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**REGULATION 11  
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RULE 18  
REDUCTION OF RISK FROM AIR TOXIC EMISSIONS AT EXISTING FACILITIES**

(Adopted November 15, 2017)

**11-18-100 GENERAL**

- 11-18-101 Description:** The purpose of this rule is to ensure that facilities that emit toxic air contaminants do not pose an unacceptable health risk to nearby residents, workers, or students.
- 11-18-102 Applicability:** This rule applies to any toxic risk facility that is required to report the toxic air contaminant emissions inventory of the facility to the Air District pursuant to the Air Toxics "Hot Spots" Information and Assessment Act of 1987, California Health and Safety Code, Section 44300 *et seq.*
- 11-18-103 Exemption, Emergency-Use, Stationary Diesel Engines:** This rule shall not apply to facilities for which the only source of toxic air contaminant emissions is one or more stationary diesel-fueled, compression-ignited engines operated only for emergency-use, as defined in Regulation 9, Rule 8, Section 9-8-231, and reliability-related activities, and the facility prioritization score is less than 250.
- 11-18-104 Exemption, Retail Gasoline Dispensing Facilities:** This rule shall not apply to retail gasoline dispensing facilities with a prioritization score less than 250.

**11-18-200 DEFINITIONS**

- 11-18-201 Acute Hazard Index, or Acute HI:** Acute hazard index is the sum of the individual acute hazard quotients for toxic air contaminants identified as affecting the same target organ or organ system.
- 11-18-202 Acute Hazard Quotient, or Acute HQ:** Acute hazard quotient is the ratio of the estimated short-term average concentration of the toxic air contaminant to its acute reference exposure level (estimated for inhalation exposure).
- 11-18-203 Airborne Toxic Control Measure, or ATCM:** A recommended method and, where appropriate, a range of methods, established by the California Air Resources Board (CARB) pursuant to the Tanner Act, California Health and Safety Code Section 39650 *et seq.*, that reduces, avoids, or eliminates the emissions of a toxic air contaminant.
- 11-18-204 Best Available Retrofit Control Technology for Toxics, or TBARCT:** For any existing source of toxic air contaminants, except cargo carriers, the most stringent of the following retrofit emission controls; considering the cost of achieving health risk reductions, any non-air quality health and environmental impacts, and energy requirements; provided that under no circumstances shall the controls be less stringent than the emission control required by any applicable provision of federal, State or District laws, rules, regulations or requirements:
- 204.1 The most effective retrofit emission control device or technique that has been successfully utilized for the type of equipment comprising such a source; or
  - 204.2 The most stringent emission limitation achieved by a retrofit emission control device or technique for the type of equipment comprising such a source; or
  - 204.3 Any retrofit control device or technique or any emission limitation that the APCO has determined to be technologically feasible for the type of equipment comprising such a source; or
  - 204.4 The most stringent retrofit emission control for a source type or category specified as MACT by U.S. EPA, or specified in an ATCM by CARB.
- 11-18-205 Cancer Risk:** An estimate of the chance that an individual may develop cancer as a result of exposure to emitted carcinogens at a given exposed individual location, and considering, where

appropriate, Age Sensitivity Factors to account for inherent increased susceptibility to carcinogens during infancy and childhood.

