

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

**RULE 3503 - EMISSIONS INVENTORY AND HEALTH RISK ASSESSMENT  
FOR RAILYARDS**

*(Adopted October 7, 2005)*

(a) Purpose

The purpose of this rule is to determine criteria pollutant and toxic emissions from railyards to conduct health risk assessments estimating the cancer risk, chronic hazard index, and acute hazard index caused by emissions at railyards, and to notify the public regarding such health risks.

(b) Applicability

This rule shall apply to specified railyards in the District operated by Class I freight railroads and switching and terminal railroads in the District, subject to designation of additional railyards pursuant to subdivision (i). This rule is applicable to the following railroads and railyards:

- (1) Burlington Northern and Santa Fe Railway Company at the following locations:
  - (A) Commerce Diesel Maintenance Facility, 6300 Sheila Avenue, Commerce, CA 90040;
  - (B) Commerce/Eastern Intermodal Facility, 2818 Eastern Avenue, Commerce, CA 90040;
  - (C) La Mirada Yard, 14503 Macaw Street, La Mirada, CA 90638;
  - (D) Los Angeles Intermodal Facility, 3770 Washington Boulevard, Commerce, CA 90023;
  - (E) Pico Rivera Yard, 7427 Rosemead Boulevard, Pico Rivera, CA 90660;
  - (F) San Bernardino Yard, 1535 W 4<sup>th</sup> Street, San Bernardino, CA 92411; and
  - (G) Watson Yard, 1302 Lomita Boulevard, Wilmington, CA 90744.
- (2) A railyard operated by Los Angeles Junction Railway, 4433 Exchange Avenue, Los Angeles, CA 90058.
- (3) A railyard operated by Pacific Harbor Lines, 340 W. Water Street, Wilmington, CA 90744.
- (4) Union Pacific Railroad Company at the following locations:
  - (A) Anaheim Yard, 200 S Adams Street, Anaheim, CA 92802;

- (B) City of Industry Yard, 17525 Arenth Street, City of Industry, CA 91748;
- (C) Colton Yard, 19100 Slover Avenue, Bloomington, CA 92316;
- (D) Commerce Intermodal Facility, 4341 E. Washington Boulevard, Commerce, CA 90023;
- (E) Dolores Yard, 2442 Carson Street, Carson, CA 90810;
- (F) Intermodal Container Transfer Facility (ICTF), 2401 Sepulveda Blvd, Long Beach, CA 90810;
- (G) Los Angeles Transportation Center Intermodal Facility , 750 Lamar Street, Los Angeles, CA 90031;
- (H) Meade Yard, 2402 Anaheim Street, Wilmington, CA 90744;
- (I) Mira Loma Auto Distribution Facility, 4500 Etiwanda Avenue, Mira Loma, CA 91752; and
- (J) Montclair Yard, 10773 Central Place, Montclair, CA 91763.

(c) Definitions

- (1) CLASS I FREIGHT RAILROAD means a Class I railroad, as classified by the Surface Transportation Board in 49 CFR Part 1201 Subpart A, that primarily transports freight rather than passengers.
- (2) CRITERIA POLLUTANT means air contaminants for which federal or state air quality standards have been established.
- (3) DEDICATED RAILYARD EQUIPMENT means stationary, mobile, and portable equipment within a railyard that is owned, leased, or contracted by the railroad and used exclusively at the railyard including, but not limited to, cranes, yard hostlers, forklifts, chassis lifters, locomotive switchers, fuel tanks, wastewater treatment equipment, stationary internal combustion engines, or boilers.
- (4) HEALTH RISK ASSESSMENT means a detailed comprehensive analysis prepared to evaluate and predict the dispersion of hazardous substances in the ambient air and the potential for exposure of human populations and to assess and quantify both the individual and population-wide health risks associated with those levels of exposure.
- (5) IMPACT AREA means any location outside the boundaries of a railyard at which a health risk assessment pursuant to this rule indicates a cancer risk of greater than or equal to one in one million ( $1 \times 10^{-6}$ ), a total acute

or chronic hazard index of one (1.0) or greater, not to exceed an area extending no further than 50 kilometers downwind in any direction.

