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INTRODUCTION

When it established the Clean Air Act in 1970, Congress determined “that air pollution prevention or elimination, through any measures, of the amount of pollutants produced or created at the source) and air pollution control at its source is the primary responsibility of States and local governments.” Section 101 of the CAA, 42 U.S.C. 7401. Congress attempted to balance this overall principle with the need of the automobile industry to avoid dozens of potentially conflicting requirements for motor vehicles by providing a general prohibition against State regulation of vehicle emissions (except California). See Section 209 of the CAA, 42 U.S.C. 7543. However, Congress also provided that States that have non-attainment areas may adopt and enforce California vehicle emission standards. See, Section 177 of the CAA, 42 U.S.C. 7507.

Most Americans currently live in areas that have unhealthy air. According to EPA, 159 million people in this country live in areas that exceed the National Ambient Air Quality Standard (“NAAQS”) for ground level ozone. Furthermore, EPA analysis shows that 28 million people live in areas that face a significant risk of exceeding the PM₁₀ NAAQS without significant emission reductions between 2007 and 2030. The adverse health effects of these pollutants include premature mortality, aggravation of respiratory and cardiovascular disease (as indicated by increased hospital admissions and emergency room visits, school absences, work loss days, and restricted activity days), changes in lung function and increased respiratory symptoms, changes to lung tissues and structures, altered respiratory defense mechanisms, chronic bronchitis, and decreased lung function.

Ozone also causes crop and forestry losses, and PM causes damage to materials and soiling of commonly used building materials and culturally important items such as statues and works of art. NO_x, SO₂ and PM contribute to substantial visibility impairment in many parts of the U.S. NO_x emissions also contribute to the acidification, nitrification and eutrophication of water bodies, while SO₂ emissions contribute to acid rain that denudes forests and renders streams and lakes in the Eastern United States unable to support aquatic life.

Federal, State, and local governments are working to bring ozone and particulate levels into compliance with the NAAQS through State Implementation Plan (SIP) attainment and maintenance plans, and to ensure that future air quality reaches and continues to achieve these health-based standards. However, in many instances regulation of stationary sources cannot, by itself, achieve the necessary improvements in air quality.

Emissions from heavy-duty vehicles contribute to the health and welfare effects of ozone, PM, NO_x, SO₂, and volatile organic compounds (VOCs). Both NO_x and VOCs contribute to the formation of ground level ozone, while PM, NO_x, SO₂ and VOCs contribute to fine PM levels. In particular, HDE emissions account for substantial portions of the country's ambient PM and NO_x concentrations. EPA has estimated that by 2007, heavy-duty vehicles will account for 28 percent of mobile source NO_x emissions

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and 20 percent of mobile source PM emissions. These proportions are even higher in some urban areas, such as in Sacramento, Atlanta, and Washington, DC, where HDVs contribute over 34 percent of the mobile source NO_x emissions, and in Santa Fe, Los Angeles, and Hartford, where heavy-duty vehicle PM emissions account for 38, 25 and 30 percent of the mobile source PM emissions inventory, respectively. Given the growth in vehicles and vehicle miles traveled that is anticipated in the future, these impacts will increase absent further controls.

In addition to its contribution to PM inventories, diesel exhaust PM is of special concern because it has been implicated in an increased risk of lung cancer and respiratory disease. The EPA draft Health Assessment Document for Diesel Exhaust (Draft Assessment) was reviewed in public session by the Clean Air Scientific Advisory Committee (CASAC) on October 12-13, 2000. EPA (2000) Review of EPA's Health Assessment Document for Diesel Exhaust (EPA 600/8-90/057E). Review by the Clean Air Scientific Advisory Committee (CASAC) December 2000. EPA-SAB-CASAC-01-003 The Agency has concluded, and the CASAC agreed that diesel exhaust is likely to be carcinogenic to humans.

State and local governments, in their efforts to protect the health of their citizens and comply with requirements of the CAA, have recognized the need to achieve major reductions in diesel PM emissions, and have been seeking Federal action in setting stringent new standards to bring this about¹.

Over time, EPA regulations have taken NO_x emissions from heavy duty diesel engines from uncontrolled levels of approximately 13 g/bhp-hr² to 6 g/bhp-hr (model year ("MY")³ 1990); then to 5g/bhp-hr (MY1991); 4 g/bhp-hr (MY 1998) and finally to 2.5 g/bhp-hr (MY 2004). Allowable PM levels have similarly been reduced in an incremental manner from 0.60 g/bhp-hr (MY1990) to 0.25 g/bhp-hr (MY 1991) and finally to 0.10g/bhp-hr (MY 1994).

