UPDATED INFORMATIVE DIGEST

REGULATION TO CONTROL EMISSIONS FROM IN-USE ON-ROAD DIESEL-FUELED HEAVY-DUTY DRAYAGE TRUCKS AT PORTS AND INTERMODAL RAIL YARD FACILITIES

Section Affected: Adoption of new section 2027, title 13, California Code of Regulations (CCR).

Background

Over 90 percent of Californians breathe unhealthful air at times. To improve air quality and human health, the Air Resources Board (ARB / Board) establishes requirements to reduce emissions from new and in-use on-road and off-road vehicles, engines, and other sources. As part of ARB's mission to address air pollution in the state, the Board has adopted a series of regulations requiring manufacturers of new motor vehicles and engines to meet ever more stringent emission standards.[1] Along with the U.S. Environmental Protection Agency (U.S. EPA), ARB has most recently adopted new emission standards for 2007 model year heavy-duty engines[2] that reduce particulate matter (PM) emissions by 90 percent compared to pre-2007 emission standard engines and emission standards for 2010 model year heavy-duty engines that reduce oxides of nitrogen (NOx) emissions by 90 percent compared to pre-2007 emission standard engines.[3] However, at ports and intermodal rail yard facilities, drayage trucks are typically not new, but are older and more polluting. Many of these trucks are more than 20 years old. Because of the slow turnover in these vehicles and the high risk associated with diesel PM emissions, ARB has adopted new in-use standards that will further reduce emissions from drayage trucks that operate at California's ports and intermodal rail yards.

Control of Toxic Air Contaminants and Criteria Pollutants

The California Toxic Air Contaminant Identification and Control Program (Air Toxics Program), established under California law by Assembly Bill 1807 (Stats. 1983, ch. 1047) and set forth in Health and Safety Code sections 39650 through 39675, requires ARB to identify and control toxic air contaminants (TACs) in California.[4] The identification phase of the Air Toxics Program requires ARB, with participation of other State agencies, such as the Office of Environmental Health Hazard Assessment, to evaluate the health impacts of and exposure to substances, and to identify those substances that pose the greatest health threat as toxic air contaminants. ARB's evaluation is made available to the public and is formally reviewed by the Scientific

[1] Title 13, California Code of Regulations (CCR), chapter 1, article 2, sections 1950 et seq.
[2] Engines equipped on heavy-duty vehicles having a gross vehicle weight rating over 14000 pounds
[3] Title 13, CCR, section 1956.8.
[4] All further statutory sections are to the Health & Safety Code unless otherwise indicated.

Review Panel (SRP) established under section 39670. Following ARB's evaluation and the SRP's review, the Board, pursuant to section 39662, may formally identify a TAC at a public hearing. Following identification, sections 39658, 39665, and 39666 require ARB, with participation of the air pollution control and air quality management districts (districts), and in consultation with affected sources and interested parties, to prepare a report on the need and appropriate degree of regulation for that substance (a "needs assessment") and to adopt airborne toxic control measures (ATCMs) for nonvehicular sources. Based on its determination under section 39662 and pursuant to section 39667, ARB is responsible for considering and adopting emission standards and other ATCMs for vehicular sources to achieve the maximum possible reductions in public exposure to TACs.

In 1998, the Board identified diesel PM as a TAC with no Board-specified threshold exposure level. A needs assessment for diesel PM was conducted between 1998 and 2000, which resulted in ARB staff developing and the Board approving a Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles (Diesel RRP) in 2000. The Diesel RRP presented information that identified the available options for reducing diesel PM and recommended control measures to achieve further reductions. The scope of the Diesel RRP was broad, addressing all categories of engines, both mobile and stationary, including those covered by the adopted regulation. The ultimate goal of the Diesel RRP is to reduce California's diesel PM emissions and associated cancer risks from 2000 baseline levels by 85 percent by 2020.

Sections 43013 and 43018 further direct ARB to adopt standards and regulations that the Board has found to be necessary, cost-effective, and technologically feasible to achieve emission reductions of identified criteria pollutants that affect the State's health and welfare from various new and in-use mobile source categories.

The purpose of the adopted in-use drayage truck regulation is to reduce emissions of diesel PM and NOx. Diesel PM emission reductions are needed to reduce the potential cancer risk and other adverse effects from PM exposure to people who live in the vicinity of California's ports, intermodal rail yards, and nearby roadways. Reductions in diesel PM and NOx (which forms "secondary" nitrate PM in the atmosphere) will also contribute to regional PM reductions that will assist in California's progress toward achieving State and federal air quality standards. Reductions in NOx, an ingredient in the formation of ozone pollution, will also help reduce regional ozone levels.

