

**REGULATION 8
ORGANIC COMPOUNDS
RULE 18
EQUIPMENT LEAKS**

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REGULATION 8
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RULE 18
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8-18-100 GENERAL

8-18-101 Description: The purpose of this Rule is to limit emissions of organic compounds, including methane, from equipment at petroleum refineries, chemical plants, bulk plants and bulk terminals including, but not limited to: valves, connectors, pumps, compressors, pressure relief devices, diaphragms, hatches, sight-glasses, fittings, sampling ports, meters, pipes, tanks and vessels.

8-18-110 Limited Exemption, Initial Boiling Point: The provisions of Section 8-18-400 shall not apply to equipment which handle organic liquids having an initial boiling point greater than 300^o F.

8-18-112 Limited Exemption, Vacuum Service: The provisions of Section 8-18-400 shall not apply to equipment under vacuum.

8-18-113 Exemption, Controlled Seal Systems: Except for Section 8-18-603, the provisions of this Rule shall not apply to seal systems vented to a vapor recovery or disposal system which reduces the emissions of organic compounds from the seals to less than ~~0.3~~ 0.2 lb/day.

8-18-200 DEFINITIONS

8-18-201 Background: The ambient concentration of total organic compounds determined at least 10 feet upwind from the equipment inspected and not influenced by any specific emission point as indicated by a hydrocarbon analyzer specified by Section 8-18-501.

8-18-202 Bulk Plants and Terminals: A distribution facility which is subject to Regulation 8, Rule 6, 33 or 39.

8-18-203 Chemical Plant: Any facility engaged in producing organic or inorganic chemicals and/or manufacturing chemical products by chemical processes. Any facility or operation that has 28 as the first two digits in their Standard Industrial Classification Code as determined from the Standard Industrial Classification Manual. Chemical plants include, but are not limited to, facilities that manufacture: industrial inorganic and organic chemicals; plastic and synthetic resins, synthetic rubber, synthetic and other man made fibers; drugs; soap, detergents and cleaning preparations, perfumes, cosmetic and other toilet preparations; paints, varnishes, lacquers, enamels and allied products; agricultural chemicals; safflower and sunflower oil extracts; re-refining.

8-18-204 Commercial Natural Gas: A mixture of gaseous hydrocarbons with at least 80 percent methane and less than 1 percent by weight of organic compounds, excluding ethane.

8-18-205 Connection: Flanged, screwed, or other joined fittings used to connect equipment.

- 8-18-206 Equipment:** All components including, but not limited to: valves, flanges, pumps, compressors, connections, pressure relief devices, diaphragms, hatches, fittings, sampling ports, process vents, pipes, plugs, open-ended lines or sight-glasses.
- 8-18-207 Inaccessible Equipment:** Any equipment located over 13 feet above the ground when access is required from the ground; or any equipment located over 6.5 feet away from a platform when access is required from a platform.
- 8-18-208 Inspection:** The determination of the concentration of total organic compounds leaking from equipment using a portable hydrocarbon analyzer as required by Section 8-18-501.
- 8-18-209 Leak:** The concentration of total organic compounds measured above background, measured 1 centimeter or less from the leak, expressed as methane and measured using EPA Reference Method 21.
- 8-18-210 Leak Minimization:** Reducing the leak to the lowest achievable level using best modern practices and without shutting down the process unit which the equipment serves.
- 8-18-211 Leak Repair:** Tightening, adjusting, replacing, or adding sealing material to equipment which reduces leakage to the atmosphere below the applicable limit in Section 8-18-300.
- 8-18-212 Liquid Leak:** Dripping of liquid at a rate of greater than 3 drops per minute and a concentration of total organic compounds greater than the applicable leak standard in Section 8-18-301.
- 8-18-213 Organic Compound:** Any compound of carbon, excluding methane, carbon monoxide, carbonic acid, metallic carbides or carbonates and ammonium carbonate.
- 8-18-214 Petroleum Refinery:** Any facility that processes petroleum products as defined in Standard Industrial Classification Manual as Industry No. 2911, Petroleum Refining.
- 8-18-215 Pressure Relief Device:** The automatic pressure-relieving device actuated by the static pressure upstream of the device including, but not limited to pressure relief valves, rupture disks or tank pressure vacuum valves.
- 8-18-216 Process Unit:** A manufacturing process which is independent of other processes and is continuous when supplied with a constant feed or raw materials and has sufficient storage facilities for product.
- 8-18-217 Quarter:** One of the four consecutive 3-month divisions of the calendar year beginning on January 1.
- 8-18-218 Reinspection:** Any inspection following the minimization, or repair of leaking equipment.
- 8-18-219 Rupture Disc:** The thin metal diaphragm held between flanges
- 8-18-220 Total Organic Compounds:** The concentration of organic compounds as indicated by a hydrocarbon analyzer as specified by Section 8-18-501 including methane.
- 8-18-221 Turnaround:** The scheduled shutdown of a process unit for maintenance and repair work.
- 8-18-222 Valve:** Any device that regulates the flow of process material by means of an external actuator acting to permit or block passage of liquids or gases.