The Federal 2007 Rule

On January 18, 2001, EPA promulgated a comprehensive set of rules affecting heavy duty vehicle emissions commencing in MY 2007 ("the Federal 2007 rule"). This rule is the first time that heavy duty trucks will be required to employ after treatment devices similar to catalytic converters employed on passenger cars for the past 25 years.

¹ For example, see letter dated July 13, 1999 from John Elston and Richard Baldwin on behalf of STAPPA/ALAPCO (docket A99-06, item II-D-78).

² Emission standards are set in grams per brake horsepower hour (gm/bhp-hr). By way of example, an engine operating at 250 horsepower of load for one hour would emit 1000grams of NO_x under a 4 gm/bHP-hr standard, but only 50 grams of NO_x under a 0.2 gm/bHP-hr standard.

³ Manufacturers have some latitude to start a model year earlier than January of a given year. Model year 2007 may start as early as January 1, 2006.

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The Federal 2007 rule established a NO_x emission standard of 0.2 g/bhp-hr. This standard will be phased in – 50 per cent of the new engines sold in MY 2007 -2009 would meet the new limit; with full compliance required commencing in MY 2010. When fully implemented this new rule will require an overall emission reduction of 98.5% from uncontrolled highway cruise levels, and an emission level that is 90 per cent below the current standard. The Federal 2007 rule also establishes new lower limit on emissions of non-methane hydrocarbons (“NMHC”) of 0.14 g/bhp-hr, phased in the same manner as the NO_x limits. The new rule would further reduce allowable PM emissions to 0.01 g/bhp-hr, to take full effect for diesels in the 2007 model year. Under the Federal 2007 rule heavy duty gasoline engines will be subject to the same standards based on a phase-in requiring 50 percent compliance in MY 2008 and full compliance in MY 2009.

The technologies needed to meet these more stringent standards for diesel engines, are very sensitive to sulfur in the fuel. For this reason the Federal 2007 rule required that low sulfur diesel be generally available by late 2006. Sulfur in diesel fuel for on-road use is currently limited to 500 parts-per-million by weight (“ppm”); the new rule will reduce this limit to 15 ppm sulfur, a 97 percent reduction. All MY 2007 and later diesel-fueled vehicles must be refueled with this new low sulfur diesel fuel. This rule will also enable cleaner diesel passenger vehicles and light-duty trucks. The availability of low sulfur diesel fuel enables the use of similar after-treatment devices in those vehicles in order to meet EPA’s Tier 2 emissions standards for light-duty highway vehicles (65 FR 6698, February 10, 2000). Low sulfur diesel will also reduce emissions and maintenance costs in the existing fleet of highway diesel vehicles. These benefits will include reduced sulfate, PM and sulfur oxides emissions, reduced engine wear and less frequent oil changes, and longer-lasting exhaust gas recirculation (EGR) components on engines equipped with EGR. Heavy-duty gasoline vehicles will also be expected to have much lower emissions due to the transfer of recent technology developments for light-duty applications, and the recent action taken to reduce sulfur in gasoline as part of the EPA Tier 2 rule.

The Federal 2007 rule adopts new evaporative emissions standards for heavy-duty engines and vehicles, effective on the same schedule as the gasoline engine and vehicle exhaust emission standards. The new standards for 8500 to 14,000 pound vehicles are 1.4 and 1.75 grams per test for the 3-day diurnal and supplemental 2-day diurnal tests, respectively. A standard of 1.9 and 2.3 grams per test, respectively, will apply for vehicles over 14,000 pounds. These standards represent more than a 50 percent reduction in the numerical standards as they exist today.

The Federal 2007 rule includes a combination of flexibilities available to refiners to ensure a smooth transition to low sulfur highway diesel fuel. Refiners can take advantage of a temporary compliance option, including an averaging, banking and trading component, beginning in June 2006 and lasting through 2009, with credit given for early compliance before June 2006. Under this temporary compliance option, up to 20 percent of highway diesel fuel may continue to be produced at the existing 500 ppm sulfur maximum standard. Highway diesel fuel marketed as complying with the 500 ppm sulfur standard must be segregated from 15 ppm fuel in the distribution system, and may

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only be used in pre-2007 model year heavy-duty vehicles. The rule also provides hardship provisions for small refiners who cannot immediately afford to invest in the needed technologies and additional relief for refiners subject to the Geographic Phase-in Area (“GPA”) provisions of the Tier 2 gasoline sulfur program, which will allow them the option of staggering their gasoline and diesel investments. Finally, the rule includes a general hardship provision for which any refiner may apply on a case-by-case basis under certain conditions. These hardship provisions, coupled with the temporary compliance option, will provide a “safety valve” allowing up to 25 percent of highway diesel fuel produced to remain at 500 ppm for the transitional years to minimize any potential for highway diesel fuel supply problems.