Diesel engines on drayage trucks are a significant source of diesel PM and NOx emissions in California. The adopted regulation will provide needed diesel PM emission reductions in 2010 and NOx reductions in 2014 throughout California after full implementation. These emission reductions will occur in areas near ports and intermodal rail yards, many of which are designated nonattainment for the State and federal ambient air quality standards for PM_{10}, $PM_{2.5}$ and ozone.

Attainment of Ambient Air Quality Standards

The federal Clean Air Act (CAA) requires U.S. EPA to establish National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health, including fine particulate matter ($PM_{2.5}$) and ozone. Set to protect public health, the NAAQS are adopted based on a review of health studies by experts and a public process. Ambient $PM_{2.5}$ is associated with premature mortality, aggravation of respiratory and cardiovascular disease, asthma exacerbation, chronic and acute bronchitis and reductions in lung function. Ozone is a powerful oxidant. Exposure to ozone can result in reduced lung function, increased respiratory symptoms, increased airway hyper-reactivity, and increased airway inflammation. Exposure to ozone is also associated with premature death, hospitalization for cardiopulmonary causes, and emergency room visits for asthma.

Areas in the State that exceed the NAAQS are required by federal law to develop State Implementation Plans (SIPs) describing how they will attain the NAAQS by certain deadlines. The NOx emission reductions are needed because NOx leads to formation in the atmosphere of both ozone and $PM_{2.5}$; diesel PM emission reductions are needed because diesel PM contributes to ambient concentrations of $PM_{2.5}$.

The South Coast Air Quality Management District (SCAQMD) and the San Joaquin Valley Air Pollution Control District (SJVAPCD) are designated as nonattainment of both the federal 8-hour ozone and federal $PM_{2.5}$ NAAQS. In order to demonstrate that the necessary emission control programs are in place for these areas, the U.S. EPA requires that all necessary emission reductions be achieved by 2014 for $PM_{2.5}$ and 2023 for ozone.

In both the South Coast and San Joaquin Valley air basins, air quality modeling indicates that significant reductions of NOx are crucial to help meet the federal standards. For example, at this time, the strategy to achieve attainment of the $PM_{2.5}$ standards in the South Coast Air Basin includes staff estimates that a 55 percent reduction in NOx emissions from 2006 levels (i.e., a total reduction of hundreds of tons per day) and a 15 percent reduction in direct $PM_{2.5}$ emissions from 2006 baseline levels will be necessary for attainment of the $PM_{2.5}$ standards in the South Coast Air Basin. The NOx emission reductions from the adopted regulation will play an essential role in assisting the South Coast Air Basin with meeting its 2014 $PM_{2.5}$ deadline as well as its future ozone deadlines.

The federal CAA permits states to adopt more protective air quality standards if needed, and California has set standards for particulate matter and ozone that are more protective of public health than respective federal standards. Ozone and $PM_{2.5}$ nonattainment areas exist throughout California and include the Bay Area, South Coast, San Joaquin Valley, and San Diego areas. Section 40911 requires the districts to submit plans to the Board for attaining the State ambient air quality standards, and section 40924 requires triennial updates of those plans. The NOx and $PM_{2.5}$ emission

reductions from the regulation will assist the districts in achieving attainment of the State ambient air quality standards.

Authority

ARB has authority under California law to adopt the in-use drayage truck regulation. Sections 39650 through 39675, 43013(b), 43018 and 43600 provide broad authority for ARB to adopt emission standards and other regulations to reduce toxic and criteria air pollutant emissions from new and in-use vehicular, nonvehicular and other mobile sources.

Control of Emissions from Goods Movement-Related Activities

In April 2006, the Board approved the *Emission Reduction Plan for the Ports and Goods Movement in California*. The plan identifies strategies for reducing emissions created from the movement of goods through California ports and into other regions of the State. The Emission Reduction Plan is part of the broader Goods Movement Action Plan (GMAP) being jointly carried out by the California Environmental Protection Agency and the Business, Transportation, and Housing Agency. Phase I of the GMAP was released in September 2005 and highlighted the air pollution impacts of goods movement and the urgent need to mitigate localized health risk in affected communities. The final GMAP was released in January 2007 and includes a framework that identifies the key contributors to goods movement-related emissions.

