

**BEFORE THE
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

In the Matter of California's Request for)
Authorization Action Pursuant to Clean Air)
Act Section 209(e) for In-Use Off-Road)
Diesel-Fueled Fleets Regulation)
_____)

**CLEAN AIR ACT § 209(e)(2) AUTHORIZATION SUPPORT DOCUMENT SUBMITTED
BY THE
CALIFORNIA AIR RESOURCES BOARD**

August 12, 2008

I. INTRODUCTION AND BACKGROUND

The California Air Resources Board (CARB or Board) requests that under Clean Air Act (CAA) section 209(e)(2) the Administrator of the U.S. Environmental Protection Agency (EPA) grant California authorization pursuant to CAA section 209(e)(2) to enforce the in-use performance requirements and associated enforcement provisions recently adopted by the Board as part of its In-Use Off-Road Diesel-Fueled Fleets Regulation (In-Use Regulation). Section II of this document describes the regulation as adopted, and Section III describes the rationale for why the Administrator must grant the authorization as it applies to the various elements of the regulation.

The Board approved the In-Use Regulation at a public hearing on July 26, 2007, by Resolution 07-19 (enclosed herewith). At the direction of the Board, after making modifications to the regulation available on December 11, 2007, February 5, 2008, and March 5, 2008 for supplemental public comment, CARB's Executive Officer formally adopted the In-Use Regulation in Executive Order R-08-002 on April 4, 2008. (The three modifications to the regulation and the Executive Order are enclosed herewith.) The requirements are codified at title 13, California Code of Regulations (CCR) section 2449 through 2449.3.¹ The California Office of Administrative Law approved the regulation on May 16, 2008, and it became operative on June 15, 2008.

The regulation was adopted, in part, under California's Air Toxics Program, set forth in Health and Safety Code (H&SC) sections 39650 through 39675, and CARB's authority to adopt and implement regulations for off-road motor vehicles under H&SC sections 43013 and 43018. The Air Toxics Program mandates the identification and control of toxic air contaminants (TACs) in California. The identification phase of the Air Toxics Program requires CARB, 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 TACs. CARB's evaluation is made available to the public and is formally reviewed by the Scientific Review Panel (SRP) established under H&SC section 39670. Following CARB's evaluation and the SRP's review, the Board will consider and formally identify a TAC at a public hearing. Following the identification of a substance as a TAC, Health and Safety Code sections 39658, 39665, and 39667 require CARB, with the participation of the air pollution control and air quality management districts (local air 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.

In 1998, the Board identified diesel particulate matter (diesel PM) as a toxic air contaminant with no Board-specified threshold exposure level. A needs assessment for diesel PM was conducted between 1998 and 2000, which resulted in CARB developing a Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled

¹ Unless otherwise noted, all section references are to title 13, CCR.

Engines and Vehicles (Diesel RRP). The Diesel RRP presented information that identified the available options for reducing diesel PM and recommended regulations to achieve further reductions. The scope of the Diesel RRP was broad, addressing all categories of diesel engines, both mobile and stationary.

Once CARB has evaluated the need to regulate a TAC, H&SC section 39667 requires that CARB adopt regulations to reduce emissions of the TAC from vehicular sources, such as off-road vehicles, to the lowest level achievable levels through the application of best available control technology (BACT) or a more effective control method, after consideration of cost, risk, environmental impacts, and other specified factors. In adopting the In-Use Regulation, the Board considered all of the above.

The federal Clean Air Act (CAA) requires EPA to establish National Ambient Air Quality Standards (NAAQS) for pollutants considered to be 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.

For areas in California that exceed the NAAQS, CARB is responsible under CAA section 110 for developing a State Implementation Plan (SIP) that describes how the state will attain the standards by certain deadlines. Two air basins in California in particular – South Coast Air Basin and the San Joaquin Valley Air Basin – are in non-attainment for both PM_{2.5} and the eight-hour ozone standard. Significant emission reductions of oxides of nitrogen (NOx) are needed because NOx leads to formation in the atmosphere of both ozone and PM_{2.5}; diesel PM emission reductions are also needed because diesel PM contributes to ambient concentrations of PM_{2.5}. The South Coast and San Joaquin Valley air basins are both required to attain the PM_{2.5} standard by 2015. The EPA further requires that all necessary emission reductions be achieved one calendar year sooner – by 2014 – in recognition of the annual average form of the standard. By contrast, San Joaquin Valley and South Coast air basins are expected to have until 2023 to attain the federal ozone standard, by invoking the “bump-up” provision in the CAA.

The ozone and PM_{2.5} SIPs were due to the EPA by June 2007 and April 2008, respectively. Currently, the South Coast Air Quality Management District (SCAQMD) and the San Joaquin Valley Air Pollution Control District (SJVAPCD) have submitted to EPA SIPs which demonstrate attainment of the federal 8-hour ozone standard by 2024. To attain the federal ozone standard, NOx reductions of nearly 90 percent (from 2006

levels) are needed in the SCAQMD, while NOx reductions of about 80 percent are needed in the SJVAPCD.

With respect to the federal PM_{2.5} standard, the SCAQMD has submitted a SIP that demonstrates attainment of that standard by 2014, but only after achieving emission reductions of nearly 55 percent in NOx and 15 percent in PM_{2.5}, from 2006 levels. The SJVAPCD also submitted a SIP that demonstrates attainment of the federal PM_{2.5} standard by 2014. In order to attain the federal PM_{2.5} standard in the San Joaquin Valley, NOx emissions will need to be reduced by nearly 50 percent, and PM_{2.5} emissions will need to be reduced by slightly more than 25 percent.

The regulation is expected to significantly reduce emissions of diesel PM from in-use off-road diesel vehicles. The regulation will achieve the 2020 goal set forth in the 2000 Diesel RRP by reducing in-use off-road vehicle diesel PM emissions throughout the State from the 2000 baseline by 37 percent in 2010 and 92 percent in 2020.

In 2020, the statewide requirements of In-Use Regulation are expected to reduce diesel PM emissions by 5.2 tons per day and NOx emissions by about 48 tons per day statewide, which represents a 74 percent reduction in diesel PM and a 32 percent reduction in NOx from emission levels anticipated in the absence of the regulation. Additional emission reductions will be achieved if local air districts opt into the Surplus Off-Road Opt-in for NOx (SOON) Program.² For example, it is projected that the South Coast Air Quality Management District, having opted into SOON, will achieve between 5 and 12 tons per day in additional NOx emission reductions. In addition, for each repower funded through the SOON program, it is estimated that PM emissions per engine will be reduced by approximately 70 percent (assuming that a Tier 0 engine is replaced with a Tier 3 engine). Staff estimates that in year 2014 this will result in an additional 0.2 tons per day of PM reductions in the South Coast.

II. SUMMARY OF THE IN-USE REGULATION³

A. Statewide In-Use Performance Requirements

Sections 2449 through 2449.2 of the adopted In-Use Regulation establish fleet requirements that apply to any person, business, or government agency that owns and operates in-use diesel vehicles in California with a maximum power of 25 horsepower (hp) or greater that are used to provide motive power in a workover rig or to any other motor vehicle that (1) cannot be registered and driven safely on-road, and (2) is not an implement of husbandry or recreational off-highway vehicle. The regulation only addresses engines that propel covered vehicles and does not apply to stationary equipment or portable equipment such as generators.

² Section 2449.3 is described in greater detail in section 2, *infra*.

³ A detailed discussion of the adopted in-Use Regulation is set forth in the Staff Report: Initial Statement of Reasons and the Technical Support document, copies of which are enclosed herewith.

Industries such as construction, mining, landscaping, airlines, retail, wholesale, equipment rental, ski, oil and gas drilling, recycling, utilities, telephone and cable, and many others are subject to the regulation as are government agencies engaged in activities such as road and park maintenance.

The regulation divides fleets into three categories based on the total horsepower of the vehicles in the fleet and the classification of the fleet owner. A small fleet is defined as a fleet with total maximum power of less than or equal to 2,500 hp that is owned by a business, non-profit organization, or local municipality. It also includes a fleet owned by a local municipality in a low population county and a fleet owned by a non-profit training center, irrespective of the fleet's total maximum power. A medium fleet is defined, in general, as a fleet that is neither small nor large, and typically having a total maximum power greater than 2,500 hp but less than or equal to 5,000 hp. A large fleet is typically a fleet with a total maximum power greater than 5,000 hp and includes both federal and State of California owned fleets.