The California Rule

On October 17, 2002, the California Air Resources Board (CARB) approved amendments to the California Code of Regulations (CCR), Title 13, 13, Chapter 1, Article 1.5; and the incorporated “California Exhaust Emission Standards and Test Procedures for 1985 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles” (“the California 2007 rule”) to provide for nearly identical emission standards, test procedures, and other requirements contained in the Federal 2007 Rule. Although the California 2007 rule includes diesel certification test fuel specifications, the California 2007 rule does not contain a requirement for the production and sale of low sulfur diesel fuel in California and does not provide new emissions standards for heavy duty spark-ignited engines. These topics are being considered as part of separate rulemaking actions. In addition to the emission standards and test procedures, other requirements were incorporated from the Federal 2007 rule to harmonize Federal and California requirements for 2007 and subsequent heavy duty diesel engines (“HDDEs”).

Emission Standards

The California 2007 rule includes more stringent emission standards for 2007 and subsequent model year heavy-duty diesel-cycle engines and medium-duty diesel engines. Heavy-duty diesel-cycle engines include diesel-cycle engines fueled with diesel, natural gas, and liquefied petroleum gas. The emission limitations of the California 2007 rule are 0.20 g/bhp-hr for NO_x, 0.14 g/bhp-hr of NMHC, 0.01 g/bhp-hr of PM and 15.5 g/bhp-hr of CO. The adopted optional NO_x and NMHC super ultra low-emission vehicle (SULEV) emission standards will be 83% of the newly adopted heavy-duty diesel engine emissions standards, while the adopted optional PM and CO SULEV emission standards for medium-duty diesel engines will be half of the newly adopted heavy-duty diesel engine emissions standards: 0.17 g/bhp-hr of NO_x, 0.12 g/bhp-hr of NMHC, 0.005 g/bhp-hr of PM, and 7.7 g/bhp-hr of CO.⁴ Additionally, for medium-duty diesel engines, the formaldehyde emission standard will remain at 0.050 g/bhp-hr.

⁴ Optional standards are provided for smaller engines to provide incentives for engine manufacturers to introduce lower emitting engines.

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As with the Federal 2007 rule, the NO_x and NMHC emission standards will be phased-in. The phase-in period for these emission standards will be four years, as follows: 50% for model year 2007 through 2009, and 100% for model year 2010 and subsequent. There is no phase-in of the PM and CO emission standards; therefore, those standards will be fully implemented beginning in the 2007 model year.

The California 2007 rule also incorporates the elimination of the current exception for turbocharged diesel engines from controlling crankcase emissions adopted by the Federal 2007 rule. Due to technological advances in crankcase filtration, crankcase emissions can be filtered and returned to the engine inlet or controlled by venting the crankcase emissions prior to the emission control device.

Similarly, the California 2007 rule provides incentives for early introduction of lower emitting engines. Engines that satisfy the adopted requirements and that are introduced into the marketplace before 2007, will receive credits equal to 1.5 times the number of diesel-cycle engines that are introduced prior to 2007. For example, two early introduction engines will reduce the number of required phased-in engines (2007-2009) by three. Each early engine must meet all requirements applicable to the 2007 model year engines. If the engine complies only with the PM requirements, then the offsets may be used only for 2007 PM credits. Engines that can meet one half of the adopted NO_x emission standard (0.10 g/bhp-hr) earlier than the phase-in period, in addition to all other requirements applicable to the 2007 model year engines, will be classified as “Blue Sky Series” engines. These engines will receive a credit of 2.0 times the number of 2007 model year compliant engines. For example, two “Blue Sky Series” engines will reduce the number of required phased-in engines by four.

Test Procedures

The Federal 2007 Rule adopted supplemental certification test procedures that apply to 2007 and subsequent model year heavy-duty diesel-cycle engines certified to the 2.4 gram per brake horsepower-hour NO_x plus NMHC standard. These test procedures are slightly different compared to those in the 1998 Federal Consent Decrees and California Settlement Agreements, and the 2005 supplemental test procedures adopted by CARB and several States.

