

## SAN LUIS OBISPO COUNTY AIR POLLUTION CONTROL DISTRICT

**RULE 427 - MARINE TANKER LOADING**

*(Adopted 4/26/95)*

**A. APPLICABILITY**

The provisions of this Rule shall apply to operations at a marine terminal where regulated organic liquid is placed into a marine tanker's cargo tanks; or where any liquid is placed into a marine tanker's cargo tanks which had previously held regulated organic liquid.

**B. DEFINITIONS**

For the purposes of this Rule, the following definitions shall apply:

1. "Background": A reading expressed as methane on a portable hydrocarbon detection instrument which is taken at least three meters upwind from any components to be inspected and which is not influenced by any specific emission point.
2. "Ballasting": The loading of water or other liquid into either a segregated ballast tank or a marine tanker's cargo tank to obtain proper propeller, rudder, and hull immersion.
3. "Housekeeping": Altering the composition of gases contained within marine vessel tanks by tank washing, gas freeing, or purging.
4. "Leak":
  - a. The detection of total gaseous hydrocarbons for any component in excess of 1,000 ppmv as methane above background measured according to the test procedure in Subsection F.3, or
  - b. Exclusive of intermediate barrier seal fluids, any liquid leak which drips liquid organic compounds at the rate of more than three (3) drops per minute or one (1) cubic centimeter per minute.

A "leak" is not a gaseous emission from pressure relief devices on tanks or delivery vessels when normal process pressure exceeds the limit specified for the device.
5. "Lightering": The transfer of organic liquid into a cargo tank from one marine tanker to another.
6. "Loading Event": An incident or occurrence including but not limited to loading, lightering, ballasting into a marine tanker's cargo tank, or housekeeping operations, beginning with the connecting of marine terminal storage tanks or a marine tanker to marine tanker cargo tank(s) with pipes or hoses followed by the transfer of liquid cargo and ending with the disconnecting of the pipes or hoses; or any other means of placing liquid into cargo tanks. In addition, emissions resulting from the venting of volatile organic compounds within California Coastal Waters prior to, during, or after a loading event are included in that loading event.
7. "Marine Tanker": Any marine vessel, whether self-propelled or not, which is used to carry liquid cargo in bulk for further distribution.
8. "Marine Terminal": Any facility, equipment, or structure constructed to handle the loading or unloading of organic liquid into or out of marine tankers.
9. "Regulated Organic Liquid": Gasoline, gasoline blending stocks, aviation gas and aviation fuel (JP-4 type), intermediate petroleum distillates, and crude oil.

**C. EXEMPTIONS**

1. Marine terminals are exempt from the requirements of Section D of this Rule if all of the following occur:
  - a. the true vapor pressure of the liquid loaded into the marine tanker is less than 1.0 psia; and

- b. the yearly loading throughput does not exceed 2.5 million barrels.
2. The requirements of Section D shall not apply to loading events of less than 1,000 bbls of regulated organic liquid.

#### **D. REQUIREMENTS**

1. Effective April 26, 1997, no person shall conduct a loading event at a marine terminal unless:
  - a. emissions of volatile organic compounds (VOCs) are limited to two (2) pounds per 1,000 barrels of liquid loaded; or
  - b. uncontrolled emissions of VOCs are reduced by at least 98 percent by weight using combustion control; or
  - c. uncontrolled emissions of VOCs are reduced by at least 95 percent by weight using recovery control with supplemental combustion of residual vapors; or
  - d. emission reduction credits granted in accordance with Rule 211, Emission Banking, are provided thirty (30) days prior to the loading event that are sufficient to offset the difference between the actual emissions of the loading event and the emissions which would be allowed by either Subsection D.1.a, D.1.b, or D.1.c of this Rule.
2. All hatches, pressure relief valves, connections, gauging ports and vents, and other equipment associated with a loading event shall be maintained free of liquid or gaseous leaks. Any liquid or gaseous leak shall be tagged upon detection and repaired within four (4) hours of detection by the owner or operator. Any liquid or gaseous leak detected by District staff shall constitute a violation of this Rule.

#### **E. TEST METHODS**

The following test methods shall be used to determine compliance unless other test methods determined to be equivalent after review by the District, the Air Resources Board (ARB), and the United States Environmental Protection Agency, are approved in writing by the Air Pollution Control Officer (APCO).