In general, the regulation requires owners of in-use off-road vehicles to reduce emissions of NOx and PM through modernization of their fleets and application of exhaust retrofits. Large fleets must begin to comply with the NOx and PM requirements by March 1, 2010; medium fleets by March 1, 2013. Small fleets must begin to meet the PM requirements by March 1, 2015, and are not required to meet any NOx in-use performance requirements.

Under the regulation, by the applicable compliance date each year, large and medium fleets may comply in-use performance requirements by either meeting the fleet average emission standards for NOx and PM or by meeting an alternative control performance requirement. A fleet has a variety of compliance options. For example, in any year it may elect to comply with the fleet average targets for both NOx and PM, the BACT requirements for both NOx and PM, or fleet average target for NOx and the BACT requirement for PM, or vice-versa. Large and medium fleets must meet the same fleet average emission rate targets for PM and NOx, although, as stated compliance begins three years earlier for large fleets. The fleet average targets decline over time, requiring fleets to reduce their emissions further as time goes on. The NOx and PM fleet average targets for large and medium fleets are set forth respectively in Tables 1 and 2 below:

Table 1 – Large and Medium Fleet NOx Targets For Use in Calculating NOx Target Rates [g/bhp-hr]

	NOx Targets for each Max Hp Group							
Compliance Date: March 1 of Year	25-49 hp	50-74 hp	75-99 hp	100- 174 hp	175-299 hp	300-599 hp	600- 750 hp	>750 hp
2010 (large fleets only)	5.8	6.5	7.1	6.4	6.2	5.9	6.1	7.2
2011 (large fleets only)	5.6	6.2	6.7	6.0	5.8	5.5	5.6	6.8
2012 (large fleets only)	5.3	5.8	6.2	5.5	5.3	5.1	5.2	6.5
2013	5.1	5.5	5.7	5.1	4.9	4.7	4.8	6.1
2014	4.9	5.1	5.2	4.7	4.5	4.3	4.4	5.7
2015	4.6	4.8	4.8	4.3	4.1	3.9	4.0	5.3
2016	4.4	4.4	4.3	3.8	3.6	3.5	3.6	4.9
2017	4.2	4.1	3.8	3.4	3.2	3.1	3.2	4.5
2018	4.0	3.7	3.3	3.0	2.8	2.7	2.7	4.1
2019	3.7	3.4	2.8	2.6	2.3	2.3	2.3	3.8
2020	3.5	3.2	2.4	2.2	1.9	1.9	1.9	3.4

**Table 2 – Large and Medium Fleet PM Targets
For Use in Calculating PM Target Rates [g/bhp-hr]**

Compliance Date: March 1 of Year	PM Targets for each Max Hp Group							
	25-49 hp	50-74 hp	75-99 hp	100-174 hp	175-299 hp	300-599 hp	600-750 hp	>750 hp
2010 (large fleets only)	0.46	0.60	0.62	0.33	0.23	0.18	0.20	0.30
2011 (large fleets only)	0.46	0.60	0.62	0.33	0.23	0.18	0.20	0.30
2012 (large fleets only)	0.39	0.43	0.46	0.26	0.16	0.14	0.14	0.24
2013	0.39	0.43	0.46	0.26	0.16	0.14	0.14	0.24
2014	0.29	0.23	0.24	0.18	0.11	0.11	0.11	0.18
2015	0.29	0.23	0.24	0.18	0.11	0.11	0.11	0.18
2016	0.21	0.18	0.19	0.14	0.08	0.08	0.08	0.11
2017	0.21	0.18	0.19	0.14	0.08	0.08	0.08	0.11
2018	0.12	0.12	0.13	0.10	0.06	0.06	0.06	0.08
2019	0.12	0.12	0.13	0.10	0.06	0.06	0.06	0.08
2020	0.08	0.08	0.07	0.06	0.03	0.03	0.03	0.06

The PM fleet average targets for small fleets are set forth in Table 3.

**Table 3 – Small Fleet PM Targets
For Use in Calculating PM Target Rates [g/bhp-hr]⁴**

Compliance Date: March 1 of Year	PM Targets for each Max Hp Group							
	25-49 hp	50-74 hp	75-99 hp	100-174 hp	175-299 hp	300-599 hp	600-750 hp	>750 hp
2015	0.46	0.60	0.62	0.33	0.23	0.18	0.20	0.30
2016	0.46	0.60	0.62	0.33	0.23	0.18	0.20	0.30
2017	0.39	0.43	0.46	0.26	0.16	0.14	0.14	0.24
2018	0.39	0.43	0.46	0.26	0.16	0.14	0.14	0.24
2019	0.29	0.23	0.24	0.18	0.11	0.11	0.11	0.18
2020	0.29	0.23	0.24	0.18	0.11	0.11	0.11	0.18
2021	0.21	0.18	0.19	0.14	0.08	0.08	0.08	0.11
2022	0.21	0.18	0.19	0.14	0.08	0.08	0.08	0.11
2023	0.12	0.12	0.13	0.10	0.06	0.06	0.06	0.08
2024	0.12	0.12	0.13	0.10	0.06	0.06	0.06	0.08
2025	0.08	0.08	0.07	0.06	0.03	0.03	0.03	0.06

To meet the NOx and PM fleet averages, fleets may retrofit their vehicles' exhaust systems with verified diesel emission control devices (VDECS),⁵ replace the engines in

⁴ As stated, small fleets do not have to meet NOx performance requirements.

existing vehicles with cleaner engines (i.e., repower), replace older, higher emitting vehicles with newer vehicles equipped with cleaner engines, retire high-emitting vehicles, and/or designate high-emitting vehicles as low-use vehicles (limiting operation to less than 100 hour per year).⁶

Large and medium fleets that cannot, or otherwise elect not to, meet the NOx fleet average standard for a particular year must instead, as a BACT requirement, turnover a specified percentage of their fleet in that year. Beginning March 1, 2010 for large fleets and March 1, 2013 for medium fleets, fleet owners are required to demonstrate they have turned over eight percent of the total maximum power of their fleet each year. After March 1, 2015, 10 percent of the total maximum power of the fleet must be turned over annually. Similar to reducing a fleet average, a fleet may meet the turnover requirement by retiring a vehicle, designating a vehicle as a low-use vehicle, repowering a vehicle, rebuilding the engine of a vehicle to a more stringent emissions configuration, or applying a VDECS verified to achieve NOx reductions. A large and medium fleet failing to meet the NOx fleet average targets after the final target date, March 1, 2020, must continue to turnover 10 percent of its fleet annually, until the final target is achieved.

All fleets, irrespective of size, that cannot or elect not to meet the PM fleet average requirements for a particular year must instead, as a BACT requirement, retrofit 20 percent of the total maximum power of the fleet with the highest level of VDECS available for reducing PM emissions in the respective engines. A VDECS will be considered the highest level VDECS available if it is the highest level device verified by CARB to be effective and durable for the engine on which it will be installed and if the system can be used safely. On or after March 1, 2021 for large and medium fleets, and on or after March 1, 2026 for small fleets, all vehicles in the fleet, with limited exceptions, must be equipped with the highest level VDECS available for such engines at the time of installation or have an original manufacturer diesel particulate filter that came new with the vehicle. Low-use vehicles are not required to have a VDECS installed, and large and medium fleets may postpone installing VDECS on vehicles subject to turnover for failing to meet the final NOx target until those vehicles are replaced.

⁵ Emission control strategies are verified pursuant to the CARB's Verification Procedure, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines, title 13, CCR, sections 2700-2710. The purpose of the verification procedure is to verify strategies and systems that reduce diesel PM emissions from in-use engines. Verification is granted by CARB after a technical review and confirmation that the verified device achieves its advertised emission reductions and is durable based on in-use field testing. In addition, to be verified, the device manufacturer is required to provide a warranty against engine damage caused by the diesel emission control strategy. To protect the end user, only CARB-verified VDECS can be used in all of CARB's mandated and most of its voluntary retrofit programs.