The Federal 2007 Final Rule included several changes to the 2004 Final Rule test procedures that will apply to all 2007 and subsequent model year heavy-duty diesel-cycle engines. The amendments adopted in the California rulemaking include identical revisions to the California 2004 Final Rule test procedures.⁵

Due to the lower emission standards adopted, the maximum allowable emission limit (MAEL) test and the three “mystery points” will be removed from the test procedures for engines with a NO_x family emission limit (FEL) less than 1.5 g/bhp-hr.

⁵ The amendments of California’s test procedures on July 25, 2001, included the Federal 2007 test procedure amendments.

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Further, the NO_x Not-to-Exceed (NTE) cap will be increased from 1.25 to 1.5 times the FTP-based standard for engines with a NO_x FEL less than 1.5 g/bhp-hr. The PM NTE cap will be increased from 1.25 to 1.5 times the FTP-based standard. There is no adopted change to the CO and NMHC NTE cap. Note that MAEL test requirements and a NTE cap of 1.25 times the FTP-based standard still apply to engines with a NO_x FEL of 1.5 g/bhp-hr. The increased NTE cap multiplier is intended to allow increased flexibility when using the test to compare the emissions to the newly adopted emission standards.

In addition to the higher NO_x NTE emissions cap for phased-in engines, NO_x and NMHC after treatment devices are allowed warm-up time. When the exhaust temperature at the outlet of the after treatment device is less than 250⁰ C, the NTE NO_x and NMHC caps do not apply. Another change is the elimination of the PM carve-out areas of the NTE control zone.⁶ Due to the expected effectiveness of advanced diesel PM filters, relief from the NTE through the PM carve-out areas is not necessary. However, relief from the NTE test is provided, if necessary, by allowing manufacturers to exclude certain regions of the NTE control zone. This is allowed if the vehicle is not capable of operating at the specific conditions or where operation is minimal.

The California 2007 rule also modified the sampling time for the NTE test to account for after treatment regeneration events.⁷ The sampling time for the NTE test will be at least 30 seconds. If regeneration of the after treatment device occurs during the NTE test, the averaging period will be at least as long as the time between the regeneration events multiplied by the number of complete regeneration events that occur in the sampling period. This revised sampling period will only be allowed for engines that send an electronic signal indicating the start of the regeneration event. In addition, up to three deficiencies from the NTE test may be approved per engine family for the 2010 through 2013 model years.⁸

Due to manufacturer concerns, the requirements will also include amendments to the test procedures adopted in the Federal 2007 rule that improve the precision of emission measurements. There are three general changes to the emission measurement requirements. One change involves the type of PM filters that are used, improvements to the method of weighing PM filters, and requirements for more precise microbalances. Another change allows lower dilution ratios during emission measurements.⁹ The final change adopts a new NO_x calibration procedure that provides more precise and

⁶ The PM carve-out area is the area within the NTE control area where the NTE cap on PM emissions does not apply. Operation in the PM carve-out area does not require compliance with NTE requirements, although all other requirements during operation in that area still apply.

⁷ A regeneration event occurs when the storage media in the after treatment device is cleansed. The event can be triggered naturally with higher exhaust heat and extra fuel, or triggered externally using a heating element.

⁸ Criteria for deficiencies occurring during 2007 through 2009 model years, including phased-in engines, is detailed in the 2007 Final Rule. Deficiencies during this time period are approved on an engine model and/or horsepower rating basis within an engine family. Additionally, deficiencies are applicable for one model year at a time.

⁹ Reduced dilution ratio reduces the amount of dilution air during the emission sampling period. This helps to improve measurement of both gaseous and particulate emissions.

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continuous measurements of low NO_x concentrations. Additional allowances are adopted to provide manufacturers the option of using their current test procedures if they are more convenient or cost-effective in the short term.

Opt-In Provisions of CAA Section 177 – An Overview

Note: bcb will clean up this section (there is a fair amount of repetition in the earlier model rule text) & incorporate anything important from the case law

CAA section 177 (42 U.S.C. §7507) essentially provides an exception to the general rule that only EPA and California can set motor vehicle emissions standards. Section 209 states the general rule. Under section 209(a), States and localities are barred from adopting or attempting to enforce such standards. But EPA may grant a waiver to California motor vehicle emissions standards if those standards are no less protective of public health than the federal regulations. In 1977, Congress added section 177 to allow other States to promulgate standards identical to those issued by California. This is commonly referred to as “opting in.” Congress amended the provision in the 1990 CAA Amendments. No State utilized this important provision until the 1990s.