The Emission Reduction Plan identifies numerous strategies for reducing emissions from all significant emission sources involved in goods movement, including ocean-going vessels, harbor craft, cargo handling equipment, locomotives, and trucks. The Plan identifies several strategies for reducing emissions from drayage trucks. The Plan establishes emission reduction goals for drayage trucks including modernizing (replacing and/or retrofitting) port trucks, implementing CA/US 2007 truck emission standards, and restricting entry of trucks new to port service unless equipped with diesel PM controls. The adopted regulation will represent a significant first step toward satisfying the Emission Reduction Plan goals by requiring the replacement and/or retrofit of trucks to meet newer more stringent emissions requirements.

The California Global Warming Solutions Act of 2006

The California Global Warming Solutions Act of 2006 established requirements for the first-in-the-world comprehensive program of regulatory and market mechanisms to achieve real, quantifiable, cost-effective reductions of greenhouse gases (GHG).[5] The legislation gave ARB responsibility for monitoring and reducing GHG emissions and

[5] Established under California law by Assembly Bill 32 (Stats. 2006, ch. 488) and set forth in HSC § 38500 et seq. Greenhouse gases are those that tend to increase average global temperatures through absorption of infrared radiation or other mechanisms. These include, but are not limited to, carbon dioxide (CO2) and methane (CH4).

requires ARB to adopt regulations and other requirements to reduce statewide GHG emissions to 1990 levels by 2020.

Some actions required by the adopted regulation may result in slightly increased carbon dioxide (CO_2) for some applications. This may occur, for example, if truck owners choose to comply with the regulations by using exhaust treatment technologies that could potentially decrease a vehicle's fuel economy or increase the weight of the vehicle. However, other actions in the regulation would likely offset this effect. For instance, the accelerated phase-in of newer engines, which employ modern, less polluting technologies, should reduce GHG emissions from each new engine relative to the older, in-use engines. In addition, the regulation will reduce emissions of black carbon (a component of diesel PM and a likely contributor to global warming), which will further offset the minor increases in CO_2 emissions that may occur in some applications. Thus, staff expects the regulation to have an overall negligible effect on global warming.

Emission Reductions and Public Health Benefits Projected

The regulation is expected to significantly reduce emissions of diesel PM from drayage trucks operated at California ports and intermodal rail yard facilities. Diesel PM emission reductions are needed to reduce premature mortality, cancer risk, and other adverse impacts from exposure to this TAC. The regulation will help achieve the 2020 goal set forth in the 2000 Diesel RRP of reducing diesel PM by 85 percent from 2000 baseline levels and the 2020 goals of the GMERP of reducing diesel PM by 88 percent. The regulation will also reduce NOx emissions that contribute to exceedances throughout the State of ambient air quality standards for both $PM_{2.5}$ and ozone. These reductions will assist California in achieving State and federal air quality standards. Additionally, these emission reductions will occur in areas along the ports, intermodal rail yards, and nearby roadways where environmental justice concerns are especially prevalent.

The diesel PM and NOx emission reductions are expected to reduce the number of people exposed to an increased cancer risk surrounding California's ports and intermodal rail yards, and especially near the Los Angeles/Long Beach Ports. Statewide, the emission reductions will significantly reduce premature deaths and cases of asthma-related and other lower respiratory symptoms by the year 2020, as well as other health benefits.

In contrast to the diesel PM and NOx reductions, staff is not projecting significant reductions in oxides of sulfur (SOx) from the regulation. Currently, all diesel fuel sold to on-road vehicles is required to meet ARB's on-road diesel specifications (CARB diesel). These specifications help reduce SOx emissions, among other pollutants.

Description of the Regulatory Action

Applicability

The regulation applies to any person who owns or operates a diesel-fueled drayage truck that operates at California ports, intermodal rail yards within 80 miles of ports, and intermodal rail yards located greater than 80 miles from the nearest port with 100 or more drayage truck visits per day. In addition to owners and operators of drayage trucks that operate at ports and intermodal rail yard facilities, the regulation establishes requirements for port and rail authorities, port terminals operators, intermodal rail yards, motor carriers, and potentially other businesses located on port and rail yard property.

Exemptions

The regulation includes a number of exemptions. The regulation does not apply to dedicated trucks of uni-body design, emergency vehicles, military tactical or combat support vehicles, and yard trucks. Additionally, the regulation grants the ARB Executive Officer the ability to authorize an emergency decree that allows noncompliant vehicles into the ports and rail yards in the event of natural emergencies. The regulation also gives the ARB Executive Officer the ability to grant exemptions for ports, providing certain requirements are met (i.e. areas such as marine estuaries that have no truck traffic, and ports where the overwhelming amount of traffic comes from exempted drayage trucks).