- (6) LOCOMOTIVE means, for the purpose of this rule, a self-propelled piece of on-track equipment designed for moving or propelling railroad cars that are designed to carry freight, passengers or other equipment, but which itself is not designed or intended to carry freight, passengers (other than those operating the locomotive) or other equipment. The following equipment is not a locomotive: designed for operation both on highways and rails; specialized railroad equipment for maintenance, construction, post accident recovery of equipment, or repairs and other similar equipment; and vehicles propelled by engines with rated horsepower of less than 750 kW (1006 hp). See 40 Code of Federal Regulations Parts 86 and 89 for a further description of this equipment.
- (7) LOCOMOTIVE ENGINE means the propulsion engine or engines incorporated into a locomotive or intended for incorporation into a locomotive.
- (8) MAXIMUM INDIVIDUAL CANCER RISK (MICR) means the estimated probability of a potential maximally exposed individual contracting cancer as a result of exposure to toxic air contaminants over a period of 70 years for residential receptor locations and 40 years for worker receptor locations for the highest modeled cancer risks within a receptor grid, as calculated pursuant to the District's *Health Risk Assessment Guidance for Railyards and Intermodal Facilities (August 2005)*, or the most recently approved District revision to the Guidance. The MICR calculations shall include multi-pathway consideration if applicable.
- (9) NEW RAILYARD means a railyard built, acquired, or established on or after October 7, 2005 for operation by Class I freight railroads or switching and terminal railroads in the District.
- (10) OPERATOR means the railroad responsible for operations of a particular railyard in the District.
- (11) PUBLIC NOTIFICATION LEVEL, for purposes of this rule is a MICR of ten in one million ( $10 \times 10^{-6}$ ) or a total acute or chronic hazard index of one (1.0), for any target organ system at any receptor location.
- (12) RAILROAD means a commercial entity that operates locomotives to transport passengers or freight.

- (13) RAILROAD OPERATIONS means those operations associated with railroads such as line-haul services, switching and terminal services; maintenance, service, and repair of locomotives and railcars; on-road, off-road, and stationary equipment associated with activities such as loading, unloading, moving and transfer of freight, track repair and maintenance operations; and other similar operations conducted by a railroad, or an entity contracted by a railroad.
- (14) RAILYARD means a source or grouping of sources or other air contaminant-emitting activities where railroad operations and associated railroad activities occur that are located on one or more contiguous properties within the Basin in actual physical contact, and if separated, separated solely by a public roadway or other public right-of-way, and are owned or operated by the same person (or by persons under common control). Such above-described groupings, if on noncontiguous properties, connected only by land carrying railroad tracks that are used solely for activities including locomotive fueling or maintenance, loading or unloading of freight, building or breaking down of trains, loading or unloading of freight from railcars, or staging of locomotives or railcars for these activities, shall be considered one railyard. If the above described groupings on noncontiguous properties connected only by land carrying railroad tracks are not used solely for the activities described previously, they shall not be considered one railyard.
- (15) SCHOOL means any public or private school, including juvenile detention facilities with classrooms, used for purposes of the education of more than 12 children at the school, including in kindergarten and any of grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in private homes. The term includes any building or structure, playground, athletic field, or other area of school property, but does not include unimproved school property.
- (16) SWITCHING AND TERMINAL RAILROAD means a non-Class I railroad engaged primarily in switching or terminal services for other railroads.
- (17) TOTAL ACUTE HAZARD INDEX (HI) means the sum of the individual substance acute HIs for all toxic air contaminants affecting the same target organ system.

