the person filling the tank can see and hear the alarm. This rules out relying on a vent alarm alone. To meet this requirement, there must be a power source to activate the high-level alarm. Alarm systems that obtain their power source solely from batteries are not acceptable unless specifically approved by NHDES. Vent whistles may be suitable only for tanks having a capacity less than or equal to 660 gallons.

Alarm Activation – The alarm must be activated when the product level reaches 90% of the tank capacity on all ASTs that have a capacity of 12,000 gallons or less. For ASTs with a capacity greater than 12,000 gallons, the alarm must activate at a point that is 3% less than the calculated maximum safe fill height. (The calculated maximum safe fill height is determined by multiplying the rate the tank is filled by the time it takes to completely stop product flow into the tank, but not less than 2 minutes, and subtracting this volume from the total volume of the tank.)

Requirements for Regulated ASTs Not Larger than 660 Gallons – Regulated ASTs sized 660 gallons or smaller must also have overfill protection. However, pop-up style gauges and vent alarms are adequate for tanks of this size. Also, tanks that are filled by hand at a slow rate, such as a typical used oil collection tank, may not require an alarm.

Additional Overfill Prevention Considerations – In addition to gauge and alarm requirements, double-walled tanks, and other tanks having a vent that is located such that an overfill would not be contained within secondary containment, shall be equipped with a mechanism that will automatically prevent the flow of oil to the tank when at a critical level. The mechanism must shut off flow when the tank is filled to 95% of the tank capacity on ASTs that have a capacity of 12,000 gallons or less. For ASTs with a capacity greater than 12,000 gallons, the alarm must activate at a point that is 1% less than the calculated maximum safe fill height. This has been a requirement for all such ASTs since May 28, 2008.

No Prior Approval Required – Specific NHDES approval is not required to install overfill protection equipment. However, if you have a question whether a specific gauge, alarm system or flow shut-off mechanism is acceptable and meets the requirements of Env-Or 300, please contact NHDES at (603) 271-3899.

Penalties – Owners of regulated AST facilities not equipped with the required overfill protection devices may be subjected to an administrative fine of \$2,000 for each missing overfill protection device on each AST. For example, if you have two ASTs that do not have gauges and high-level alarms installed, you will be subject to an administrative fine of \$8,000. The AST facility could also be subject to loss of eligibility for access to state petroleum spill cleanup reimbursement funds established by RSA 146-D, E and F.

DISCLAIMER: Information contained in this fact sheet is current as of January 1, 2020. Statutory or regulatory changes that may occur after that date may cause part or all of the information to become invalid. If there are any questions concerning the current status of this information, please contact us at (603) 271-3899.