

REGULATION 12
MISCELLANEOUS STANDARDS OF PERFORMANCE
RULE 15
PETROLEUM REFINING EMISSIONS TRACKING

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RULE 15
PETROLEUM REFINING EMISSIONS TRACKING

(Adopted [DATE])

12-15-100 GENERAL

12-15-101 Description: The purpose of this rule is to track air emissions and crude oil quality characteristics from petroleum refineries over time, to complete health risk assessments for petroleum refineries, and to establish monitoring systems to provide detailed air quality data along refinery boundaries and in nearby communities.

12-15-200 DEFINITIONS

12-15-201 Accidental Air Release: An unanticipated emission of a criteria pollutant, toxic air contaminant, and/or greenhouse gas into the atmosphere.

12-15-202 Ambient Air: The portion of the atmosphere external to buildings to which the general public has access.

12-15-203 Community Air Monitoring System: Equipment that measures and records air pollutant concentrations in the ambient air at or near sensitive receptor locations near a facility, and which may be useful for estimating associated pollutant exposures and health risks, and in determining trends in air pollutant levels over time

12-15-204 Criteria Pollutant: An air pollutant for which an ambient air quality standard has been established, or that is an atmospheric precursor to such an air pollutant. For the purposes of this rule, criteria pollutants are carbon monoxide (CO), oxides of nitrogen (NO_x), particulate matter with an aerodynamic diameter of 10 micrometers or less (PM₁₀), particulate matter with an aerodynamic diameter of 2.5 micrometers or less (PM_{2.5}), precursor organic compounds (POC), and sulfur dioxide (SO₂).

12-15-205 Crude Oil: Petroleum, as it occurs after being extracted from geologic formations by an oil well, and after extraneous substances may have been removed, and which may be subsequently processed at a petroleum refinery.

12-15-206 Crude Slate: A record of the types and quantities of crude oil processed by a particular petroleum refinery over a period of time.

12-15-207 Emissions Inventory: A comprehensive accounting of the types and quantities of criteria pollutants, toxic air contaminants, and greenhouse gases that are released into the atmosphere based on state-of-the-art measurement technologies and estimation methodologies. For the purposes of this rule, emissions inventory data shall be collected or calculated for: (1) all continuous, intermittent, predictable, and accidental air releases resulting from petroleum refinery processes at stationary sources at a petroleum refinery, and (2) all air releases from cargo carriers (e.g., ships and trains), excluding motor vehicles, that load or unload materials at a petroleum refinery including emissions from such carriers while operating within the District or within California Coastal Waters as specified in Regulation 2-2-610 (adopted Dec. 19, 2012).

12-15-208 Fence-line Monitoring System: Equipment that measures and records air pollutant concentrations along the property boundary of a facility, and which may be useful for detecting and/or estimating the quantity of fugitive emissions, gas leaks, and other air emissions from the facility.

12-15-209 Greenhouse Gases (GHGs): The air pollutant that is defined in 40 CFR § 86.1818-12(a), which is a single air pollutant made up of a combination of the following six constituents: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. GHG emissions shall be expressed as CO₂ equivalent emissions (CO₂e) according to the methodology set forth in 40 CFR § 52.21(b)(49)(ii).

12-15-210 Health Risk Assessment (HRA): A detailed and comprehensive analysis to evaluate and

predict the dispersion of hazardous substances in the environment and the potential for exposure of the human population and to assess and quantify both the individual and populationwide health risks associated with those levels of exposure. HRAs required by this rule shall be prepared in accordance with the most recent guidelines adopted by the Office of Environmental Health Hazard Assessment under Health and Safety Code Section 44360(b)(2) for use in the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (Health and Safety Code Section 44300 et seq.).