- 11-18-206 Chronic Hazard Index (HI), or Chronic HI:** Chronic hazard index is the sum of the individual chronic hazard quotients for toxic air contaminants identified as affecting the same target organ or organ system.
- 11-18-207 Chronic Hazard Quotient (HQ), or Chronic HQ:** Chronic hazard quotient is the ratio of the estimated annual average exposure of the toxic air contaminant to its chronic reference exposure level (estimated for inhalation and non-inhalation exposures).
- 11-18-208 Exposed Individual (EI):** A person who is exposed to TACs emitted from a toxic risk facility. Exposed individual includes a resident, student, or worker who is not an employee of or a contractor for the toxic risk facility.
- 11-18-209 Facility:** Any property, real or personal, which may incorporate one or more plants all being operated or maintained by a person as part of an identifiable business on contiguous or adjacent property, and shall include, but not be limited to manufacturing plants, refineries, power generating plants, ore processing plants, construction material processing plants, automobile assembly plants, foundries and waste processing sites.
- 11-18-210 Gasoline Dispensing Facility (GDF):** Any stationary operation that dispenses gasoline directly into the fuel tanks of motor vehicles. This facility shall be treated as a single source which includes all necessary equipment for the exclusive use of the facility, such as nozzles, dispensers, pumps, vapor return lines, plumbing and storage tanks.
- 11-18-211 Health Risk:** The potential for adverse human health effects resulting from exposure to emissions of toxic air contaminants and ranging from relatively mild temporary conditions, such as eye or throat irritation, shortness of breath, or headaches, to permanent and serious conditions, such as birth defects, cancer or damage to lungs, nerves, liver, heart, or other organs. Measures of health risk include cancer risk, chronic hazard index, and acute hazard index.
- 11-18-212 Health Risk Assessment, or HRA:** An analysis that estimates the potential for increased likelihood of health risk for individuals in the affected population that may be exposed to emissions of one or more toxic air contaminants, determined in accordance with Rule 2-5, Section 2-5-603.
- 11-18-213 Maximally Exposed Individual (MEI):** A person that may be located at the exposed individual location where the highest exposure to toxic air contaminants emitted from a given source or project is predicted, as shown by an APCO-approved HRA. MEI locations are typically determined for maximum cancer risk, chronic hazard index and acute hazard index based on exposure to residents, workers, and students.
- 11-18-214 Maximum Achievable Control Technology, or MACT:** An emission standard promulgated by U.S. EPA pursuant to Section 112(d) of the Clean Air Act.
- 11-18-215 Owner/Operator:** Any person who owns, leases, operates, controls, or supervises a facility, building, structure, installation, or source which directly or indirectly results or may result in emissions of any air pollutant.
- 11-18-216 Prioritization Score:** The relative potential for health impacts from a facility based on the amount of TACs emitted from the facility, the relative toxicity of the TACs emitted, the proximity of the facility to exposed individuals and exposure factors for different types of exposed individuals. The methodology for determining a facility's prioritization score is located in Appendix A to this rule.
- 11-18-217 Priority Community:** A geographic area where levels of toxic air contaminants are higher than other areas and where people may be particularly vulnerable and may bear disproportionately higher adverse health effects.
- 11-18-218 Risk Action Level**
- 218.1 Before January 1, 2020, any of the following health risk levels:
- 1.1 A cancer risk of 25 per million (25/M); or
  - 1.2 A chronic hazard index of 2.5; or
  - 1.3 An acute hazard index of 2.5.
- 218.2 Effective January 1, 2020, except as provided in Section 11-18-402, any of the

following health risk levels:

- 2.1 A cancer risk of 10 per million (10/M); or
- 2.2 A chronic hazard index of 1.0; or
- 2.3 An acute hazard index of 1.0.