⁶ Under the regulation, vehicles designated as low-use are not included in calculating the fleet average and are exempt from the retrofit, turnover and fleet average requirements.

The regulation also restricts the ability of owners to add vehicles to their fleets. Beginning on March 1, 2009, no fleet may add a vehicle with a Tier 0 engine. Between March 1, 2010 and March 1, 2020 for large fleets and March 1, 2013 and March 1, 2020 for medium fleets, even fleets that meet the fleet average targets for a specific year may not add any vehicles to the fleet if it will cause the fleet average to exceed the fleet average target for that year. Additionally, fleets that comply with the performance requirements through either turnover or retrofitting cannot add a vehicle to their fleets unless the vehicle is equipped with a Tier 2 or higher engine or is a flex-certified engine as provided for in title 13, CCR, section 2423(d), and the engine's NOx emission factor is less than or equal to the NOx target factor for the specific year. For small fleets that choose to retrofit their fleet to meet the PM performance requirements, they may not add a vehicle to their fleet unless it is equipped with a Tier 2 or higher engine or is a flex-certified engine as provided for in title 13, CCR, section 2423(d).

After March 1, 2020, large and medium fleets may only add a vehicle to their fleets if the vehicle is equipped with a Tier 3 or higher engine. Small fleets may only add a vehicle if it is equipped with a Tier 3 or higher engine after March 1, 2025.

Finally, the regulation requires that operators of off-road diesel vehicles shut down their vehicles rather than operate them in idle mode for more than five minutes, unless such idling is necessary for the proper or safe operation of the vehicle. This last requirement, being an in-use operational control, does not require authorization from EPA.

B. Compliance Flexibility

The In-Use Regulation includes numerous provisions that provide fleets with flexibility in complying with the in-use performance requirements. For example, in order to give relief to small businesses, the regulation contains special, less restrictive provisions for small fleets that have 2,500 or less affected hp. Small fleets are completely exempt from all accelerated turnover requirements and do not need to begin to reduce emissions until 2015. The regulation also has less restrictive provisions for those fleets in counties that currently are in attainment with the federal ambient air quality standards for ozone and PM, as well as less strict provisions for public fleets that reside in rural counties with low populations. Like small fleets, these fleets do not have to comply with the regulation's NOx performance requirements. The regulation also exempts low-use vehicles that operate less than 100 hours per year, emergency vehicles, vehicles engaged in agricultural operations, and vehicles used only to remove snow from public roads from all in-use performance requirements.

The regulation also exempts the following vehicles from the NOx turnover requirements: vehicles less than 10 years old, specialty vehicles for which no used equipment or repowers are available, vehicles that have been retrofitted with best available technology in the past six years, and vehicles equipped with Tier 4 and interim Tier 4 engines. Similar exemptions from the PM retrofit requirements exist for the following engines: engines in vehicles less than five years old, engines for which there is no

retrofit available or for which a retrofit cannot be safely installed, new engines that come with an original equipment manufacturer diesel particulate filter, and engines that have been previously retrofitted with the best available VDECS at the time of installation.

Additionally, the regulation provides fleets with various special credits when replacing diesel vehicles with electric and alternative fuel vehicles, stationary or portable engines, or gasoline-powered vehicles. These credits can be used to assist a fleet when computing its NOx and PM fleet averages and BACT requirements.

Relief is also provided by exempting fleets from non-compliance if their failure to not comply is because of manufacturer-caused delays in producing compliant vehicles, engines, or VDECS. A fleet owner would be excused from compliance if it had entered into a purchase agreement for a replacement vehicle or engine or first installation of a VDECS at least four months prior to the compliance date and had not received the purchased product because of manufacturer delay. In the case of a replacement for a malfunctioning VDECS, the fleet owner would be excused from compliance if it had entered into a purchase agreement at least 60 days before replacement is required and it had not as yet received the product.

Beyond specific manufacturer delays, if there are general delays in the availability of Tier 3 and 4 engines for particular categories of vehicle applications, the Executive Officer may delay compliance with the NOx and PM fleet average target rates and turnover and VDECS requirements for specific years.

The regulation further does not require that a VDECS be installed if its use would be unsafe to the operator or other persons. The Executive Officer will grant an exemption upon a fleet being able to demonstrate that the VDECS cannot be safely installed or operated in a particular vehicle application or its use conflicts with occupational or mine safety and health requirements. Finally, the regulation provides double credit for early installation of VDECS to encourage early action and to allow fleets to spread out their compliance costs over a longer period of time.

C. Other Statewide Requirements: Labeling, Recordkeeping, and Reporting

Section 2449(f) requires that all vehicles with engines subject to the regulation must be labeled with a CARB-issued equipment identification number (EIN). Electric and alternative fuel vehicles, stationary or portable systems, and gasoline-powered vehicles used to replace diesel vehicles must also be labeled with a CARB-issued EIN. CARB will issue a unique EIN to the fleet owner for each vehicle subject to the regulation in response to the fleet's reporting of its vehicles. Vehicles with two engines that provide motive power will receive two EINs.

Sections 2449(g) and (h) require that fleets file reports and maintain records for the dual purpose of assessing emissions inventory and enforcement.⁷ Each and every fleet must file annual reports with CARB setting forth information on the size and composition of the fleet. Large and medium fleets may report separately for different divisions or subsidiaries of a given company or agency. Initial, emission source reporting, setting forth information of the vehicles in the fleet as of March 1, 2009, must be filed by large fleets on or before April 1, 2009. Medium fleets have until June 1, 2009 to file initial reports, and small fleets have until August 1, 2009. Information required in the initial reports includes information on the fleet owner, types of vehicles in the fleet, engines and VDECS installed on such vehicles, and identification of potential early credits that a fleet may receive.

Annual reporting regarding a fleet's status as of March 1 of each year begins for large fleets on April 1, 2010, medium fleets on June 1, 2012, and small fleets on August 1, 2014. In general, large and medium fleets must file annual reports through 2021, and small fleets through 2026. Fleets that do not comply with the performance requirements in the last year of required reporting, must continue annual report filing until compliance is achieved. In the annual reports, fleets must report any changes to the fleet's composition since the last filed report.

Fleet owners must maintain copies of the information reported under section 2449(g), as well as additional records described in section 2449(h) and provide them to an agent or employee of the CARB within five business days upon request. Records must be kept at a location within the State of California. Records for individual vehicles must be retained until the vehicle has been retired, and records pertaining to the overall fleet must be retained until 2030 or until the fleet no longer exists, whichever is earlier. Among the additional records required under section 2449(h) are: any changes to the fleet since filing of its last annual report, information on vehicles newly purchased or required and not yet labeled, documentation of engines rebuilt to a more stringent emissions configuration, information on VDECS and their failures, documentation of manufacturer delays, and records of any approval granted by the Executive Officer exempting the fleet from any compliance requirements.

D. Surplus Off-Road Opt-In for NOx (SOON) Program

Section 2449.3 of the In-Use Off-Road Regulation establishes a program designed to achieve additional NOx emission reductions in local air districts called the SOON program. Local air districts may opt into this program to reduce NOx emissions beyond what is required by the statewide NOx requirements of the off-road regulation.⁸ Under the program, local air districts that opt into the program may require⁹ the largest fleets

⁷ Emissions inventory reporting does not require authorization under CAA section 209(e)(2).

⁸ Title 13, CCR, section 2449.1.

⁹ Before April 2, 2009, participation by fleets is voluntary. For SOON program solicitations with deadlines on or after April 2, 2009, the SCAQMD or SJVAPCD may choose to make participation by fleets voluntary

that operate vehicles in the district to apply for incentive funding to finance additional actions to reduce NOx emissions beyond what is called for in section 2449.1. If they do not receive funding, the fleets would not be required to achieve supplemental NOx reductions.

Specifically, if a local air district makes the SOON program mandatory, fleets must apply to the district's SOON program if (1) they are larger than 20,000 hp, (2) contain vehicles that operate more in the local air district than in any other district, and (3) have a statewide fleet that consisted of more than 40 percent Tier 0 and Tier 1 vehicles in 2008. Other fleets that operate within the local air district, but do not meet the above criteria, are allowed to apply for SOON funding if they wish but are not required to do so.