- 12-15-211 Petroleum Refinery:** An establishment that is located on one or more contiguous or adjacent properties, in actual physical contact or separated solely by a public roadway or other public right-of-way, and under common control, and that processes crude oil to produce more usable products such as gasoline, diesel fuel, aviation fuel, lubricating oils, asphalt or petrochemical feedstocks. Petroleum refinery processes include separation processes (e.g., atmospheric or vacuum distillation, and light ends recovery), petroleum conversion processes (e.g., cracking, reforming, alkylation, polymerization, isomerization, coking, and visbreaking) petroleum treating processes (e.g., hydrodesulfurization, hydrotreating, chemical sweetening, acid gas removal, and deasphalting), feedstock and product handling (e.g., storage, blending, loading, and unloading), and auxiliary facilities (e.g., boilers, waste water treatment, hydrogen production, sulfur recovery plant, cooling towers, blowdown systems, compressor engines, and power plants).
- 12-15-212 Petroleum Refinery Emissions Profile (PREP):** An emissions inventory for the petroleum refinery emissions profile period that is used as a reference with which to compare emissions inventories for later periods of time (on-going emissions inventories) in order to determine changes in emissions that have occurred from a petroleum refinery. A PREP shall be the average emission rate, expressed in units of tons or pounds per year, based on actual emissions that occurred during the PREP period, except that a PREP shall not include emissions that exceeded regulatory or permitted limits, or emissions from accidental air releases required to be reported in a Risk Management Plan (RMP) under 40 CFR §68.168.
- 12-15-213 Petroleum Refinery Emissions Profile Period:** A period of 12 consecutive months, from January 2015 through December 2017, which is selected by a refinery owner/operator for establishing a PREP for a particular criteria pollutant, toxic air contaminant, or greenhouse gas. A different consecutive 12-month period may be used for each criteria pollutant, toxic air contaminant, or greenhouse gas.
- 12-15-214 Petroleum Refinery On-going Emissions Inventory:** An emissions inventory at a petroleum refinery covering a calendar year period. For the purposes of this rule, on-going emissions inventories are required to be compiled for the calendar year 2015, and for each subsequent calendar year.
- 12-15-215 Petroleum Refinery Owner/Operator:** Any person who owns, operates, or controls a petroleum refinery and that possesses sufficient authority to take the actions required to comply with this rule. The refinery owner/operator is responsible for submittal of reports and plans required by this rule that cover the entire petroleum refinery, including any refinery processes or auxiliary facilities that may be separately owned or operated.
- 12-15-216 Receptor Location:** A location outside the property boundary of the facility being evaluated where a member of the public may reasonably be expected to be exposed to air pollutants for the particular acute or chronic health risks being evaluated.
- 12-15-217 Sensitive Receptor:** A receptor location where an individual that may have increased vulnerability to exposure to air pollutants may be present. For the purposes of this rule, sensitive receptors are residences (where an individual may live for 6 months or more out of a year), schools (including colleges and universities), daycares, hospitals, and senior-care facilities.
- 12-15-218 Source:** Any article, machine, equipment, operation, contrivance or related groupings of such which may produce and/or emit air pollutants.
- 12-15-219 Toxic Air Contaminant (TAC):** An air pollutant that may cause or contribute to an increase in mortality or in serious illness or that may pose a present or potential hazard to human health. For the purposes of this rule, TACs consist of the substances listed in Regulation 2, Rule 5, Table 2-5-1.

12-15-400 ADMINISTRATIVE REQUIREMENTS

12-15-401 On-going Petroleum Refinery Emissions Inventory and Crude Slate Reports: On or before September 1, 2016, and every subsequent September 1, a refinery owner/operator shall submit to the APCO an on-going petroleum refinery emissions inventory and crude slate report covering the previous calendar year period in an APCO-approved format. This report shall include, at a minimum, the following:

- 401.1** Identification of the calendar year that the on-going petroleum refinery emissions inventory and crude slate report covers.
- 401.2** A summary of the total quantity of each criteria pollutant, TAC, and GHG that was emitted from the petroleum refinery during the on-going petroleum refinery emissions inventory period.
- 401.3** A detailed listing of the annual emissions of each criteria pollutant, TAC, and GHG emitted from each source at the petroleum refinery, and a complete description of the methodology used for determining these emissions including documentation of the basis for any assumptions used, except that methodologies that are unchanged from a previously submitted on-going petroleum refinery emissions inventory report under this section may instead be noted as such. Emissions resulting from accidental releases shall be identified as such, along with the date(s) that the release occurred.
- 401.4** A plot plan that clearly identifies the location of each source identified in Section 12-15-401.3 within the petroleum refinery.
- 401.5** Beginning with the on-going petroleum refinery emissions inventory and crude slate report for the calendar year 2017 (due on or before September 1, 2018), and for every subsequent calendar year on-going petroleum refinery emissions inventory and crude slate report, a table that shows, on a refinery-wide basis for each applicable air pollutant, the change in emissions that occurred between the petroleum refinery emissions profile established under Sections 12-15-402 or 403 and the calendar year period for which the on-going petroleum refinery emissions inventory and crude slate report was prepared under this section. Emission changes do not need to be shown for any newly listed TACs that have been included in an on-going petroleum refinery emissions inventory and crude slate report but that have not been included in a petroleum refinery emissions profile due to inadequate information.
- 401.6** Quarterly summaries of the total volume (million barrels) and average sulfur content (percentage by weight), nitrogen content (percentage by weight), API gravity (degrees), and total acid number (milligrams of potassium hydroxide per gram) of the petroleum refinery's crude slate for the calendar year period covered by the on-going petroleum refinery emissions inventory and crude slate report.

12-15-402 Petroleum Refinery Emissions Profile Report: On or before July 1, 2018, a refinery owner/operator shall submit to the APCO a petroleum refinery emissions profile report in an APCO-approved format. This report shall include, at a minimum, the following:

- 402.1** Identification of the petroleum refinery emissions profile period for each air pollutant included in the petroleum refinery emissions profile.
- 402.2** A summary of the average emission rate of each criteria pollutant, TAC, and GHG that was emitted from the petroleum refinery during the petroleum refinery emissions profile period, expressed in units of tons or pounds per year, excluding any emissions that do not meet the definition of Petroleum Refinery Emissions Profile in Section 12-15-212.
- 402.3** A detailed listing of the average emission rate of each criteria pollutant, TAC, and GHG that was emitted from each source at the petroleum refinery during the petroleum refinery emissions profile period, expressed in units of tons or pounds per year, and a complete description of the methodology used for determining these emissions including documentation of the basis for any assumptions used and the exclusion of any emissions that do not meet the definition of Petroleum Refinery Emissions Profile in Section 12-15-212. Emissions resulting from accidental releases shall be identified as such, along with the date(s) that the release occurred.

402.4 A plot plan that clearly identifies the location of each source identified in Section 12-15-402.3 within the petroleum refinery.

12-15-403 Revision of Petroleum Refinery Emissions Profile Report: Any improvements in emissions inventory methodologies that are used to expand or refine on-going petroleum refinery emissions inventory and crude slate reports submitted under Section 12-15-401 shall also be used to expand or refine the petroleum refinery emissions profile, to the extent that such improved methodologies are also applicable to the sources included in the petroleum refinery emissions profile. In such instances, a revised petroleum refinery emissions profile report shall be submitted to the APCO no later than by the date the applicable on-going petroleum refinery emissions inventory and crude slate report is due. The revised petroleum refinery emissions profile report shall, at a minimum, identify the date of the revision, contain the information described in Sections 12-15-402.1 to 402.4, and clearly identify, describe, and justify the changes in the petroleum refinery emissions profile that have been made. Petroleum refinery emissions profiles should be expanded to include emissions of newly listed TACs that have been included in an on-going petroleum refinery emissions inventory and crude slate report, unless inadequate information exists to make such revisions.