8-18-300 STANDARDS

- 8-18-301 General:** Except for pumps, compressors and connections subject to the requirements of Sections 8-18-302 and 303, a person shall not use any

equipment that leaks in excess of 100 ppm unless the leak has been discovered by the operator, minimized within 24 hours and repaired within 7 days; or if the leak has been discovered by the APCO, repaired within 24 hours.

8-18-302 Pumps and Compressors: A person shall not use any pump or compressor that leaks in excess of 500 ppm unless the leak has been discovered by the operator, minimized within 24 hours and repaired within 7 days; or if the leak has been discovered by the APCO, repaired within 24 hours.

8-18-303 Connections: A person shall not use any connection that leaks in excess of 100 ppm unless one of the following conditions are met:

303.1 The leak has been discovered by the operator, minimized within 24 hours and repaired within 7 days; or

303.2 The connection is inspected annually as required by Section 8-18-401.6 and the leak is discovered by the operator, minimized within 24 hours and repaired within 7 days; or if the leak has been discovered by the APCO, repaired within 24 hours; or

303.3 The connection is measured for mass emissions. If the connection's mass emission measurement is less 0.1 lb/day, the connection is in compliance with this section. If the connection's mass emission measurement is greater than 0.1 lb/day, the connection must be repaired.

8-18-304 Non-repairable Equipment: Any valve, pressure relief device, pump or compressor which cannot be repaired as required by Section 8-18-301 or 302, must comply with at least one of the following conditions:

304.1 The valve, pressure relief device, pump or compressor is measured for mass emissions. If the equipment's mass emission measurement is less than the mass standard expressed in the table below, the equipment is in compliance with the applicable standard in Section 8-18-301 or 302 and shall not be added to the components awaiting repair list in Subsection 8-18-304.2.

Equipment	Mass Emission Standard
Valves	0.1 lb/day
Pressure Relief Devices	0.1 lb/day
Pumps and Compressors	0.2 lb/day

304.2 For equipment that cannot be repaired, the number awaiting repair shall not exceed the percentage expressed in the table below and at no time shall a leak exceed 15 lb/day. Spared pumps and compressors must be repaired and cannot be included in the percent awaiting repair.

Equipment	Percent
Valves	0.5%
Pressure Relief Devices	1%
Pumps and Compressors	1%

8-18-305 Liquid Leak: A person shall not use any equipment that leaks liquid as defined in Section 8-18-212, unless the leak has been discovered by the operator, minimized within 24 hours and repaired within 7 days.

8-18-306 Alternate Compliance: The requirements of Sections 8-18-301, 302, 303 and 304 shall not apply to any facility which complies with an alternative emission reduction plan that satisfies all the requirements in Section 8-18-405.

8-18-400 ADMINISTRATIVE REQUIREMENTS

8-18-401 Inspection: Any person subject to this Rule shall comply with the following inspection requirements:

401.1 All connections shall be inspected for leaks within 90 days after start-up is completed following a turnaround.

401.2 Except as provided under Subsection 8-18-401.3 and 404, all equipment subject to this Rule shall be inspected quarterly.