1. Emissions of VOCs shall be determined using EPA Method 25, ARB Method 202, or ARB Method 203. Source tests shall be conducted so that the emissions from at least the last fifty percent (50%) of total liquid loaded are included.
2. Mass emission rates of vapor processing systems shall be determined using EPA Method 25, ARB Method 202, or ARB Method 203.
3. Gaseous leaks shall be detected using EPA Method 21.
4. The vapor pressure of the regulated organic liquid shall be determined as follows:
  - a. If the API gravity of the regulated organic liquid is greater than or equal to 20 degrees, then the vapor pressure shall be determined by measuring the Reid vapor pressure and converting the result to true vapor pressure at the tank's maximum liquid storage temperature. For cargo tanks operating above or below ambient temperatures, the maximum liquid storage temperature is the highest calendar-month average of the storage temperature. For cargo tanks operating at ambient temperatures, the maximum liquid storage temperature is the maximum local monthly average ambient temperature as reported by the National Weather Service.
    1. Reid vapor pressure shall be measured using ASTM D 323-90, Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method).
    2. Conversion shall be done using the American Petroleum Institute Nomograph (API 2518 from API Publication 2517, Second Edition, February 1980). If the API nomograph scales do not encompass the quantities necessary for its use, conversion shall be done using the Air Resources Board (ARB)

document entitled "Technical Guidance Document to the Criteria and Guidelines Regulation for AB 2588" and dated August 1989.

- b. If the API gravity of the oil is below 20 degrees, then the vapor pressure shall be determined using ASTM D 323-90, Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method) with the following modifications:
1. Sampling shall be directly into the liquid chamber of the Reid apparatus. Before sampling, the liquid chamber shall be chilled by placing in ice. The tank line or fitting from which the sample will be taken shall be flushed for two (2) minutes immediately before sampling. Sampling shall be accomplished by use of a clean flexible tube fitted on the end of the tank line or fitting. The tube shall decrease in external diameter until small enough to fit into the liquid chamber and allow submerged fill of the liquid chamber. No tube connection shall visibly leak liquid. The flexible tube shall be no longer than eighteen (18) inches. Upon filling, the liquid chamber shall be immediately capped and chilled until coupled with the air chamber of the Reid apparatus.
  2. The water bath described in Sections 10.4, 11.3, and 11.4 of ASTM D 323-90 shall be maintained at the tank's maximum liquid storage temperature as defined in Subsection E.4.a, the steps described in Sections 9.3, 10.1 through 10.3, and 11.1 of ASTM D 323-90 shall not be performed, and the conversion in Subsection E.4.a.2 above shall not be done.
- c. The API gravity shall be determined according to ASTM Method D 287-82.
- d. Separate samples shall be taken for API gravity and vapor pressure determinations. Sampling for API gravity shall be according to ASTM Method D 4057-88.
- e. An alternative test method may be used if it provides the same result for a given sample and is approved in advance as a source-specific State Implementation Plan (SIP) revision by EPA and ARB for the purpose of determining vapor pressure of liquids of the type subject to this Rule.

## **F. RECORDKEEPING**

The owner or operator of a marine terminal conducting a loading event shall maintain records regarding each such event. Records shall be maintained for at least two (2) years and shall be made available to District staff upon request. The records shall include:

1. The location of each marine loading event.
2. The owner or operator responsible for operation of the loading event.
3. The date(s) and times at which the marine tanker(s) arrived and departed from the location of the loading event.
4. The name, registry and legal owner of each marine tanker participating in the loading event.
5. The prior cargo carried by the receiving marine tanker.
6. The type and amount of liquid cargo loaded into the receiving marine tanker.
7. The condition of the receiving marine tanks prior to being loaded (e.g., cleaned, crude oil washed, gas freed, etc.).
8. The amount of ballast water or other liquid added to the unsegregated ballast tanks.
9. The description of operating procedures to prevent venting while ballasting into unsegregated ballast tanks.
10. The description of any gaseous or liquid leak detected, leak repair action taken, date and time of leak detection, time required to repair the leak, and screening level after completion of the repair.

## **G. COMPLIANCE SCHEDULE**

1. Any owner or operator of a marine terminal subject to the provisions of this Rule shall, no later than October 26, 1995, submit to the APCO a control plan which describes the steps and schedule that will be taken to achieve compliance with the requirements of this determination.
  - a. If the owner or operator of a marine terminal proposes to use emission reduction credits, then the plan shall list the potential sources for obtaining emission reduction credits and an estimate of the amount of

credit that can be obtained versus the amount needed to satisfy Subsection D.1.a. Actual emission reduction credits are not limited to those sources listed in the plan.

2. Any owner or operator of a marine terminal subject to the provisions of Section D above shall, no later than April 26, 1996, submit to the APCO an application for an Authority to Construct any shoreside equipment required to achieve compliance with the requirements of this determination.
3. All operations to which this Rule applies shall be in full compliance no later than April 26, 1997.

#### **H. SAFETY AND EMERGENCY**

Nothing in this Rule shall be construed as to:

1. Require any act or omission that would be in violation of any regulation or other requirement of the United States Coast Guard; or
2. Prevent any act that is necessary to secure the safety of a vessel or the safety of the passengers or crew.