12-15-404 Review and Approval of On-going Petroleum Refinery Emissions Inventory and Crude Slate Reports and Petroleum Refinery Emissions Profile Reports: The procedure for determining whether an on-going petroleum refinery emissions inventory and crude slate report submitted under Section 12-15-401, or a petroleum refinery emissions profile report submitted under Section 12-15-402 or 403, meet the applicable requirements of this rule is as follows:

404.1 Preliminary Review: Within 45 days of receipt of the report, the APCO will complete a preliminary review of the report to identify any deficiencies that need to be corrected. If the APCO determines that the submitted report is deficient, the APCO will notify the refinery owner/operator in writing. The notification will specify the basis for this determination and the required corrective action.

404.2 Corrective Action: Upon receipt of such notification, the refinery owner/operator shall correct the identified deficiencies and resubmit the report within 45 days. If the APCO determines that the refinery owner/operator failed to correct any deficiency identified in the notification, the APCO will disapprove the report, or the APCO may make the necessary corrections to the emissions inventory report with a designation that the report includes Air District revisions.

404.3 Public Comment: The report, including any revisions made to correct deficiencies will be made available for public review for at least 45 days (with the exception of information designated confidential). The APCO will consider any written comments received during this period prior to approving or disapproving the final report.

404.4 Final Action: Within 45 days of the close of the public comment period under Section 12-15-404.3, the APCO will approve the report if the APCO determines that the report meets the requirements of Sections 12-15-401, 402, or 403, and Section 12-15-601, and shall provide written notification to the refinery owner/operator. This period may be extended if necessary as determined by the APCO. If the APCO determines that the report does not meet the requirements of Sections 12-15-401, 402, 403, and Section 12-15-601, the APCO will notify the refinery owner/operator in writing. The notification will specify the basis for this determination. Upon receipt of such notification, the refinery owner/operator shall correct the identified deficiencies and resubmit the report within 45 days. If the APCO determines that the refinery owner/operator failed to correct any deficiency identified in the notification, the APCO will determine that the refinery owner/operator has failed to meet the requirements of Sections 12-15-401, 402, or 403, and Section 12-15-601, and will disapprove the report, or the APCO may make the necessary corrections and approve the report with a designation that the report was approved with Air District revisions.

404.5 Public Inspection: Within 15 days of the approval or disapproval of a report under Section 12-15-404.4, the APCO shall post the approved or disapproved report on the District's website, and shall notify any member of the public who submitted comments

under Section 12-15-404.3, or who otherwise requested such notification of this action in writing. In making information available for public inspection, the confidentiality of trade secrets, as designated by the refinery owner/operator, shall be handled in accordance with Section 6254.7 of the Government Code.

12-15-405 Health Risk Assessment: On or before March 1, 2016, the refinery owner/operator shall submit to the APCO a Health Risk Assessment (HRA) for the petroleum refinery based on emissions inventory data collected for the calendar year 2014. The HRA shall be completed in accordance with an APCO-approved modeling protocol that the refinery owner/operator completes and submits for APCO review based on established HRA guideline procedures.

12-15-406 Review and Approval of Health Risk Assessments: The procedure for determining whether a Health Risk Assessment (HRA) submitted under Section 12-15-405 meets the applicable requirements of this rule is as follows:

406.1 Preliminary Review: Within 45 days of receipt of the HRA, the APCO will complete a preliminary review of the HRA to identify any deficiencies that need to be corrected. If the APCO determines that the submitted HRA is deficient, the APCO will notify the refinery owner/operator in writing. The notification will specify the basis for this determination and the required corrective action.

406.2 Corrective Action: Upon receipt of such notification, the refinery owner/operator shall correct the identified deficiencies and resubmit the HRA within 45 days. If the APCO determines that the refinery owner/operator failed to correct any deficiency identified in the notification, the APCO will disapprove the HRA.