Due to its importance, section 177 is worth quoting in full:

Notwithstanding section 7543(a) of this title, any State which has plan provisions approved under this part may adopt and enforce for any model year standards relating to control of emissions from new motor vehicles or new motor vehicle engines and take such other actions as are referred to in section 7543(a) of this title respecting such vehicles if—

- (1) such standards are identical to the California standards for which a waiver has been granted for such model year, and
- (2) California and such State adopt such standards at least two years before commencement of such model year (as determined by regulations of the Administrator).

Nothing in this section or in subchapter II of this chapter shall be construed as authorizing any such State to prohibit or limit, directly or indirectly, the manufacture or sale of a new motor vehicle or motor vehicle engine that is certified in California as meeting California standards, or to take any action of any kind to create, or have the effect of creating, a motor vehicle or motor vehicle engine different than a motor vehicle or engine certified in California under California standards (a "third vehicle") or otherwise create such a "third vehicle."

Thus, basic requirements of section 177 are fairly straightforward:

- The opting-in State’s requirements must be “identical” to the California requirements for which EPA has granted a waiver.

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- California and the opting-in State must adopt the requirements “at least two years before commencement of such model year.”
- The opting-in State cannot, directly or indirectly, take any action having the effect of creating a motor vehicle or engine different than that certified in California under the California requirements. Note that this prohibition on forcing the creation of a “third vehicle” is similar to the so-called “identity” mandate found in the first bullet because a third vehicle would not be identical to those certified in California.

Note: bcb to summarize judicial decisions interpreting section 177 of the CAA to the extent those decisions are relevant to issues pertaining to the model rule.

bcb to summarize the 1998 Consent Decrees, the California rulemaking adopting NTE for MY 05 & 06 and the Stappa/Alalpcó Model rule

On its face, section 177 does not require that the approved Part D SIP provisions be for ozone or any other particular pollutant. As long as EPA has approved Part D plan provisions for at least one criteria pollutant for any part of the State, that State is free to opt in to any California motor vehicle requirements. For example, even if in the late 1970s EPA approved a SIP submission for a single particulate matter nonattainment area in a State, that State could be eligible to adopt California’s motor vehicle requirements under section 177. **bcb will check informally with EPA OGC on this claim from the earlier model rule & see what (if anything) has been written over the years** On April 15, 2004, EPA designated areas in 32 states as “nonattainment” for ozone under the 8-hour ozone standard. Each of these states is required to submit an attainment plan under Part D of Title I of the CAA, and would therefore become eligible to opt in under section 177, even if it had not previously submitted an attainment plan.

Basic Statutory Requirements for Rules

As described in the overview of section 177 and other parts of this document, a State that wishes to significantly reduce NO_x emissions by adopting the California 2007 rule must adopt requirements that are “identical” to California’s requirements for which a waiver has been granted. Although this mandate does not require that the two sets of rules contain the exact same language, they cannot diverge in any substantive aspects such that an engine vehicle or engine manufacturer would be required to make a “third vehicle.”

In addition, section 177 requires that California and other States adopt the requirements at least two years before the commencement of the model year. Because manufacturing for the 2007 model year can commence as early as the beginning of 2006, States that wish to adopt the California HDDE requirements must act quickly. To ensure that they are providing the two-year lead time that California has already given the manufacturers, it would be best for States that opt in to issue their final rules by the end of 2004.

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Reasons for Adopting the California 2007 rule

The CAA does not require a state that desires to adopt California emission standards to set out reasons why it should be authorized to do so. Once a waiver is granted to California, section 177 sets out several objective criteria, that if met, authorize the state to adopt California emission standards. However, adoption of California emission standards requires a rulemaking or legislative act that is governed by the laws and regulations of the adopting State. Generally, there is no requirement that State legislatures provide reasons for passing laws. Those states that seek to incorporate the California 2007 rule by legislative action need not prepare a formal statement of reasons and basis for that action. However, they may wish to prepare a less formal document to inform their legislators. Where the State intends to opt-in by a rulemaking process State administrative law requirements ordinarily require development of a statement of reasons (or basis) for the decision to opt-in and development of an administrative record that supports the decision. Each State will, of course, decide whether it wishes to opt into the California 2007 rule and, if so, for what reasons. Each adopting State will also determine the procedural steps necessary to opt in.

This Model Rule incorporates a discussion of some of the issue relevant to such a decision. It also identifies key underlying documents relating to the Federal and California rulemaking, including emission modeling that provides state specific emission benefits of the 2007 rule. These documents should provide an initial basis for a rulemaking proposal by the adopting state that would be supplemented by interested parties during the comment period on the rule.