If a local air district opts into the SOON program, it will issue a solicitation for applications for funding within that air district. If the program is mandatory, qualifying fleets must respond and report all required fleet information to the air district. If the district makes the SOON program voluntary, a fleet may decide whether or not to participate. Fleets that are required to participate in the SOON program or that choose to do so must submit the same vehicle information to the district that is required by the off-road regulation. Additionally, the fleet must calculate and report the NOx index for the vehicles that operate in the district and SOON NOx target rate for those vehicles. The NOx index and SOON NOx target rates for the applicable vehicles in the air district are calculated using the formulas under section 2449.1 for the statewide NOx fleet average. The SOON NOx target rates are shown below in Table 1.

Table 1: SOON NOx Targets for each Max Hp Group (g/bhp-hr)

Compliance Date: March 1 of Year	Horsepower Groups							
	25-49	50-74	75-99	100-174	175-299	300-599	600-750	>750
2011	5.6	6.2	6.7	6.0	5.4	5.1	5.3	6.4
2014	4.9	5.1	5.2	4.7	2.8	2.7	2.7	4.2
2017	4.2	4.1	3.8	3.4	1.5	1.5	1.5	3.2
2020	3.5	3.2	2.4	2.2	0.9	0.9	0.9	2.6
2023	3.5	3.2	2.4	2.2	0.9	0.9	0.9	2.6

Fleets that apply and receive funding must take actions above and beyond that required under the statewide NOx performance requirements of section 2449.1. This entails additional modernization of the fleet through NOx exhaust retrofits, repowers, vehicle replacements, or other actions to decrease the NOx index for the applicable vehicles operating within the air district. The NOx index must be decreased from where it would have been (under compliance with section 2449.1) to less than or equal to the SOON NOx target rate calculated from Table 1.¹⁰ Fleets that apply but do not receive

or mandatory. For SOON program solicitations with deadlines on or after April 2, 2010, any district may choose to make participation by fleets voluntary or mandatory.

¹⁰ If NOx exhaust retrofits, repowers, or vehicle replacements are not available for the applicable SOON vehicles, the SOON NOx targets do not have to be met.

requested SOON program funding are not required to take actions beyond compliance with the off-road regulation.

To date, only the SCAQMD has opted into the SOON program. The SCAQMD chose to make the SOON program mandatory beginning in 2009.

III. AUTHORIZATION ANALYSIS

A. Criteria for Granting New Authorizations

Section 209(e)(2) of the CAA sets forth the protocol for granting California authorization to adopt and enforce standards and other requirements relating to the control of emissions from nonroad engines that are not otherwise conclusively preempted from state regulations under section 209(e)(1). Under section 209(e)(2), the Administrator is directed to grant authorization to California if he determines that the State's standards will be, in the aggregate, at least as protective of public health and welfare as applicable federal standards, unless he finds that: (1) the protectiveness finding of the state is arbitrary and capricious; (2) California does not need separate state standards to meet compelling and extraordinary conditions; or (3) the state standards and accompanying enforcement procedures are not consistent with section 209 of the CAA.

This authority is similar to that which Congress granted to the State in section 209(b) – the right to adopt and enforce independent emission standards for new motor vehicles. Section 209(e)(2), like section 209(b), requires California to obtain the Administrator's approval (i.e., waiver or authorization). In reviewing a California request for an authorization under section 209(e)(2), the Administrator must consider nearly identical criteria as under section 209(b). In light of these almost identical protocols, the EPA has confirmed that it would similarly interpret sections 209(b) and (e) where the language is similar.¹¹

One deviation in language is that section 209(e)(2) requires that the Administrator must consider consistency with not only section 202(a) – as required under section 209(b)(1)(C) – but also other subsections of section 209. In its *209(e) Final Rule*, EPA interpreted this provision to require that California's standards and accompanying enforcement provisions must also be consistent with sections 209(a) and 209(e)(1).¹² As the Administrator stated in first confirming that amendments to California nonroad standards were within the scope of a previous authorization:

In [o]rder to be consistent with section 209(a), California's [nonroad] standards and enforcement procedures must not apply to new motor vehicles or new motor vehicle engines. Secondly, California's nonroad

¹¹ *Air Pollution Control; Preemption of State Regulation for Nonroad Engine and Vehicle Standards (Final 209(e) Rule)*, 59 Fed. Reg. 36969, 36981 (July 20, 1994); see also *Utility Authorization*, Decision Document, at p. 11; see also 65 Fed.Reg. 69763, 69763-69764 (November 20, 2000).

¹² 59 Fed.Reg. 36969, 36983 (July 20, 1994).

standards and enforcement procedures must be consistent with section 209(e)(1), which identifies the categories permanently preempted from state regulation. California's nonroad standards and enforcement procedures would be considered inconsistent with section 209 if they applied to the categories of engines or vehicles identified and preempted from State regulation in section 209(e)(1). Finally, and most importantly in terms of application to nonroad within the scope requests such as these, California's nonroad standards and enforcement procedures must be consistent with section 209(b)(1)(C). EPA will review nonroad authorization requests under the same "consistency" criteria that are applied to motor vehicle waiver requests. Under section 209(b)(1)(C), the Administrator shall not grant California's motor vehicle waiver if she finds that California "standards and accompanying enforcement procedures are not consistent with section 202(a) of the Act."¹³

In addressing authorizations for associated enforcement requirements, the Administrator has considered whether the enforcement procedures are so lax that they threaten the validity of California's determination that its standards are as protective of public health and welfare as applicable federal standards and, whether the enforcement procedures are consistent with section 202(a).¹⁴

B. The Principles for Granting Section 209(b) Waivers Apply to Section 209(e) Authorization Requests

In light of the similar language of sections 209(b) and 209(e)(2), CARB believes that EPA should analyze requests for California authorization under 209(e)(2) using the same principles that it has historically applied in analyzing motor vehicle waiver requests under section 209(b). These principles include: (1) EPA should limit its inquiry to the specific criteria identified in section 209(e)(2); (2) it should give substantial deference to the policy judgments California has made in adopting its regulations; and (3) those parties opposed to the granting of authorization have the burden of persuading the Administrator that no basis exists for granting the authorization request.

1. The Scope of the Authorization Hearing Is Limited

The scope of the Administrator's inquiry in determining whether to deny an authorization request is limited by the express terms of section 209(e)(2). In the *Final 209(e) Rule*, EPA acknowledged that its inquiry would be so limited.¹⁵ Thus, once California determines that its standards are, in the aggregate, at least as protective of public health and welfare as applicable federal standards, the Administrator must grant the authorization request unless one of the three specified findings can be made. This

¹³ 65 Fed.Reg. 69763, 69764 (November 20, 2000).

¹⁴ See *Motor and Equipment Manufacturers Association v. EPA (MEMA I)* (D.C. Cir. 1979) 627 F.2. 1095, 1111, 1113.

¹⁵ *Final 209(e) Rule*, 59 Fed. Reg. at 36983.

reading of the statute is consistent with the decision in *Motor and Equipment Manufacturers Association v. EPA*, 627 F.2d 1095 (D.C. Circuit 1979) (*MEMA I*) and prior EPA waiver decisions interpreting section 209(b), which hold that the review of California's decision to adopt separate standards is a narrow one.¹⁶ As Administrator William D. Ruckelshaus stated in a 1971 decision:

The law makes it clear that the waiver request cannot be denied unless the specific findings designated in the statute can properly be made. The issue of whether a proposed California requirement is likely to result in only marginal improvement in air quality not commensurate with its cost or is otherwise an arguably unwise exercise of regulatory power is not legally pertinent to my decision under section 209. . . .¹⁷

2. Deference Must Be Given to California's Policy Judgments

As indicated in the waiver decisions cited above, in granting waivers to California's motor vehicle program, EPA has routinely deferred to the policy judgments of California's decision-makers. EPA has recognized that the intent of Congress in creating a limited review of California's determinations that California needs its own separate standards was to ensure that the federal government not second-guess the wisdom of state policy.¹⁸ Administrators have recognized that the deference is wide-ranging:

The structure and history of the California waiver provision clearly indicate both a Congressional intent and an EPA practice of leaving the decision on ambiguous and controversial matters of public policy to California's judgment.