- (18) TOTAL CHRONIC HAZARD INDEX (HI) means the sum of the individual substance chronic HIs for all toxic air contaminants affecting the same target organ system.
  - (19) TOXIC AIR CONTAMINANT, for the purpose of this rule, means an air pollutant which may cause or contribute to an increase in mortality or serious illness, or which may pose a present or potential hazard to human health. Toxic air contaminants are those listed in Appendix A-1, excluding criteria pollutants, of the Office of Health Hazard Assessment's *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments (October 2003)*, or the most recently approved OEHHA revision to the Guidance Manual.
  - (20) TRANSIENT RAILYARD EQUIPMENT means emission sources within a railyard that are not exclusively used at the railyard, including, but not limited to, line haul locomotives, delivery trucks, or transport refrigeration units, regardless of ownership.
  - (21) WEIGHTED TOXIC AIR CONTAMINANT, for the purpose of this rule, is calculated by multiplying the mass emission rate of a toxic air contaminant quantified in a railyard-wide criteria pollutant and toxic air contaminant emissions inventory by the applicable inhalation cancer potency value listed in Appendix L, Table 1, of the Office of Environmental Health Hazard Assessment's (OEHHA) *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, or the most recently approved OEHHA revision to the Guidance Manual or Appendix.
- (d) Emissions Inventory
- (1) On or before April 7, 2006, an operator of a railyard shall submit an Interim Railyard Emissions Inventory Report that includes the following information for all emission sources within the railyard:
    - (A) Specific identification, as described in the California Air Resources Board's *Emissions Inventory Criteria and Guidelines (July 1997)* for stationary sources and the District's *Railyard Emissions Inventory Methodology* for mobile sources, or the most recently approved revisions to these documents, of all dedicated and transient railyard equipment used or operated in the railyard, including:

- (i) all stationary sources, including, but not limited to, combustion equipment, processes, storage tanks, and fueling stations.
    - (ii) all on-road and off-road mobile sources, including, but not limited to, trucks, motor vehicles, locomotives, yard hostlers, forklifts, cranes, side loaders, empty handlers, chassis stackers, chassis loaders, and chassis flippers;
  - (B) If data for a time interval covering typical operations and equipment activity for the railyard over a period of 12 months or more is not available, description of the time interval over which information required under subparagraphs (d)(2)(A) and (d)(2)(B) will be provided, including an explanation of the basis for selecting the time interval that:
    - (i) Covers a period of at least three months within the past two years, or a shorter time interval as approved by the Executive Officer, provided the shorter time interval can accurately characterize typical annual emissions; and
    - (ii) Shows how the a time interval less than 12 months will be extrapolated to develop an annual emissions estimate that is representative of typical annual operations and equipment activity for the railyard;
  - (C) Description of the source(s) of emission factors for all equipment to be used and emission control efficiencies, if applicable;
  - (D) Description of the railyard, including detailed facility map, identifying entrance(s) and exit(s) of the railyard, loading and unloading areas, fueling areas, service and maintenance areas, classification yards, locomotive parking/idling areas, and any other areas within the railyard where emission sources or operations contributing to emissions occur; and
  - (E) Universal Transverse Mercator (UTM) coordinates for railyard location and railyard boundary vertices.
- (2) On or before October 9, 2006 an operator of a railyard shall submit a railyard-wide criteria pollutant and toxic air contaminant emissions inventory to the Executive Officer that includes the following information for all emission sources within the railyard:

- (A) For dedicated railyard equipment, including both mobile and stationary equipment: emissions of criteria pollutants and toxic air contaminants for the time interval described under subparagraph (d)(1)(B). Such emissions shall be based on fuel use or activity data specific to that emission source, or alternative methods proposed by the railroad and approved by the Executive Officer, and engine information that is specific to that emission source, including: engine type, model classification, model year, horsepower, fuel type, emission factor, load factor, throttle notch, time duration at each throttle notch, and any emissions control devices on the emission source;
  - (B) For transient railyard equipment, including mobile, portable, and stationary equipment: emissions of criteria pollutants and toxic air contaminants for the time interval described under subparagraph (d)(1)(B). Such emissions shall be based on an average number of daily trips, the idling time, the duration of time the source is at the railyard, and emission factors that are representative of the fleet mix for each source category;
  - (C) Documentation of emission factors used and emission control efficiency claimed, such as manufacturer certification data, source tests, or other data developed for or resulting from regulatory development processes. The Executive Officer may approve the use of an alternative source of data, provided the alternative is demonstrated to the Executive Officer's satisfaction as accurately characterizing the emission rate for the applicable equipment; and
  - (D) The sum of weighted toxic air contaminants.
- (3) Methodology
- (A) The emissions inventory for criteria and toxic pollutants shall be prepared for stationary sources by using the applicable emissions inventory methodology established by the California Air Resources Board's, *Emissions Inventory Criteria and Guidelines (July 1997)*, or the most recently approved CARB revision to the Guidelines which addresses this emissions inventory, or any subset of these Guidelines as specified by the Executive Officer.
  - (B) The emissions inventory for criteria and toxic pollutants shall be prepared for mobile sources according to the emissions inventory