Emission Limits for Drayage Trucks

The regulation sets requirements in two phases for drayage trucks that operate at California ports and intermodal rail yards. By December 31, 2009, Phase 1 achieves substantial near-term PM reductions and reduces adverse health affects in nearby local communities. Phase 2 achieves additional emission reductions by December 31, 2013 that are necessary for the State to meet its SIP commitments in federal nonattainment areas.

In general, to continue to operate at ports and intermodal rail yards, drayage trucks will have to meet more stringent emission standards by December 31, 2009. By that date, all drayage trucks operating at the ports or intermodal rail yards will be required to either be equipped with a 1994-2003 model-year engine certified to California or federal emission standards and have a level 3 ARB verified emission control device strategy (VDECS) – a device that achieves diesel PM emission reductions of at least 85 percent – or with a 2004 or newer model-year engine certified to California or federal emission standards. By December 31, 2013, drayage trucks equipped with a 1994 – 2006 model year engine will have to be repowered, replaced, or retrofitted to meet or exceed the 2007 model year California or federal emission standards. While the regulation specifies compliance requirements and deadlines for regulated engines, it does not require specific control technologies or methods that owners and operators must use to achieve compliance – i.e., prescriptive requirements that promote the development of alternative compliance strategies and technologies.

Compliance Extensions

There may be instances where no PM reduction technology has been verified by ARB for certain model-year truck and engine combinations by the time compliance is required. To allow time for the development of PM reduction technologies, the regulation provides that affected truck owners may apply for a one-time one-year extension to the Phase 1 December 31, 2009 compliance deadline. If after granting the extension and a verified technology continues to be unavailable by December 31, 2010, the truck owner will have to comply by other means – most likely engine repower or truck replacement.

Motor Carriers

The regulation requires motor carriers, among other things, to dispatch only compliant drayage trucks to the ports and intermodal rail yards. Motor carriers will also be required to provide a copy of the regulation or ARB approved summary to each drayage truck owner, check that the truck is registered in the Drayage Truck Registry (DTR, see below), ensure the truck driver has motor carrier contact information, and keep detailed dispatch records. Motor carriers will be required to keep the dispatch records for at least five years and provide copies to enforcement personnel upon request

Monitoring, Reporting, and Recordkeeping

The regulation includes reporting and recordkeeping requirements for motor carriers, port terminals, intermodal rail yard facilities, port and rail authorities, and truck owners. Motor carriers are required to keep dispatch records for five years and terminals and rail yards are required to keep records of noncompliant trucks entering their facilities for a similar five-year period. The regulation also requires truck owners to register their vehicles in the DTR. Additionally, port and rail yard authorities are required to summarize noncompliant truck data gathered by the terminals and rail yards and report the results to ARB. Finally, for enforcement purposes, motor carriers, port terminals, and intermodal rail yards are required to provide access to ARB employees or officers upon request.

Drayage Truck Registry

Owners of drayage trucks that operate at ports and intermodal rail yards before September 30, 2009, and who intend to continue such operation after that date will be required to register those trucks in the ARB administered DTR. After September 30, 2009, a drayage truck that has previously not operated at a port or intermodal rail yard will be required to register in the DTR before it commences operations. Using information provided by drayage truck owners, the DTR will record and house pertinent information for each truck, including make, model, engine model year, compliance status, and owner contact information. The DTR can be used by terminals, rail yards, and enforcement personnel -- to determine compliance status. It will also be used by ARB as an outreach tool.

Right of Entry and Violations

The regulation provides ARB with the right of entry to facilities of port terminals, intermodal rail yards, and motor carriers for purposes of inspection and enforcement. It further provides that any violation of the requirements or other provisions will subject the person or business who committed the violation to the penalties, injunctive relief, and other remedies available under applicable provisions of the Health and Safety Code.

Severability

This regulation provides that if any part of the regulation is held to be invalid, the remainder of the regulation will continue in full force and effect.

COMPARABLE FEDERAL REGULATIONS

Pursuant to its authority under CAA section 202(a), U.S. EPA has established emission standards for new diesel, alternative fuel, and gasoline on-road heavy-duty engines. (See Title 40, Code of Federal Regulations, Part 86.) U.S. EPA, however, does not have authority to establish emission standards for in-use on-road motor vehicles. Although California must obtain a waiver of federal preemption under CAA section 209(b) before implementing emission standards for new motor vehicles and engines sold in California, no federal preemption exists for requirements regarding in-use motor vehicles and engines adopted by the State.