* * * * *

It is worth noting . . . I would feel constrained to approve a California approach to the problem which I might also feel unable to adopt at the federal level in my own capacity as a regulator. The whole approach of the Clean Air Act is to force the development of new types of emission control technology where that is needed by compelling the industry to "catch up" to some degree with newly promulgated standards. Such an approach . . . may be attended with costs, in the shape of a reduced product offering, or price or fuel economy penalties, and by risks that a wider number of vehicle classes may not be able to complete their development work in time. Since a balancing of these risks and costs

¹⁶ See 40 Fed.Reg. 23102, 23103 (May 28, 1975).

¹⁷ 36 Fed.Reg. 17158 (August 31, 1971). See also 40 Fed.Reg. 23102, 23104; 58 Fed.Reg. 4166 (January 7, 1993), Decision Document, at p. 20.

¹⁸ 40 Fed.Reg. 23102, 23103.

against the potential benefits from reduced emissions is a central policy decision for any regulatory agency under the statutory scheme outlined above, I believe I am required to give very substantial deference to California's judgments on this score.¹⁹

In allowing California to adopt its own emission standards for new and existing off-road vehicles and engines and by establishing almost identical requirements for EPA review of authorization requests under section 209(e)(2) as it requires for waiver decisions under section 209(b), Congress unmistakably intended that EPA accord similar deference to California's decisions under 209(e)(2).²⁰

3. The Burden of Proof Is on Those Opposed to the Authorization Request

As stated above, under both sections 209(b) and (e)(2), the Administrator must deny a waiver or an authorization if he makes one of the three findings set forth in those sections. In interpreting the language of 209(b), it has been held that the burden of proof to show that there is a basis for making one of the three findings is squarely on the opponents of a waiver. As the appellate court stated in *MEMA I* at 1120-21:

It is not necessary for the Administrator affirmatively to find that these conditions do not exist before granting a waiver. The statute does not say "the Administrator shall grant a waiver only if he makes the negative of these findings. That he must deny a waiver if certain facts exist does not mean that he must independently proceed to make the opposite of those findings before he grants the waiver regardless of the state of the record . . . The language of the statute and its legislative history indicate that California's regulations, and California's determination that they comply with the statute, when presented to the Administrator are presumed to satisfy the waiver requirements and that the burden of proving otherwise is on whoever attacks them. California must present its regulations and findings at the hearing, and thereafter the parties opposing the waiver request bear the burden of persuading the Administrator that the waiver request should be denied.

Given the identical structure and near identical language of sections 209(b) and 209(e)(2), the opponents of an authorization request should bear a similar burden of proof when arguing that authorization should be denied. EPA has so stated in all off-road authorization decisions to date.²¹

¹⁹ 40 Fed.Reg. 23102, 23104 (emphasis added). See also 58 Fed.Reg. 4166, Decision Document, at p. 64.

²⁰ See discussion in *Engine Manufacturers Association v. EPA*, 88 F.3d 1075, 1090 (D.C. Cir. 1996) (*EMA*), wherein the court recognized California's leadership in emission control regulation in both new motor vehicles and new and in-use nonroad engines.

²¹ *OHRV Authorization*, Decision Document, at pp. 16-17; *Utility Authorization*, Decision Document, at p. 14; 60 Fed. Reg. 48981 (September 21, 1995) (*HDOR Authorization*), Decision Document, at p. 13. See

D. The Administrator Must Grant California Authorization for the In-Use Off-Road Regulation's Performance Requirements – Sections 2449 through 2449.3²²

For the reasons set forth below, the Administrator must grant California authorization for the In-Use Off-Road Regulation in that no basis exists under the criteria set forth in CAA section 209(e)(2) for the Administrator to deny California's request.

1. Protectiveness

In adopting the In-Use Off-Road Regulation, the Board approved Resolution 07-19, in which it declared:

BE IT FURTHER RESOLVED that the Board hereby determines, in accordance with CAA section 209(e)(2), that to the extent the regulations approved herein affect nonroad vehicles or nonroad engines as defined in CAA section 216(10) and (11), the emission standards and other requirements related to the control of emissions in the regulations approved herein are, in the aggregate, at least as protective of public health and welfare as applicable federal standards, California needs its nonroad emission standards to meet compelling and extraordinary conditions, and the standards and accompanying enforcement procedures approved herein are consistent with CAA section 209.

also *Waiver of Federal Preemption California Low-Emission Vehicle Standards*, 58 Fed. Reg. 4166 (January 7, 1993) (*LEV Waiver*), Decision Document, at p. 21.

²² Arguably, fleet owners could meet the NOx fleet average and BACT turnover requirements using engines that have been certified to either federal or California emission standards for new off-road engines. As it applies to California-adopted emission standards for certified off-road engines, CARB has either previously obtained authorization from EPA (60 Fed.Reg. 37440 (July 5, 1995)) or has requested confirmation from the Administrator that the emission standards are within the scope of the previously granted authorizations or should be similarly treated under a new administrative construct since the California standards harmonize and align with federal emission standards (See request from CARB Executive Officer James Goldstene to Administrator Stephen L Johnson, dated July XX, 2008). Notwithstanding, California is requesting a new authorization here, recognizing that full compliance with the in-use emission standards of the In-Use Regulation requires fleet owners to comply concurrently with the PM fleet average and BACT requirements, which principally require the use of VDECS for compliance. These retrofit requirements are not presently covered by an existing authorization. In taking this position, CARB, however, does not waive any future arguments that compliance with in-use requirements of the regulations arguably fall within the scope of previously granted authorizations. Moreover, under existing EPA SIP approvals, it could be argued that fleet average requirements that fleet average requirements are not emission standards covered by the section 209(e) preemptions. (See 66 Fed.Reg. 16432, 16433 (March 26, 2004). Again, because compliance for some fleet owners is dependent upon being able to meet BACT retrofit emission standards for PM, CARB is requesting a new authorization for this rulemaking.

No basis exists for the Administrator to find that the Board's determination is arbitrary and capricious. Under the legislative scheme of CAA, EPA's authority to adopt emission standards and other requirements related to the control of emissions of nonroad engines is limited to new engines, vehicles, and equipment.²³ Indeed, California is the only governmental jurisdiction in the nation entrusted with authority to adopt emission standards and other emission-related requirements for in-use nonroad engines.²⁴ As a result, EPA has not adopted any standards or requirements for in-use off-road engines. Thus, no question exists that the In-Use Regulation is at least as protective of public health and welfare as applicable federal standards.²⁵ CARB envisions that off-road fleets will comply with the fleet average and BACT requirements by modernizing the fleets through purchasing newer vehicles and engines that meet federal certification standards for new nonroad engines and installing aftermarket retrofit VDECS that will achieve emission reductions equal to or greater than the reductions that can be achieved under federal emission standards.

2. The Requirements Are Necessary to Meet Compelling and Extraordinary Circumstances

In Resolution 07-19, the Board reaffirmed its longstanding position that California continues to need its own off-road engine and vehicle program to meet serious air pollution problems confronting the State. The Administrator has previously and consistently recognized California's needs when granting waivers for motor vehicles under CAA section 209(b) and authorizations for California's nonroad regulations under section 209(e)(2).

The relevant inquiry under CAA section 209(e)(2)(A)(ii) is whether California needs its own emission control program to meet compelling and extraordinary conditions, not whether any given standard is necessary to meet such conditions.²⁶ In approving waivers under section 209(b), the Administrator has determined that:

“[C]ompelling and extraordinary conditions” does not refer to levels of pollution directly, but primarily to the factors that tend to produce them: geographical and climatic conditions that, when combined with large

²³ CAA section 213 provides in relevant part:

“If the Administrator makes an affirmative determination under paragraph (2) the Administrator shall, within 12 months after completion of the study under paragraph (1), promulgate and from time to time revise regulations containing standards applicable to emissions from those classes or categories of new nonroad engines and new nonroad vehicles....” (Emphasis added.)

Once California receives authorization from EPA to enforce the state's adopted emission standards and other requirements related to the control of emissions, other states may opt to adopt standards and requirements identical to those adopted by CARB. (CAA section 209(e)(2)(B).)

²⁴ See *EMA v. EPA*, 88 F.3d at 1089-1090.

²⁵ *Id.*, at 1089.

