

VENTURA COUNTY AIR POLLUTION CONTROL DISTRICT

RULE 74.26 - CRUDE OIL STORAGE TANK DEGASSING OPERATIONS

(Adopted 11/8/94)

A. Applicability

Effective 3/31/95, this rule shall apply to:

1. Any aboveground crude oil or produced water storage tank that is equipped with a vapor recovery system, and:
 - a. Has a storage capacity of 2,000 barrels and stores a liquid having a modified Reid vapor pressure (mRVP) of 3.4 pounds per square inch (psi) absolute or greater, or
 - b. Has a storage capacity greater than 2,000 barrels.
2. Any external or internal floating roof crude oil tank that has a vapor space of 2,000 barrels or more when the tank's roof is resting on the tank's inner roof supports.

B. Requirements

1. No person shall conduct or allow the degassing of any storage tank subject to this rule, unless the emissions are controlled by:
 - a. Liquid displacement into a vapor recovery system, flare, or fuel gas system, or
 - b. An air pollution control device that has a vapor destruction and removal efficiency of at least 95 percent until the vapor concentration in:
 - 1) Aboveground crude oil or produced water tanks equipped with a vapor recovery system, is less than 10 percent of the tank's initial vapor concentration determined immediately prior to the tank degassing, or less than 10,000 ppmv, measured as methane, or
 - 2) Floating roof tanks, is less than 10,000 ppmv, measured as methane.

Fugitive emissions that do not qualify as a leak shall be allowed around tank openings such as a manhole during a tank degassing operation performed in compliance with this rule.

2. Any receiving vessel used during a tank cleaning operation shall either be bottom loaded or shall be loaded by submerged fill pipe. Any vapors emitted from such vessels during a tank degassing operation shall be controlled pursuant to Subsection B.1.b.
3. Except during an emergency, the Air Pollution Control Officer (APCO) shall be notified verbally or in writing at least 48 hours prior to starting any tank degassing operation. Such notification shall include an identification of the tank(s) to be degassed and the air pollution control method to be employed. If a tank degassing operation was required due to an emergency, the APCO shall be notified as soon as reasonably possible but no later than four hours after completion of the operation.

C. Exemptions

1. The provisions of this rule shall not apply to any tank exempt from vapor recovery requirements pursuant to Subsections D.1, D.3, and D.4 in Rule 71.1 and Subsections G.1.a, G.1.b, and G.2 in Rule 71.2.
2. The provisions of Section B of this rule shall not apply to in-service tanks undergoing maintenance, including but not limited to repair of regulators, fittings, deck components, hatches, valves, flame arrestors, or compressors, or any leaks found pursuant to the operator inspection requirements in Rule 74.10, provided that (1) the operation will take no longer than 24 hours to complete and (2) the maintenance operation does not require the complete draining of product from the tank. 5.]
3. This rule shall not apply to vessels rated and operated to contain normal working pressures of at least 15 psi gauge without vapor loss to the atmosphere.

D. Recordkeeping:

1. Any person using an air pollution control device to comply with this rule shall record:
 - a. The vapor concentration in parts per million (ppm) and gas flow rate in cubic feet per minute entering and exiting the device (except for a flare) upon beginning use of the device and every thirty minutes thereafter. The instrument used to measure vapor concentration shall meet the specifications of EPA Method 21, and
 - b. The tank's vapor concentrations determined in accordance with Subsection E.3, and

- c. If a refrigerated condenser is used, the condenser temperature in degrees fahrenheit upon beginning use of the condenser and every thirty minutes thereafter.
2. All records shall be maintained for at least two years from the date of each entry and shall be submitted to the APCO upon request.
3. Any person claiming an exemption for a storage tank based on mRVP shall provide records that demonstrate that the liquid stored in the tank has a mRVP less than 3.4 psi absolute.

E. Test Methods

1. The Reid vapor pressure shall be determined by ASTM Method D 323-82.
2. The methods used for determining the vapor destruction or removal efficiency of an air pollution control device shall be:
 - a. EPA Method 2A for measuring the vapor flow through pipes.
 - b. EPA Method 25A for measuring the vapor concentration entering and exiting the device.
3. Compliance with Subsection B.1.b, shall require that the tank vapor concentration remain at or below the specified level for at least one hour as demonstrated by measuring the vapor concentration at least four times at 15-minute intervals. The monitoring instrument used to measure the vapor concentration shall meet the specifications of EPA Method 21. The probe inlet of the monitoring instrument shall be located one foot above the bottom of the tank or one foot above the surface of any sludge material on the bottom of the tank. For upright, cylindrical aboveground tanks, the probe inlet shall be (1) located at least 2 feet away from the inner surface of the tank wall and (2) if samples are withdrawn from a manhole, inserted in an opening of no more than one inch diameter on a flexible or inflexible material that is impermeable to reactive organic compound (ROC) vapors, secured over the manhole.