- 11-18-219 Risk Reduction Plan or Plan:** A document meeting the requirements of Section 11-18-404 that identifies, among other things, sources, quantities, and causes of emissions responsible for exceedance of any of the risk action levels set forth in Section 11-18-221 and details risk reduction measures that will be implemented to reduce risk.
- 11-18-220 Risk Reduction Measures:** Practices that reduce toxic air contaminant emissions or that reduce health risks at the facility being evaluated, including changes to production processes, feedstocks, product formulations, emission point locations, emissions capture and dispersion mechanisms, and the installation of TBARCT or other control devices.
- 11-18-221 Significant Risk Threshold:** Any of the following toxic health risk levels:
- 221.1 A cancer risk of 1.0 per million (1.0/M); or
  - 221.2 A chronic hazard index of 0.20; or
  - 221.3 An acute hazard index of 0.20.
- 11-18-222 Significant Source:** A source of toxic air contaminants or health risk that poses a risk equal to or greater than a significant risk threshold at any MEI location at which all sources at the facility, taken together, pose a health risk equal to or greater than a risk action level.
- 11-18-223 Source:** Any article, machine, equipment, operation, contrivance or related groupings of such that may produce and/or emit air pollutants.
- 11-18-224 Stationary Diesel-Fueled, Compression-Ignited Engine:** An internal combustion engine with operating characteristics significantly similar to the theoretical diesel combustion cycle that is operated, or intended to be operated, at a specific site for more than one year or is attached to a foundation at that site.
- 11-18-225 Toxic Air Contaminant or 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 Table 2-5-1 Toxic Air Contaminant Trigger Levels in Regulation 2, Rule 5.
- 11-18-226 Toxic Risk Facility:** Any facility that manufactures, formulates, uses, or releases any toxic air contaminant or any other substance that reacts to form a TAC.
- 11-18-227 Unreasonable Economic Burden:** When the annualized cost of compliance (the sum of the annual operating cost and annualized capital costs) exceeds ten percent of the annual profits of a facility or one percent of the annual operational budget of a non-profit facility.

## **11-18-300 STANDARDS**

- 11-18-301 Compliance with Risk Reduction Plan:** The owner/operator of a toxic risk facility that poses a health risk, as determined by an APCO-approved HRA, equal to or greater than one or more of the risk action levels in effect pursuant to Section 11-18-218 shall:
- 301.1 Submit a proposed Risk Reduction Plan to the APCO in accordance with Section 11-18-403;
  - 301.2 Obtain and maintain APCO approval of a Risk Reduction Plan in accordance with Sections 11-18-403, 404, and 405; and
  - 301.3 Implement the risk reduction measures and comply with all other requirements in the approved Risk Reduction Plan.

## **11-18-400 ADMINISTRATIVE REQUIREMENTS**

- 11-18-401 Health Risk Assessment Information Requirement:** Within 60 days of a request from the APCO, a facility owner/operator shall submit to the APCO any information necessary to complete an HRA of the facility. The facility owner/operator may request additional time to

submit the requested information (up to an additional 60 days) provided that the facility owner/operator can demonstrate that additional time is necessary.

**11-18-402 Early Application of Risk Action Levels:** The APCO may conduct an HRA for or apply the risk action levels specified in Section 11-18-218.2 to any toxic risk facility located within a Priority Community at any time after the adoption of this rule.

**11-18-403 Notification of HRA Results and Submission of Plan:** The APCO shall provide the facility owner/operator with a copy of the preliminary HRA. The facility owner/operator shall be given 90 days to review and comment on the preliminary HRA. After taking into account any comments from a facility on preliminary HRA results and correcting factual errors, the APCO shall notify a facility owner/operator when a final APCO-approved HRA indicates a facility health risk equals or exceeds one or more of the risk action levels set forth in Section 11-18-218 and provide the facility owner/operator with a copy of the final APCO-approved HRA. Within 180 days of notification, the facility owner/operator shall submit a draft Risk Reduction Plan to the APCO that complies with Section 11-18-404. The APCO may allow additional time for the Plan submission to ensure the Plan is compatible with any applicable safety regulations.

**11-18-404 Risk Reduction Plan Content Requirements:** A Risk Reduction Plan shall include the following:

404.1 The name and address of the facility.

404.2 The North American Industry Classification System (NAICS) code for the facility.

404.3 A description of risk from the facility including:

3.1 Summary data from the applicable APCO-approved air toxic emission inventory.

3.2 Summary data from the health risk assessment.

3.3 Identification of the processes and emission points that are significant sources contributing to the facility health risks and a characterization of the risk from each.