²⁶ 49 Fed. Reg. 18887, 18892 (May 3, 1984.)

numbers and high concentrations of automobiles, create serious air pollution problems.²⁷

California and particularly the South Coast and San Joaquin Valley Air Basins continue to experience some of the worst air quality in the nation.²⁸ The unique geographical and climatic conditions, and the tremendous growth in vehicle population and use that moved Congress to authorize California to establish separate vehicle standards in 1967, still exist today.²⁹

In the California Clean Air Act of 1988, the California Legislature found that:

[D]espite the significant reductions in vehicle emissions which have been achieved in recent years, continued growth in population and vehicle miles traveled throughout California have the potential not only to prevent attainment of the state standards, but in some cases, to result in worsening of air quality.³⁰

In response to the undisputed severe air quality problems in California, the California Legislature authorized CARB to consider adopting, *inter alia*, standards and regulations for off-road engines and to achieve emission reductions from in-use performance.³¹ Given the serious air pollution problems California faces and the resultant need to achieve the maximum reductions in emissions, the California Legislature and CARB believe it is necessary to develop emission controls for off-road sources as well as for onroad motor vehicles and for in-use sources as well as new sources.³² CARB continues to find such previously uncontrolled off-road engines to be significant emission sources for which controls are necessary to meet federal and state air quality standards.³³

By adding federal and state authority to regulate off-road engines, Congress and California's Legislature, respectively, acknowledged the increasing importance of reducing emissions from all mobile sources, including off-road vehicles. The Administrator has repeatedly agreed with CARB that California's continuing extraordinary conditions justify separate California nonroad programs.³⁴ Nothing in

²⁷ *Id.*

²⁸ See e.g. *Approval and Promulgation of State Implementation Plans; California – South Coast*, 64 Fed.Reg.1770, 1771 (January 12, 1999); See also SIP Transmittal Letter and attached documents from CARB Executive Officer James Goldstene to Wayne Nastri, Regional Administrator of Region 9, copies of which are attached.

²⁹ See *California State Motor Vehicle Pollution Control Standards; Waiver of Federal Preemption – Notice of Decision*, 68 Fed.Reg.19811,19812 (April 22, 2003).

³⁰ California Health and Safety Code section 43000.5.

³¹ California Health and Safety Code sections 43005.5, 43013, and 43018.

³² *Id.*, see also Resolution 07-19.

³³ Resolution 07-19. See also Staff Report at Chapter II.

³⁴ *Utility Authorization*, Decision Document, at p. 33; *OHRV Authorization*, Decision Document, at pp. 27-29; and *HDOR Authorization*, Decision Document, at pp. 16-18.

these conditions has changed to warrant a change in this determination. Accordingly, for all the aforementioned reasons, there can be no doubt of the continuing existence of compelling and extraordinary conditions justifying California's need for its own nonroad vehicle and engine emissions control program.

3. The In-Use Off-Road Regulation is Consistent with CAA Section 209

As stated above, the third criterion of section 209(e)(2) requires consistency with the several subsections of section 209; that is the Administrator must consider not only consistency with section 202(a) – as required under section 209(b)(1)(C) – but also other subsections of section 209.³⁵ In its *209(e) Final Rule*, EPA interpreted this provision to require that California's standards and accompanying enforcement provisions must also be consistent with sections 209(a) and 209(e)(1).³⁶

a. Consistent with CAA Section 209(a)

The In-Use Off-Road Regulation is consistent with section 209(a). That section preempts all states and political subdivisions from adopting or attempting to enforce any standard relating to the control of emissions from new motor vehicles or new motor vehicle engines. By definition, vehicles covered by the In-Use Off-Road Regulation are not preempted under section 209(a) in that they are not a new motor vehicles or new motor vehicle engines. Except for workover rigs, vehicles covered by the In-Use Regulation are off-road vehicles. Although workover rigs are self-propelled vehicles designed for transporting person or property on a street or highway,³⁷ they too are not subject to the preemption in that they are not new.

b. Consistent with CAA Section 209(e)(1)

The In-Use Off-Road Regulation is also not inconsistent with section 209(e)(1). That section establishes federal preemption prohibiting states and local subdivisions from adopting or enforcing any standard or other requirement relating to the control of emissions of new engines used in farm and construction equipment that are smaller than 175 hp or engines used in new locomotives. The regulation specifically does not apply to locomotives. It further does not apply to new farm and construction equipment with engines less than 175 hp. Implements of husbandry, regardless of engine size, are expressly excluded from coverage. While off-road construction vehicles and engines used in such vehicles are covered by the regulation, the regulation does not apply to new construction vehicles or engines.

³⁵ *Air Pollution Control; Preemption of State Regulation for Nonroad Engine and Vehicle Standards* (“Section 209(e) Rule”), 59 Fed.Reg. 36969, 36983 (July 20, 1994).

³⁶ *Id.*

³⁷ CAA section 216(2).

In the Final § 209(e) rule, EPA defined “new” as it applies to nonroad engines other than engines used in locomotives as:

A domestic or imported nonroad vehicle or nonroad engine the equitable or legal title to which has never been transferred to an ultimate purchaser. Where the equitable or legal title to an engine or vehicle is not transferred to an ultimate purchaser until after the engine or vehicle is placed into service, then the engine or vehicle will no longer be new after it is placed into service. A nonroad engine or vehicle is placed into service when it is used for its functional purposes. The term ultimate purchaser means, with respect to any new nonroad vehicle or new nonroad engine, the first person who in good faith purchases such new nonroad vehicle or new nonroad engine for purposes other than resale.³⁸

In *Engine Manufacturers Association v. EPA (EMA)*, (D.C. Cir. 1996) 88 F.3d 1075, 1082-1086, the Court of Appeals affirmed EPA’s definition of “new” as it is applied to off-road sources other than locomotives. In *EMA*, the Court discussed the issue of whether EPA’s definition of new nonroad engines would effectively undermine the section 209(e)(1) preemption that states are prohibited from adopting emission standards for new farm and construction vehicles with engines under 175 hp. In concluding that it would not, the Court deferred to EPA’s application of the district court’s decision in *Allway Taxi, Inc. v. City of New York (Allway Taxi)*,³⁹ in which the district court interpreted CAA section 209(a) preemption of new on-road motor vehicles. There the court determined that although states were preempted from regulating new motor vehicles the moment after they were purchased – even though the preemption was limited to showroom-new motor vehicles⁴⁰ – they could regulate such vehicles after the passage of a reasonable period of time.⁴¹

The off-road regulation at issue here does not attempt to immediately regulate new construction sources covered by the CAA section 209(e)(1) preemption. Indeed the regulation exempts any vehicle from the PM retrofit requirement that is less than five years old and from the NOx replacement requirements that is less than 10 years old. To the extent that a fleet owner elects to comply with the fleet average or BACT requirements by purchasing or repowering a vehicle used in construction with a new nonroad engine under 175 hp, that engine is required to be certified to the federal nonroad emission standards.⁴² The In-Use Off-Road regulation, itself, does not establish emission standards for such new engines.

³⁸ See Air Pollution Control; Preemption of State Regulation for Nonroad Engine and Vehicle Standards (Final § 209(e) Rule, 59 Fed.Reg. 36969 (July 20, 2004), 40 CFR Part 85, § 85.1602.

³⁹ *Allway Taxi, Inc. v. City of New York (Allway Taxi)* (S.D.N.Y.) 340 F. Supp. 1120, aff’d (2d Cir. 1972) 468.

⁴⁰ *Id.*, at 1124; *EMA*, supra, 88 F.3d at 1082.