F. Definitions:

1. "Aboveground tank": Any tank, including pipes and ancillary connections used for the storage of organic liquids, that is more than 50 percent above the surface of the ground.
2. "Air pollution control device": A device such as a thermal or catalytic incinerator, a carbon adsorber, a condenser, or any such combination that functions by destroying or recovering a stream of ROC vapors such that only a small fraction of the ROCs that enter the device are emitted to the atmosphere. A

flare shall be considered to meet a vapor destruction and removal efficiency of 95 percent. Air pollution control device does not include a vapor recovery system.

3. "Bottom loaded": A receiving vessel is bottom loaded when the liquid transfer and vapor return lines have separate, independent, and dedicated attachments on the truck or tank, when the inlet is flush with the tank bottom, and when the truck and trailer hatches remain closed during liquid transfer.
4. "Crude oil": Any naturally-occurring, unrefined petroleum liquid.
5. "Degassing": The removal of organic vapors from a stationary storage tank for the purpose of cleaning, removing the tank, cleaning the tank's interior, or making repairs to the tank that would require the complete removal of product from the tank.
6. "Emergency": An unplanned and unexpected event that, if not immediately attended to, presents a safety or public health hazard or an unreasonable financial burden.
7. "External Floating Roof": A floating roof, consisting of a pontoon-type or double-deck-type cover that rests on the surface of the liquid contents and is properly installed, properly maintained and in good operating order. External floating roof seals comply with the criteria specified in Section D and Section E in Rule 71.2.
8. "Internal Floating Roof": A fixed roof tank with an internal-floating-type cover consisting of a pan, pontoon, or double-deck that rests on the liquid surface, which is properly installed, properly maintained in good operating order and with internal floating roof seals that comply with the criteria specified in Section D and Section F in Rule 71.2.
9. "Leak":
 - a. A leak exists when a reading in excess of 10,000 ppm, as methane, above background, is obtained using an appropriate portable hydrocarbon analyzer and when sampling is performed according to the procedures specified in EPA Method 21 - Appendix A 40 CFR Part 60, or
 - b. A leak exists when the dripping of liquid containing reactive organic compounds at a rate of more than three (3) drops per minute is observed.

A "leak" is not a gaseous emission from pressure relief devices on tanks when the process pressure exceeds the limit specified for the device.
10. "Liquid Displacement": The removal of ROC vapors from within a storage tank drained of liquid product by introducing into the tank a liquid having an ROC

modified Reid vapor pressure (mRVP) of less than 0.5 psi absolute until at least 90 percent of the tank's vapor volume has been displaced, with the mRVP determined using American Standard for Testing Materials (ASTM) D 323-82 conducted at 68°F.

11. "Modified Reid Vapor Pressure" (mRVP): the Reid vapor pressure measured at 68°F using ASTM D 323-82.
12. "Petroleum liquid": Crude oil or any crude oil distillate such as, but not limited to, fuels used in motorized vehicles or engines.
13. "Produced Water": Water associated with the production, gathering, separation, and processing of crude oil.
14. "Receiving vessel": A vessel used to receive liquids or sludge material removed from an ROC liquid storage tank during a tank degassing operation.
15. "Sludge material": Solid or semisolid material such as basic sediment that deposits on the bottom of crude oil or produced water storage tanks. Sludge material is not considered the liquid product in tanks that is regularly transferred, used, or sold as a part of normal business operations.
16. "Submerged fill pipe": Any fill pipe or discharge nozzle which meets any one of the following conditions:
 - a. The discharge opening is entirely submerged when the liquid level is six inches above the bottom of the container.
 - b. When applied to a container that is loaded from the side, the discharge opening is entirely submerged when the liquid level is 18 inches above the bottom of the container.
 - c. When applied to a container that is bottom loaded, the discharge opening is entirely submerged when the liquid level is six inches above the bottom of the container.
17. "Tank": A container, constructed primarily of nonearthen materials, used for the purpose of storing or holding crude oil or produced water.
18. "Tank cleaning": The removal of sludge material from a tank either to restore the tank to its original intended volume or to abandon or remove the tank from service.
19. "Vapor": All hydrocarbon compounds that are not in either a liquid or solid state.

20. "Vapor destruction and removal efficiency": The percentage by weight of ROC that enters an air pollution control device during a tank degassing operation that is not emitted to the atmosphere.
21. "Vapor recovery system": Any reactive organic compound vapor control system which is designed to prevent the release or venting of reactive organic compound gases to the atmosphere under normal operating conditions. For the purpose of this definition, a vapor recovery system meets the specification of Subsection C.3 in Rule 71.2 or is installed pursuant to Rule 71.1.