404.4 A list of sources at which risk reduction measures will be implemented and a description of each risk reduction measure to be implemented at each source, including:

4.1 A description of the source and any existing controls that reduce risk,

4.2 A description of each risk reduction measure,

4.3 Anticipated emission reductions from the risk reduction measure,

4.4 Anticipated health risk reduction from the risk reduction measure

404.5 A schedule for implementing each risk reduction measure, including:

5.1 Dates for filing applications for permits to construct.

5.2 Dates equipment will be installed (if applicable).

5.3 Dates process changes will be completed (if applicable).

5.4 Dates for demonstrating the effectiveness of risk reduction measures.

404.6 A demonstration that:

6.1 The health risk from the facility will be reduced to a level below the risk action levels set forth in Section 11-18-218.2 at any MEI by no later than five years after Plan approval through implementation of the risk reduction measures pursuant to the proposed schedule; or

6.2 The health risk from the facility will be reduced to a level below the risk action levels set forth in Section 11-18-218.2 at any MEI by no later than five years after Plan approval plus such time, not to exceed five additional years, as is necessary to address a technical feasibility issue or to avoid placing an unreasonable economic burden on the facility operator; or

6.3 The facility will comply through application of TBARCT and can show that:

3.1 The health risk from the facility cannot be reduced to a level below the risk action level because it is not feasible, and

3.2 TBARCT has been installed on all significant sources of risk, or will be installed no later than five years after Plan approval plus such time, not to exceed five additional years, as is necessary to address a technical

feasibility issue or to avoid placing an unreasonable economic burden on the facility operator.

- 404.7 An estimate of residual health risk following implementation of the risk reduction measures specified in the Plan.
- 404.8 A certification that the Plan meets all requirements. The person who makes this certification shall be one of the following:
  - 8.1 An engineer who is registered as a professional engineer pursuant to Section 6762 of the Business and Professions Code;
  - 8.2 An individual who is responsible for the operations of the source; or
  - 8.3 An environmental assessor registered pursuant to Section 25570.3 of the Health and Safety Code.

**11-18-405 Review and Approval of Risk Reduction Plans:** The procedure for determining whether a draft Plan submitted pursuant to Section 11-18-403 meets the applicable requirements of this rule is as follows:

- 405.1 Review: Within 20 business days of receipt of the draft Plan, the APCO will conduct a completeness review of the draft Plan. The APCO will notify the facility owner/operator in writing if the submitted Plan is lacking information necessary to make an approval determination. The facility owner/operator shall submit a complete draft Plan within 45 days of receipt of this notification. If the APCO determines that the resubmitted draft Plan is still incomplete, the APCO may disapprove the Plan or may notify the facility owner/operator that the draft Plan continues to lack necessary information and provide another opportunity to submit a complete draft Plan in 45 or fewer days.
- 405.2 Public Comment: The draft Plan, including any revisions made to correct deficiencies, will be made available to the public for 45 days (with exception of confidential information). The APCO will consider any written comments received during this period prior to approving or disapproving the final draft Plan.
- 405.3 Final Action:
  - 3.1 The APCO will approve the draft Plan if the APCO determines that the draft Plan meets the requirements of Section 11-18-404 and will provide written notification to the facility owner/operator.
  - 3.2 If the APCO determines that the draft Plan does not meet the requirements of Section 11-18-404, the APCO will notify the facility owner/operator in writing and will specify the basis for this determination. Upon receipt of such notification, the facility owner/operator shall correct the identified deficiencies and resubmit the draft Plan within 45 days.
  - 3.3 If the APCO determines that the facility owner/operator failed to correct any deficiency identified in the notification, the APCO will determine that the facility owner/operator has failed to meet the requirements of Section 11-18-404, and will disapprove the draft Plan.
- 405.4 Public Inspection: Within 30 days of the approval of a Plan under Section 11-18-405.3, the APCO shall post the Plan on the Air District's website, and shall notify any member of the public, who submitted comments under Section 11-18-405.2, 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.