Heavy duty on-road vehicle emissions contribute **X per cent (bcb will fill in – it's probably around 15%)** of all NO_x emissions nationally. Without further action, as the economy grows and vehicle miles traveled increase, heavy duty diesel truck contributions to air pollution will continue to grow. The 2007 rules, if fully implemented, will reduce heavy duty on-road vehicle emissions to approximately one per cent of all NO_x emissions – a huge benefit. As identified earlier, the impact of these rules is even more significant in many metropolitan areas with serious air pollution problems. Thus, the 2007 rules represent a significant opportunity that will greatly assist State and local authorities in fulfilling their obligations to provide clean air for the public. Yet, recent history suggests that full implementation of these rules cannot be taken for granted as this stage.

As discussed above, the 1998 Consent Decrees were a negotiated agreement that allowed diesel manufacturers to sell unlawful (dirty) engines for several years in exchange for a guarantee that only cleaner engines would be sold beginning in October, 2002. As that date approached, however, the October 1, deadline came under intense legal and political challenges from engine makers, truck makers and fleet operators. Fleet operators in particular feared significant adverse economic impacts from an engine technology they were not familiar with. The Courts rejected the legal challenges to the October 1, deadline; and a split between some companies that were prepared to meet the

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deadline and those that were not ready enabled EPA and CARB to resist political pressure to modify the deadline.

Recently, some of those same groups have begun to raise similar concerns respecting the technologies that will be employed to meet the 2007 rules. Members of Congress responded to those concerns by requesting a study by the General Accounting Office. That study concluded.....,but has recommended..... (cite to Study). While neither EPA nor CARB has yet indicated an intention to delay or withdraw the 2007 rules, they are both being pressured to do so. Given the lead time restrictions of the CAA, states that do not adopt the California rules in the near term will find that this option is not available to them if a serious challenge to the rule is mounted in late 2005 or 2006. States that need the emission reductions associated with the 2007 rules can help ensure that they are implemented on time by opting in to the California rules. The risk of a frivolous challenge to the rule is likely to be substantially reduced if a block of States adopts the 2007 rules and demonstrates to those who might consider such a challenge that their task will not be an easy one. Importantly, if facts and circumstances develop where there is a serious question as to whether the 2007 rules (either Federal or California) should be implemented on time, those states that have opted in will be more likely to be included in the decision making process. Where a State had chosen direct adoption, a subsequent act by CARB or EPA to amend the 2007 rules would not automatically revise the law in the adopting state. In this instance it is very likely that the state would have to be consulted at some point in the process. This course of action could also raise an interesting question as to whether abandonment by CARB of the California 2007 rule, subsequent to other states opting in, would have any effect on the law of that state. For good reason, the CAA does not seem to contemplate such a backsliding scenario.

cbcb reviewers – didn't this come up in the context of the California zev program??

Further, requiring both Federal and California certification, as recommended in the Model Rule, is a simple way of ensuring that vehicles in the adopting state are as clean as can be required under the CAA

Adopting the California 2007 rules as recommended in the Model Rule also provides the opportunity for the State to protect its air quality by in-use enforcement of both the Federal and State rules. It also provides for enforcement authorities that are not otherwise available to EPA. If the emission controls on a 2007 vehicle are disabled, or if noncomplying vehicle is imported (either from outside State or from foreign countries that do not match U.S. emission standards), the resulting NO_x increase can be as much as one ton per year per vehicle.

EPA has identified a problem with illegal imports of uncertified heavy duty vehicles over the past few years and is working with the Bureau of Customs to address the problem, but both EPA and Customs have limited resources in this area. As the price differential between certified and uncertified vehicles increases, so will the incentive to import uncertified vehicles.

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Operators unfamiliar with the new technologies may remove the catalytic converters, as some pickup truck operators do today. Additionally, misfueling 2007 vehicles can result in an inoperable catalytic converter that may also clog and cause vehicle performance problems, encouraging some to remove the catalytic converter rather than bear the expense of replacing it. Further, some technologies under consideration, such as selective catalytic reduction, will not work without active measures (adding ammonia) by the operator.

Finally, under the Federal rules, EPA can require a manufacturer to offer to correct a defective emission control system, but cannot force the owner of the vehicle to correct the problem. Owner response rates in the Federal program vary widely, depending on the nature of the problem, and can easily be anticipated to be less than 50 per cent in some cases. The clean diesel rebuild program under the 1998 Consent Decrees was far less effective than EPA had hoped, providing additional evidence that voluntary recall programs may not be sufficiently effective. In contrast, under California's rules, if a vehicle is the subject of a recall (voluntary, influenced or mandatory) it cannot be registered unless it has been corrected. This program ensures that nearly 100 per cent of recalled vehicles are actually corrected.