406.3 Public Comment: The HRA, including any revisions made to correct deficiencies, will be made available for public review for at least 45 days (with the exception of information designated confidential). The APCO will consider any written comments received during this period prior to approving or disapproving the final HRA.

406.4 OEHHA Comment: The HRA, including any revisions made to correct deficiencies, will be submitted to the Office of Environmental Health Hazard Assessment for review following the procedures provided in Health and Safety Code Section 44361. The APCO will consider any written comments received from OEHHA prior to approving or disapproving the final HRA.

406.5 Final Action: Within 45 days of the close of the public comment period under Section 12-15-406.3, or within 45 days of the receipt of comments from OEHHA under Section 12-15-406.4, whichever is later, the APCO will approve the HRA if the APCO determines that the HRA meets the requirements of Section 405, and shall provide written notification to the refinery owner/operator. This period may be extended if necessary as determined by the APCO. If the APCO determines that the HRA does not meet the requirement of Sections 12-15-405, the APCO will notify the refinery owner/operator in writing. The notification will specify the basis for this determination. Upon receipt of such notification, the refinery owner/operator shall correct the identified deficiencies and resubmit the HRA within 45 days. If the APCO determines that the refinery owner/operator failed to correct any deficiency identified in the notification, the APCO will determine that the refinery owner/operator has failed to meet the requirement of Sections 12-15-405, and will disapprove the HRA.

406.6 Public Inspection: Within 15 days of the approval or disapproval of an HRA under Section 12-15-406.5, the APCO shall post the approved or disapproved HRA on the District's website, and shall notify any member of the public who submitted comments under Section 12-15-406.3, or who otherwise requested such notification of this action in writing. In making information available for public inspection, the confidentiality of trade secrets, as designated by the refinery owner/operator, shall be handled in accordance with Section 6254.7 of the Government Code.

12-15-407 Air Monitoring Plans: On or before December 31, 2015, the refinery owner/operator shall submit to the APCO a plan for establishing and operating a fence-line monitoring system and a community air monitoring system. The plan shall include detailed information describing the equipment to be used to monitor, record, and report air pollutant levels, the siting, operation, and maintenance of this equipment, and procedures for implementing data quality assurance

and quality control. Within one year of the issuance of any updated air monitoring guidelines published by the APCO under Section 12-15-410, the refinery/operator shall submit to the APCO an updated air monitoring plan.

12-15-408 Review and Approval of Air Monitoring Plans: The procedure for determining whether an air monitoring plan submitted under Section 12-15-407 meets the applicable requirements of this rule is as follows:

408.1 Preliminary Review: Within 45 days of receipt of the air monitoring plan, the APCO will complete a preliminary review of the plan to identify any deficiencies that need to be corrected. If the APCO determines that the submitted plan is deficient, the APCO will notify the refinery owner/operator in writing. The notification will specify the basis for this determination and the required corrective action.

408.2 Corrective Action: Upon receipt of such notification, the refinery owner/operator shall correct the plan and resubmit the proposed plan within 45 days. If the APCO determines that the refinery owner/operator failed to correct any deficiency identified in the notification, the APCO will disapprove the plan.

408.3 Public Comment: The plan, including any revisions made to correct deficiencies, will be made available for public review for at least 45 days (with the exception of information designated confidential). The APCO will consider any written comments received during this period prior to approving or disapproving the final plan.

408.4 Final Action: Within 45 days of the close of the public comment period under Section 12-15-408.3, the APCO will approve the air monitoring plan if the APCO determines that the plan meets the requirements of Section 12-15-407 and Section 12-15-602, and shall provide written notification to the refinery owner/operator. This period may be extended if necessary as determined by the APCO. If the APCO determines that the plan does not meet the requirements of Section 12-15-407 and Section 12-15-602, the APCO will notify the refinery owner/operator in writing. The notification will specify the basis for this determination. Upon receipt of such notification, the refinery owner/operator shall correct the identified deficiencies and resubmit the air monitoring plan within 45 days. If the APCO determines that the refinery owner/operator failed to correct any deficiency identified in the notification, the APCO will determine that the refinery owner/operator has failed to meet the requirements of Sections 12-15-407 and Section 12-15-602 and will disapprove the plan.