**11-18-406 Updated Risk Reduction Plan:** For a Plan meeting the requirements of Section 11-18-404.6.3, if information becomes available after the initial APCO approval regarding emissions reduction technologies that may be used by a facility that would significantly reduce health risks to exposed persons or the feasibility of a Plan, the APCO may require or, upon request by a facility owner/operator and approval by the APCO, allow the facility owner/operator to update the Plan to reflect the information and resubmit the Plan to the APCO for approval pursuant to Section 11-18-403.

**11-18-500 MONITORING AND RECORDS**

**11-18-501 Progress Reports:** The facility owner/operator shall report annually to the APCO progress on the emission reductions achieved by the Plan until the Plan is fully implemented or the facility owner/operator can demonstrate to the APCO compliance with Section 11-18-301.2. Reports shall be made no later than each anniversary of the date on which the Plan was approved pursuant to Section 11-18-405.3 and shall be consistent with a format developed by the APCO.



**Appendix A: Equations for Calculating Standard Prioritization Score and Alternative Prioritization Score for Specific Facility Types:**

The standard prioritization score (PS) calculation equations are shown below:

$$\begin{aligned} PS_{\text{CANCER}} &= \sum [(E_i) \times (U_i)] \times (\text{PAF}) \times (\text{NF}_{\text{CANCER}}) \\ PS_{\text{NON-CANCER}} &= \sum [(E_i)/(\text{REL}_i)/(8760)] \times (\text{PAF}) \times (\text{NF}_{\text{NON-CANCER}}) \end{aligned}$$

Where the variables for the standard prioritization score equations are:

- $E_i$  = Toxic air contaminant emissions from the facility (lbs/year) of each TAC (i)
- OEHHA approved toxicity factors for each toxic air contaminant:
  - $U_i$  = Unit Risk Value for each carcinogenic TAC (i),  $(\mu\text{g}/\text{m}^3)^{-1}$
  - $\text{REL}_i$  = Chronic Reference Exposure Level (REL) for each TAC (i),  $\mu\text{g}/\text{m}^3$
- PAF = Proximity Adjustment Factors (PAF) for nearest exposed individual
- NF = Normalization Factors (NF) for each type of health effect ( $\text{NF}_{\text{CANCER}}$  and  $\text{NF}_{\text{NON-CANCER}}$ )

The alternative prioritization score (PS) calculation equations are shown below:

$$\begin{aligned} PS_{\text{CANCER}} &= \sum [(E_i) \times (U_i)] \times (\text{PAF}_{E_i}) \times (\text{EF}_{E_i}) \times (\text{NF}_{\text{CANCER}}) \\ PS_{\text{NON-CANCER}} &= \sum \{(E_i)/(\text{REL}_i)/(8760)\} \times (\text{PAF}_{E_i}) \times (\text{EF}_{E_i}) \times (\text{NF}_{\text{NON-CANCER}}) \end{aligned}$$

Where the variables for the alternative prioritization score equations are:

- $E_i$  = Toxic air contaminant emissions from the facility (pounds/year) of each TAC (i)
- OEHHA approved toxicity factors for each toxic air contaminant:
  - $U_i$  = Unit Risk Value for each carcinogenic TAC (i),  $(\mu\text{g}/\text{m}^3)^{-1}$
  - $\text{REL}_i$  = Chronic Reference Exposure Level (REL) for each TAC (i),  $\mu\text{g}/\text{m}^3$
- $\text{PAF}_{E_i}$  = Proximity Adjustment Factor (PAF) for each type of exposed individual ( $\text{PAF}_{\text{RESIDENT}}$  or  $\text{PAF}_{\text{WORKER}}$ )
- $\text{EF}_{E_i}$  = Exposure Factor (EF) for each type of exposed individual ( $\text{EF}_{\text{RESIDENT}}$  or  $\text{EF}_{\text{WORKER}}$ )
- NF = Normalization Factors (NF) for each type of health effect ( $\text{NF}_{\text{CANCER}}$  and  $\text{NF}_{\text{NON-CANCER}}$ )