methodology specified in the District's *Railyard Emissions Inventory Methodology*, or the most recently approved District revision to this Methodology, which revisions will be published as needed by the Executive Officer.

- (C) Railyard operators may propose alternative emissions inventory methodologies for criteria and toxic pollutants for specific source categories, provided the alternative methodology can accurately estimate emissions subject to Executive Officer approval.

(e) Health Risk Assessment

- (1) On or before January 8, 2007, an operator of a railyard shall submit a health risk assessment to the Executive Officer based on the railyard-wide toxic air contaminant emissions inventory prepared pursuant to subdivision (d) that includes the following information:
  - (A) Railyard name, address, and contact person;
  - (B) Facility plot plan (including a length scale) showing:
    - (i) all stationary and mobile source locations (including their elevations above sea level);
    - (ii) building dimensions;
    - (iii) truck and train routes;
    - (iv) truck and train idling activities;
    - (v) cargo handling activities;
    - (vi) other on- and off-road equipment activities; and
    - (vii) Universal Transverse Mercator (UTM) coordinates for railyard location and railyard boundary vertices;
  - (C) Air dispersion model(s) used and the rationale for selection, model parameters and adjustments, if applicable, emission rates used in the modeling;
  - (D) Receptor grid information for the impact area, including fenceline receptors, as specified in the South Coast Air Quality Management District's most recent *Health Risk Assessment Guidance for Railyards and Intermodal Facilities*;
  - (E) Meteorological data used and the rationale for selection;
  - (F) Risk assessment, based on an exposure duration of 70 years for residents and schools and 40 years for workers, including appropriate multipathway factors;



- (G) Exposure isopleths identifying all areas in the surrounding communities showing the impact area; and
    - (H) In instances where the impact areas of two or more railyards operated by a single operator overlap and where the summed cancer risk for all of the overlapping impact areas is greater than ten in one million, as identified by health risk assessments submitted pursuant to paragraph (e)(1), the operator of the railyards shall report the aggregate risk in the areas of overlap as part of its submittal under paragraph (e)(1).
  - (2) When preparing the health risk assessment, the operator of a railyard shall follow the policies and procedures of the South Coast Air Quality Management District's most recent *Health Risk Assessment Guidance for Railyards and Intermodal Facilities*.
- (f) Approval of the Health Risk Assessment
  - (1) Within 120 days of submittal of the health risk assessment pursuant to subdivision (e), the Executive Officer will accept or reject the health risk assessment. The Executive Officer shall reject the health risk assessment unless the health risk assessment is:
    - (A) complete and contains the information required under paragraph (e)(1);
    - (B) accurate in representing the emission sources from all operations at the railyard;
    - (C) conducted consistent with the policies and procedures specified under paragraphs (e)(2) and (e)(3); and
    - (D) conducted using an emissions inventory that is consistent with methodologies specified in paragraph (d)(3).
  - (2) The District will conduct a public meeting to address the evaluation of the health risk assessment prior to approving the health risk assessment.
  - (3) If the Executive Officer rejects the health risk assessment, the operator of a railyard shall revise and resubmit within 90 days after being notified in writing of the decision. The revised submittal shall correct all deficiencies identified by the Executive Officer.
  - (4) Within 90 days of the submittal of a revised health risk assessment, the Executive Officer will accept or reject the revised health risk assessment. The Executive Officer will modify the health risk assessment to correct

any deficiencies that the operator has not properly corrected and accept it as modified within 120 days of the rejection of the second submittal or failure to resubmit.