EPA has limited resources assigned to mobile source enforcement and several years ago formally disinvested in tampering enforcement. In today's budget climate it is difficult to imagine that EPA will find significant additional resources to devote to these issues. Adopting the California 2007 rules as set out in the Model Rule does not require States to set aside specific enforcement resources, rather, adoption would provide States (and local authorities under a delegation) with a set of enforcement tools that are available for use if any of these potential problems arise. On the other hand, failing to adopt the California rules may leave States with an emission problem that they cannot correct.

There are also a number of reasons why a State may choose not to adopt the Model Rule. Some States may feel that mobile sources are the unique responsibility of the Federal government and may not wish to divert scarce resources from the work that is needed to manage emissions from stationary sources. States may also recognize that EPA has responded well to mobile source emission problems over the years and may not see a need to become involved. Additionally, a number of states have laws that precluded the adoption of pollution requirements that are stricter than those imposed by Federal law. Such states may need to review those laws to see whether they were intended to apply to mobile sources and whether they apply when the Federal law provides two options (i.e. Federal or California certification). Where it is determined that state law precludes adopting the Model Rule by regulation, legislation may be required. The legislative process brings with it a variety of additional factors that state officials must consider in determining whether to go forward with this process.

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State Opt-in Procedures

The Model Rule provided in this document provides several options for adopting the California 2007 Rule, but strongly recommends the use of the most straightforward approach – requiring that all trucks registered for use in the adopting State have California and Federal Certificates of Compliance. Each of these approaches should meet all the requirements discussed in the preceding section, so long as, at the time of state adoption, California has retained the California 2007 Rule described herein (or otherwise provided standards that are at least as stringent as the applicable Federal rule).

It is possible that some manufacturers will seek to certify MY 2007 engines as early as January 1, 2007. For this reason, states should be consider completion of any necessary rulemaking by the end of 2004 to ensure that all vehicles subject to the new standards (California or Federal) have been afforded the two-year lead time required under CAA section 177. In the ordinary course manufacturers will seek certification of MY 2007 engines commencing late Spring or Summer of 2007. Those manufacturers seeking to take advantage of the early introduction incentives of the Federal and California rules may seek earlier certification, but that issue should not interfere with a State opting into the California rules.

There may be any number of ways to phrase a requirement that vehicles registered for use in the adopting state bear California and Federal certification. As long as the effect of the language is to adopt California and Federal certification decisions modifications to the Model Rule language presented in Attachment I are unlikely to run afoul of the CAA section 177 mandates described above. Different States and agencies use their own drafting conventions and are constrained by different legal directives. However, any variance from the California 2007 Rule language for those who elect to adopt and administer the California rule itself will provide some risk of challenge by opponents of the rule. It will be important, therefore, for State policy makers and rule drafters to work closely with their legal counsel in deciding whether modification to the California 2007 Rule language is wise.

Indirect Adoption

The first of the model rule options is the recommended approach. This option requires that MY heavy-duty vehicles equipped with HDDEs and registered for use in the adopting state be certified by CARB and EPA as meeting the Federal and California 2007 standards (or be the subject to a California waiver). This requirement is set out in the first section of Option 1. In this way the State effectively adopts the CARB requirements, exemptions and administrative practice and ensures that there will not be a “third vehicle” issue. In addition to the basic adoption provision, this model rule provides the definitions necessary to properly implement this option and several enforcement options that may have the effect of broadening or narrowing or narrow the scope of the adoption.

Vehicles sold for use in California must be certified as meeting applicable emission standards both by CARB and by EPA. However, for years EPA has, by regulation (see, 40 C.F.R.) provided that a vehicle is Federally certified if it has a

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certificate of compliance issued by CARB. Additional precedent for this approach is found in EPA's treatment of onboard diagnostic devices (see 40 C.F.R.) and aftermarket pollution control devices, (see,). At the time EPA provides its waiver for the adoption of the California 2007 rules, those rules must be at least as stringent as the Federal rule. However, it is not clear whether California's waiver would be withdrawn, if EPA's regulation subsequently became more stringent than the California rule. Thus, requiring that the vehicle be certified by both CARB and EPA is helpful in insuring that vehicles registered in the adopting state are the cleaner of the two theoretically available classes of vehicles. **bcb note ; I'll check with CARB & EPA as to whether this is a realistic concern.**