408.5 Public Inspection: Within 15 days of the approval or disapproval of an air monitoring plan under Section 12-15-408.4, the APCO shall post the plan on the District's website, and shall notify any member of the public who submitted comments under Section 12-15-408.3, or who otherwise has requested such notification of this action in writing. In making information available for public inspection, the confidentiality of trade secrets, as designated by the refinery owner/operator, shall be handled in accordance with Section 6254.7 of the Government Code.

12-15-409 Emissions Inventory Guidelines: The APCO shall publish, and periodically update, emissions inventory guidelines for petroleum refineries that describe the factors that the District will apply in reviewing emissions inventories required under this rule. Methods included in these guidelines may include, but are not limited to, continuous monitoring to measure emissions, applying the results of emissions source tests to known activity levels, combining published emission factors with known activity levels, material balances, or empirical formulae.

12-15-410 Air Monitoring Guidelines: The APCO shall publish air monitoring guidelines for petroleum refineries that describe the factors that the District will apply in reviewing community air monitoring systems and fence-line monitoring systems required under this rule. These guidelines may include, but are not limited to, specifications for pollutant coverage, siting, instrumentation, operation, maintenance, quality assurance, quality control, and data reporting. The guidelines shall be updated by the APCO within five years of initial issuance in consideration of advances in air monitoring technology, updated information regarding the health effects of air pollutants, and review of data collected by existing fence-line and

community air monitoring systems established under this rule.

- 12-15-411 Designation of Confidential Information:** When submitting an on-going petroleum refinery emissions inventory and crude slate report, petroleum refinery emissions profile report, air monitoring plan, or other documents or records required by this rule, the refinery owner/operator shall designate as confidential any information claimed to be exempt from public disclosure under the California Public Records Act, Government Code Section 6250 et seq. If a document is submitted that contains information designated confidential in accordance with this section, the owner/operator shall provide a justification for this designation and shall submit a separate copy of the document with the information designated confidential redacted.

12-15-500 MONITORING AND RECORDS

- 12-15-501 Community Air Monitoring System:** Within two years of the approval of an air monitoring plan under Section 12-15-408.4, the refinery owner/operator will ensure that a community air monitoring system is installed, and is operated and maintained in accordance with the approved air monitoring plan. Community air monitoring system data shall also be reported as specified in the approved plan.

- 12-15-502 Fence-line Monitoring System:** Within one year of the approval of an air monitoring plan under Section 12-15-408.4, the refinery owner/operator will ensure that a fence-line monitoring system is installed, and is operated in accordance with the approved air monitoring plan. Fence-line monitoring system data shall also be reported as specified in the approved plan.

- 12-15-503 Recordkeeping:** The refinery owner/operator shall maintain records of all monitoring information, source test results, material and fuel throughputs, and other information used to establish emissions inventories required under this rule. The refinery owner/operator shall also maintain records of the quantity and composition of crude oil, and other pre-processed feedstocks, that are refined. Composition data shall include, at a minimum, sulfur content, nitrogen content, API gravity and total acid number. Such records shall be maintained for a period of five years after the submittal of a required on-going petroleum refinery emissions inventory and crude slate report or petroleum refinery emissions profile report, and shall be made available to the APCO upon request.

12-15-600 MANUAL OF PROCEDURES

- 12-15-601 Emissions Inventory Procedures:** Each emissions inventory required under this rule shall be prepared following the District's Emission Inventory Guidelines for Petroleum Refineries established under Section 12-15-409.

- 12-15-602 Air Monitoring Procedures:** Each air monitoring plan required under this rule shall be prepared following the District's Air Monitoring Guidelines for Petroleum Refineries established under Section 12-15-410.