(g) Updating Emissions Inventory and Health Risk Assessment

- (1) On or before March 1, 2008, and on March 1 every two years thereafter, the operator of a railyard shall submit an updated emissions inventory for criteria pollutants and toxic air contaminants emissions inventory, providing the information required and prepared using the methodology specified in subdivision (d), representing the previous calendar year.
- (2) On or before the September 1 following submittal of an updated emissions inventory under paragraph (g)(1), the operator of a railroad shall update and submit a new health risk assessment, providing the information required and prepared using the methodology specified in subdivision (e) and subject to the provisions specified in subdivision (f), if:
  - (A) the sum of weighted toxic air contaminants calculated to comply with paragraph (g)(1) is greater than 1.1 times the sum of weighted toxic air contaminants from the emissions inventory submitted pursuant to paragraph (d)(2); or
  - (B) the impact area shifts due to changes at the railyard, such as movement of equipment or operations from previously established locations.
- (3) The previous health risk assessment is in effect until the Executive Officer accepts the updated health risk assessment.

(h) Public Notification Requirements

- (1) The operator of a railyard with an approved health risk assessment showing a risk that exceeds the Public Notification Level, shall notify the public within 60 days of the Executive Officer's approval of the health risk assessment and every 12 months thereafter, unless the total railyard-wide risk has been reduced to below the Public Notification Level.
- (2) The notification shall be provided in accordance with the most recently District approved "Public Notification Procedures for Phase I and II Facilities under the Air Toxics Hot Spots Information and Assessment Act."

- (3) As part of the public notification process, at minimum two public notification meetings shall be held within the impact area. Public notification meetings shall be held at locations proposed by railyard operators and subject to the approval of the Executive Officer, based upon a determination that the location is reasonably accessible to residents and workers in the impact area.
- (i) **Additional Railyards**
    - (1) The Executive Officer may require the operator to submit an emissions inventory and health risk assessment for a Class I freight railyard or switching and terminal railyard not identified in subdivision (b), when, based upon investigation, the Executive Officer determines that emission levels from the railyard may cause exceedance of the public notification level. The operator shall follow the schedule contained in subdivisions (d) and (e) except the time limits shall begin on the date of receipt of notice from the Executive Officer to require an emissions inventory and health risk assessment, instead of from the date of adoption of this rule.
    - (2) Unless a health risk assessment shows risk that is less than the Public Notification Level, the operator of a new railyard shall submit an emissions inventory and health risk assessment to the Executive Officer according to the following schedule:
      - (A) Submit an Interim Railyard Emissions Inventory Report in accordance with the requirements of paragraph (d)(1) within 12 months following commencement of operation of the new railyard;
      - (B) Submit a railyard-wide criteria pollutant and toxic air contaminant emissions inventory to the Executive Officer in accordance with the requirements of paragraph (d)(2) on or before 18 months following commencement of operation of the new railyard; and
      - (C) Submit a health risk assessment to the Executive Officer meeting the requirements of subdivision (e) based on the railyard-wide toxic air contaminant emissions inventory prepared pursuant to subparagraph (i)(2)(B) on or before 21 months following commencement of operation of the new railyard.

(j) Fees

The Interim Railyard Emissions Inventory Report, emissions inventory, health risk assessment, as well as the annual updates to the emissions inventory and health risk assessment and fees incurred under paragraph (f)(4), if applicable, shall constitute plans for the purpose of fees assessed under Rule 306 – Plan Fees.

(k) Penalties

Failure to comply with any requirement of this rule, including failure to comply with requirements of the District's *Health Risk Assessment Guidance for Railyards and Intermodal Facilities* is a violation of this rule and subject to penalties under Health and Safety Code Section 42400 et seq.