⁴¹ *Allway Taxi*, supra, 340 F.Supp. at 1124 [at time of resale or re-registration of the vehicle]

⁴² CARB’s regulations establishing new emission standards for engines 175 hp and lower, specifically do not cover engines that are primarily used in farm and construction vehicles and equipment.

c. Consistent with CAA Section 209(b)(1)(C)

CAA section 209(b)(1)(C) provides that no waiver shall be granted if the Administrator were to find that the state standards and accompanying enforcement procedures are not consistent with section 202(a) of the CAA. EPA has historically interpreted consistency with section 202(a) using a two-prong test: (1) that there is sufficient lead time to permit the development of technology necessary to meet the standards and other requirements, giving appropriate consideration to the cost of compliance in the time frame provided and (2) that the California and federal test procedures are sufficiently compatible to permit manufacturers to meet both the state and federal test requirements with one test vehicle or engine.⁴³

i. Technical Feasibility

As indicated, the Administrator must grant California's authorization request unless he finds that adopted regulation does not provide sufficient lead time to permit the development of technology necessary to meet the standards and other requirements, giving appropriate consideration to the cost of compliance. The reference to "cost of compliance" in CAA section 202(a) refers to the economic costs of motor vehicle emission standards and accompanying enforcement procedures and the timing of a particular emission control regulation rather than to its social implications.⁴⁴ In the context of in-use regulations, the crux of the analysis is whether sufficient lead time exists for development and availability of the technology by manufacturers that would allow fleet operators to comply with the regulation. A key element in considering the costs of compliance is whether the costs incurred in the first instance can be passed on by engine and VDECS manufacturers to fleet operators, and whether such costs can then be passed on from the fleet operators to their customers. EPA and CARB have previously determined that manufacturers of new off-road engines will be able to comply within the time provided for compliance respectively under 40 CFR parts 89 and 1039 and title 13, CCR, section 2423, giving appropriate consideration to cost.⁴⁵ The analysis regarding cost of compliance that is applied in the context of these in-use regulations should be similar followed for new engine regulations – that is, the costs passed on by manufacturers to fleet owners are very much the same costs that fleet owners subsequently pass onto their customers. In that regard, CARB has determined that fleet owners will largely be able to pass on their compliance costs to their

⁴³ See 61 Fed.Reg. 53371, 53372 (October 11, 1996); Decision Document at p.2 (*OBD II Waiver Decision*).

⁴⁴ *Id.*, referencing See S. Rep. No. 192, 89th Cong., 1st Sess. 5-8 (1965); H.R. Rep. No. 728, 90th Cong., 1st Sess. 23 (1967), U.S. Code Cong. & Admin. News 1967, p. 1938.

⁴⁵ See 63 Fed.Reg. 56968 (October 23, 1998) and 69 Fed.Reg. 38958 (June 29, 2004); see also title 13 CCR section 2423 and Initial Statement of Reasons: Staff Reports issued on December 10, 1999 and October 22, 2004, both of which documents have been submitted to EPA as part of CARB's authorization request for off-road compression-ignition emission standards for new Tier 2 through Tier 4 engines and which are incorporated by reference herein.

customers without incurring significant economic disruption.⁴⁶ Additionally it bears repeating that the Administrator has long deferred to California's policy judgments, including judgments on costs: "The issue of whether a proposed California requirement is likely to result in only marginal improvement in air quality not commensurate with its cost or is otherwise an arguably unwise exercise of regulatory power is not legally pertinent to my decision under section 209. . . ."⁴⁷ Accordingly, for the reasons outlined below, the regulations are feasible within the time provided for compliance, giving appropriate consideration of costs.

a) Technical Feasibility of Fleet Average Requirements

Under title 13, CCR, section 2449.1 and 2449.2, large and medium fleets must respectively comply with annual NOx and PM fleet average targets or, alternatively, meet the annual NOx and PM BACT requirements for specified percentages of the fleet. Small fleets need only meet the PM fleet average or alternatively the PM BACT requirements. The in-use performance requirements require fleets to reduce NOx and PM emissions beyond what they would achieve by replacing older vehicles through normal retirement with newer, cleaner vehicles (natural turnover). To meet the fleet average targets, a fleet may comply by using a variety of different strategies, including, replacing the engines in existing vehicles with cleaner engines, purchasing newer vehicles with cleaner engines to replace older, higher emitting vehicles, retiring vehicles from service, without replacement, designating vehicles as low-use,⁴⁸ or retrofitting engines with VDECS. In general, if electing to comply by meeting the NOx and PM fleet average requirement, fleet owners will modernize their fleets by undertaking a combination of actions, including, replacement and repowering of vehicles with newer, cleaner vehicles and engines that meet federal and California certified Tier 1 through Tier 4 emission standards and installation of VDECS.

The fleet average targets have been set so that they progressively become more stringent over the years to ensure that fleets modernize to achieve the emission reductions necessary for California to meet federal NAAQS for NOx and PM and to meet the 2020 goal set forth in the 2000 Diesel Risk Reduction Plan for diesel PM emission reductions. Meeting the later target would reduce diesel PM from all diesel sources by 85 percent from the 2000 baseline and would prevent thousands of premature deaths and medical infirmities. Staff recognizes that meeting the fleet average targets will not come without expense, but compliance is technologically feasible. The targets become increasingly more stringent with each passing year, but

⁴⁶ See Staff Report at section VII.C., Technical Support Document at section IX.f) and g), and Final Statement of Reasons at section 3. All of the aforementioned documents are attached hereto and incorporated by reference.

⁴⁷ 36 Fed.Reg. 17158 (August 31, 1971). See also 40 Fed.Reg. 23102, 23104; 58 Fed.Reg. 4166 (January 7, 1993), Decision Document, at p. 20 ["Since a balancing of these . . . costs against the potential benefits from reduced emissions is a central policy decision [of CARB in adopting the regulation] I believe I am required to give very substantial deference to California's judgments on this score."].

⁴⁸ See page 7, *supra*.

they are not so stringent that compliance is not possible because of unavailability of highest tiered engines. In the early years modernization will require fleets to replace some, and later all, Tier 0 engines through vehicle replacement or repower, but fleets will be able to meet the fleet average targets by replacing those vehicles and engines with a combination of Tier 1 through Tier 3 engines. It is not until 2020 for large and medium fleets and 2025 for small fleets that a fleet owner is required to replace vehicles and engines with only Tier 3 and Tier 4 engines.⁴⁹ By 2020, Tier 3 engines will have been available for at least 10 years, Interim Tier 4 engines for at least six years, and Tier 4 engines for more than five years.⁵⁰ Additionally, the regulation provides relief to fleets if there is a delay in availability of vehicles that would be required to use Tier 3 or Tier 4 interim or final Tier 4 emission standards.⁵¹

It is anticipated that large and medium fleet owners with high natural turnover of vehicles will be able to meet the NOx fleet averages through replacement and repowering of vehicles. To meet the PM fleet average requirements, fleets will install VDECS that have been verified by CARB, to date, with more are expected to be verified and available within the timeframe for compliance. As set forth in section VIII.B. of the attached Technical Support Document, the hardware retrofit technologies that are most likely to be employed are diesel particulate filters (DPFs) and flow-through filters (FTFs). The In-Use Regulation provides a guaranteed demand for retrofits, and CARB anticipates that the number of products submitted for verification will increase now that the regulation has been adopted and become effective. As shown in the Tables III-A-2)a)i)-1 and -2 below, there are currently six verified Level 2 and Level 3 diesel emission control systems for use in off-road vehicles.

⁴⁹ Title 13 CCR section 2449(d)(7)(C).

⁵⁰ See title 13 CCR section 2423 and 40 CFR part 89, subpart B, and 40 CFR part 1039, subpart B.

⁵¹ Title 13 CCR section 2449(e)(9).

Table III-A-2)a)i)-1 - Verified Level 2 DECS (as of April 6, 2007)

Product Name	Technology Type	PM Reduction	Applicability
Engine Control System AZ Purimuffler/Purifier	DOC + Alt Fuel	50%	1996-2002 off-road; PuriNOx

III-A-2)a)i)-2 - Verified Level 3 DECS (as of April 6, 2007)

Product Name	Technology Type	PM Reduction	Applicability
Cleaire Horizon	DPF	85%	Most on-road engines; 15 ppm sulfur diesel; CARB diesel, conditionally verified for off-road engines
HUSS Umwelttechnik FS_MK	DPF	85%	Most on-road and off-road diesel engines through 2007 model year.
Engine Control System Combifilter	DPF	85%	1996-2004 off-road; 15 ppm sulfur diesel; CARB diesel.
Caterpillar	DPF	85%	Conditionally verified for 1996-2008 model years; off-road, rubber tired; CARB diesel.
DCL International Inc.	DPF	85%	Conditionally verified for 1996-2008 model year, rubber tired off-road; CARB diesel.