401.3 Inaccessible equipment subject to this Rule shall be inspected at least once a year.

401.4 Any equipment subject to this Rule may be inspected at any time by the APCO.

401.5 Any equipment found to have a leak in excess of the standard in Section 8-18-301, 302 or 303 shall be reinspected within 24 hours after leak repair or minimization.

401.6 Any connection that is inspected annually is subject to the provisions of Subsection 8-18-303.3.

8-18-402 Identification: Any person subject to this Rule shall comply with the following identification requirements:

402.1 All valves, pressure relief devices, pumps and compressors shall be identified with a unique permanent identification code approved by the APCO. This identification code shall be used to refer to the equipment location. Records for each equipment shall refer to this identification code.

402.2 All equipment with a leak in excess of the applicable leak limitation in Section 8-18-301, 302 or 303 shall be tagged with a brightly colored weatherproof tag indicating the date the leak was detected.

8-18-403 Visual Inspection Schedule: All equipment shall be visually inspected daily for leaks. If a leak is observed, the concentration of organic compounds shall be determined.

8-18-404 Alternative Inspection Schedule: The inspection frequency for equipment, except pumps and compressors, may change from quarterly to annually provided all of the conditions in Subsection 404.1 and 404.2 are satisfied. If a leak is discovered, the inspection frequency will revert back to quarterly.

404.1 The equipment has been operated leak free for five consecutive quarters; and

404.2 Records are submitted and approval from the APCO is obtained.

8-18-405 Alternate Emission Reduction Plan: Any person electing to comply with Section 8-18-306 shall develop and submit an emission reduction plan to the APCO. The plan shall contain all information necessary to establish, document, measure progress and verify compliance with emission reduction level. The APCO shall evaluate each plan submitted and respond to each plan that meets the criteria of Subsection 8-18-404.1 with a written approval. A facility is subject to the limits contained in Section 8-18-301, 302, 303, 304 and 305 until receipt of the written approval. Any plan is subject to the following conditions:

405.1 (**TO BE DISCUSSED AT THE WORKSHOP**)

8-18-500 MONITORING AND RECORDS

8-18-501 Portable Hydrocarbon Detector: Any instrument used for the measurement of organic compounds shall be a combustible gas indicator that has been approved by the APCO and meets the specifications and performance criteria of and has been calibrated in accordance with EPA Reference Method 21 (40 CFR 60, Appendix A).

8-18-502 Records: Any person subject to the requirements of this rule shall maintain record that provided the following information:

502.1 The equipment identification code, equipment type and the location of the equipment.

502.2 The date of all inspections and reinspections and the corresponding leak concentration measured as specified by Section 8-18-401.

502.3 Records shall be maintained for at least 5 years and shall be made available to the APCO for inspection at any time.

502.4 Monthly records of all non-repairable equipment subject to the provisions of Section 8-18-304 shall be maintained and contain the equipment identification code, equipment type, equipment location, leak concentration measurement and date, last process unit turnaround date, and total number of non-repairable equipment awaiting repair.

8-18-600 MANUAL OF PROCEDURES

8-18-601 Analysis of Samples: Samples of organic compounds as defined in Section 8-18-110 shall be analyzed for Initial Boiling Point as prescribed in ASTM D-1078-78.

8-18-602 Inspection Procedure: Inspections of equipment shall be conducted as prescribed by EPA Reference Method 21 (40 CFR 60, Appendix A).

8-18-603 Determination of Control Efficiency: The control efficiency as specified by Section 8-18-113 shall be determined by any of the following methods: 1) BAAQMD Manual of Procedures, Volume IV, ST-7, 2) EPA Method 25 or 25A. A source shall be considered in violation if the VOC emissions measured by any of the referenced test methods exceed the standards of this rule.

8-18-603 Determination of Mass Emissions: The mass emission determination as specified by Sections 8-18-303, 304 and 306 shall be determined using by any of the following methods: 1) EPA Protocol for Equipment Leak Emission Estimates (EPA-453/R-93-026), 2) EPA Protocol for Equipment Leak Emission Estimates (EPA-453/R-93-017) or 3) EPA Evaluation of High Volume Collection System (EPA-600-R-95-167).