Three of these systems DCL's MINE-X Sootfilter, Caterpillar DPF, and Cleaire Horizon - have been verified within the past year.

The regulation only requires the installation of the highest level of VDECS available – i.e., those that have been verified as proven, effective, and durable and warranted against failure and defect. By definition, highest level VDECS means verified for use “for a specific engine at least 10 months prior to the compliance date, which (1) can be used without impairing the safe operation of the vehicle as demonstrated per title 13, CCR, section 2449(e)(8), and (2) the diesel emission-control strategy manufacturer and authorized diesel emission-control strategy dealer agree can be used on a specific engine and vehicle combination without jeopardizing the original engine warranty in effect at the time of application.”⁵² If a vehicle cannot be retrofitted with a VDECS either

⁵² Title 13 CCR section 2449(c)(27).

because of unavailability or cannot be installed or operated safely, the regulation exempts that vehicle from the retrofit requirements.⁵³

In addition to the small fleet exemption from the NOx requirements, the low-use vehicle exemption, the compliance extension provided for unavailability of Tier 3 and Tier 4 engines, and the relief provided when a highest level VDECS is unavailable, all of which have been referenced above, the regulation contains various other exemptions, compliance extensions, and credits that provide fleet owners with flexibility in meeting fleet average as well as BACT requirements. For example, fleets do not need to include vehicles used solely in emergency and agricultural operations, as well as dedicated snow removal vehicles, in calculating NOx and PM fleet average and BACT reductions. Fleets may also accrue early action credits or credits for using electric vehicles or other alternative fuel vehicles in place of diesel vehicles.

b) Technical Feasibility of the NOx BACT Requirements

As stated, fleet owners must meet the NOx BACT requirement in any year that they are unable, or choose not, to meet the NOx fleet average targets.⁵⁴ Between March 1, 2010 (for large fleets and March 1, 2013 for medium fleets) and March 1, 2015, a fleet electing to comply with the BACT option for any year must turnover eight percent of its fleet. After March 1, 2015, it must turnover 10 percent of its fleet per year. Similar to meeting the NOx fleet average requirements, NOx BACT turnover requires that the fleet modernize by retiring vehicles, designating vehicles as a low-use, repowering vehicles, rebuilding engines to a more stringent emissions configuration, or applying VDECS verified to achieve NOx reductions. But, if repowering a vehicle or rebuilding the engine to a more stringent emissions configuration, BACT compliance requires that the new or reconfigured engine be Tier 2 or higher and a higher tier than the engine that was replaced or rebuilt.

The NOx BACT requirement, like the NOx fleet average option, is technologically feasible. Depending on the engine's horsepower (kilowatt) ratings, Tier 2 engines have been available since at least 2004, with some available as early as 2001.⁵⁵ Certified Tier 3 engines have been available for engines 175 hp and greater since 2006 and since 2008 for smaller horsepower engines. As stated, it is not until 2020 that large and medium fleets are required to use Tier 3 and 4 engines and not until 2025 for small fleets.⁵⁶ In 2020, Tier 4 engines will have been available in the marketplace for more than five years.

⁵³ Technically, this exemption does not help the fleet in meeting the fleet average requirements but will assist the fleet in meeting the PM BACT requirements if the fleet must achieve compliance through the alternative path.

⁵⁴ Title 13 CCR section 2449.1(a)(2).

⁵⁵ See title 13 CCR section 2423 and 40 CFR part 89, subpart B.

⁵⁶ See discussion at page 22, *supra*.

c) Technical Feasibility of the PM BACT Requirements

Fleet owners must meet the PM BACT requirement in any year that they are unable, or choose not, to meet the PM fleet average targets.⁵⁷ To meet the PM BACT requirement, a fleet must retrofit 20 percent of its total maximum power (not including specialty vehicles retrofitted and exempted from turnover in section 2449.1(a)(2)(A)4.b.) with the highest level of PM VDECS since March 1 of the previous year. For the reasons discussed above in section III.D.3.c.i.a), the PM BACT requirements are technologically feasible.

d) Technical Feasibility of the SOON Requirements

As stated, the In-Use Regulation includes a program designed to achieve additional NOx emission reductions called the SOON program.⁵⁸ Local air districts may opt into this program to reduce NOx emissions beyond what is required by the statewide NOx provisions of the off-road regulation.⁵⁹ Under the program, local air districts that opt into the program may require the largest fleets that operate vehicles in the district to apply for incentive funding to finance additional actions to reduce NOx emissions beyond what is called for in section 2449.1. If they do not receive funding, the fleets would not be required to achieve supplemental NOx reductions.

Fleets that are required to participate in the SOON program or that choose to do so must submit the same vehicle information to the district that is required under the statewide performance requirements of sections 2449 through 2449.2. In addition to the required vehicle reporting, each fleet must calculate and report the NOx index and SOON NOx target rate for the vehicles that operate in the opt-in local air district. The SOON NOx target rates are more stringent than the targets set forth in the statewide NOx performance requirements under section 2449.2.⁶⁰ Nonetheless, the technology for compliance is the same.⁶¹ The only significant difference in compliance with the statewide NOx fleet target average and the SOON NOx target is that more vehicles would have to be modernized on an accelerated schedule. Compliance would be by the same means: largely, vehicle replacement and engine repower. Although the costs of compliance are theoretically higher – having to modernize more vehicles in a shorter period of time – the costs are offset in that a district can only require the fleet to take additional action if the district is willing to fund most, if not all, of the costs of modernization. Accordingly, the SOON program requirements are technologically feasible.

⁵⁷ Title 13 CCR section 2449.2(a)(2).

⁵⁸ Title 13 CCR section 2449.3.

⁵⁹ Title 13 CCR section 2449.1.

⁶⁰ Compare SOON NOx target rate at p. 12 to the statewide NOx target rate at p. 5, *supra*.

⁶¹ See discussion at section III.D.3.c.i.a, *supra*.

ii. Compatible Test Procedures

The In-Use Regulation raises no issue regarding incompatibility of California and federal test procedures. There is no requirement on engine manufacturers or fleet owners to certify engines beyond federal and state certification testing for new engines.⁶² Additionally there are no conflicts federal and California test procedures for verification testing for diesel emission control strategies in that there is no comparable mandatory federal program. Even if there were such a federal program, the In-Use Off-Road regulation does not require fleet owners to conduct any independent verification testing, which is required only by retrofit manufacturers seeking verification of their products.

E. The Administrator Must Grant California Authorization for Its Associated Enforcement Requirements

The In-Use Off-Road Regulation includes several associated enforcement requirements requiring fleet owners to file reports, maintain records, and label vehicles that are covered by the program. First, there is no basis for the Administrator to deny authorization in that the requirements only strengthen the in-use performance standards of the regulation and thereby do not undermine CARB protectiveness determination for the regulation as a whole. Second, the associated enforcement requirements do not affect the technological feasibility of the regulations or require the use of incompatible test procedures.

IV. Conclusion

Based on the foregoing, CARB respectfully requests that the Administrator grant California's request for waiver and authorization actions pursuant to CAA section 209. To assist you in reviewing the regulation, CARB is enclosing the following documents that it is incorporating into the record of this waiver proceeding.

1. Notice of Public Hearing to Consider the Adoption of a Proposed Regulation for In-Use Off-Road Diesel Vehicles, issued April 6, 2007.
2. Staff Report: Initial Statement of Reasons for Proposed Rulemaking, with Appendices, issued April 6, 2007.
3. Technical Support Document, issued April 6, 2007
4. Resolution 07-19, dated July 26, 2007.
5. First Notice of Availability of Modified Text, issued December 10, 2007.
6. Second Notice of Availability of Modified Text, issued March 6, 2008.

⁶² See 49 CFR parts 89 and 1039 and title 13, CCR, section 2400 through 2427.

7. Third Notice of Availability of Modified Text, issued March 20, 2008.
6. Executive Order R-08-002, dated April 4, 2008.
7. Final Statement of Reasons for Rulemaking Including Summary of Comments and Agency Response.
8. Final Regulation Order for title 13, California Code of Regulations, section 2479.
9. ARB November 16, 2007 Submittal of adopted State Strategy for California's 2007 State Implementation Plan to EPA, November 16, 2007.

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