Direct Adoption

A second approach to opting in to California's requirements is to promulgate a set of rules virtually identical to the California regulatory scheme, including the California 2007 Rule itself and so much of the balance of the California regulatory scheme as is necessary to implement the California 2007 rule. This could be accomplished by drafting a set of regulations that mirrors (as closely as possible) the California regulatory scheme or by incorporating large portions of the California regulations by reference. This option, referred to hereafter as "direct adoption" is extraordinarily complicated and requires the adopting State to include laws, regulatory language and test procedures equivalent in stringency (and perhaps other aspects) to the California rules. States utilizing this option will need to be very careful not to adopt rules that require the creation of a "third vehicle." Otherwise, the rules can be successfully challenged in court. Because the California motor vehicle program is complex, it would be very difficult for a State to begin from scratch and adopt its own laws and regulations without creating an illegal "third vehicle." For example, if California were to grant a waiver for a particular vehicle, or decide that a particular application was an allowable control strategy and not an illegal defeat device, could an adopting State reach a contrary result without raising "third vehicle" objections?

Management of a motor vehicle emission program is a complex and resource intensive program. States that cannot dedicate sufficient resources to properly manage such a program are rightly wary about attempting to do so. Further, in the case of a state that establishes its own emission standards and a requirement that it certify all vehicles intended for use in the state, there is some question about whether it can properly delegate essential governmental functions – permitting and law enforcement – to persons (CARB) who are not employees of the adopting State. Thus, some would argue that a state that employs direct adoption would actually have to make its own certification decisions. If this is the case, the State would presumably have to provide for administrative review of certification and enforcement decisions under its State law and defend challenges to those decisions in its courts. This could prove problematic where the adopting State did not participate in the underlying decision and has not developed an administrative record to support the decision.

It is reasonable to expect that the California 2007 rule may be substantively modified as it is implemented over the next few years. If so, would California's

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subsequent rulemaking invalidate the adopting State’s rule (if that State did not adopt the Later California revisions) because of an after-arising “third vehicle?”

bcg note to reviewers- has any state done this in the past? Is there any interest on anyone’s part to use Option 2? If so, I’ll develop the arguments in favor of such an approach some more

A state that has previously directly adopted other California emission standards, may wish to do so here as well. Notwithstanding the issues raised above, heavy duty diesel emissions may be such a significant portion of the emissions inventory in an area that the State decides that it needs to ensure appropriate implementation of the 2007 rules in its own state. Further, there may be a number of issues – such as approval of cold weather or high altitude emission control strategies, where the opt-in state may have a greater interest than California¹⁰. To accommodate such state issues, the Model Rule provides an editable copy of the California 2007 rule and other key provisions as well as suggested language for incorporating California’s rules by reference.

If such a State lacks authority to incorporate existing California rules by reference, obtaining such authority from the State legislature might be preferable to attempting to reproduce all the relevant California laws and rules. Enabling legislation could provide that the relevant State agency has authority to adopt by reference California’s rules relating to the control of emissions from HDDEs and vehicles equipped with such engines. Alternatively, the legislation could itself adopt the California rules by reference.

A Combined Approach

States may also wish to consider a combined approach whereby the State directly adopts the California 2007 rule, as set out above, but then provides that, if California or EPA has certified that the vehicle meets the emission limits in the adopting State’s rule, additional certification by the adopting State is not required. This approach would make it less likely that a frivolous challenge to the 2007 rule could succeed while avoiding administrative burden on the industry and the adopting State. Precedent for this approach is found in EPA’s treatment of onboard diagnostic devices (see 40 C.F.R.) and aftermarket pollution control devices, (see,). Attachment __ of the Model Rule provides language that may be employed by States choosing this approach.

Enforcement Options

Under either adoption approach, States would determine whether to ban the “sale, the “registration for use” or the “use” in the state of a vehicle that is not properly certified (i.e. by CARB and EPA or by the adopting state). Adopting states would also determine how to enforce the ban. This Model Rule recommends a ban on “registration for use” in

¹⁰ A state may also accommodate such special concerns by way of participating in California’s administrative processes.

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the state. Heavy duty vehicle purchasing patterns are substantially different from passenger motor vehicles. The majority of new heavy duty vehicles are purchased by a relatively small number of fleet operators, many of which do business in a number of states. A number of the larger fleets purchase directly from the truck manufacturer, rather than through local dealers. Thus, it would appear to be relatively easy for such corporations to place a purchase order for a substantial number of vehicles in a state that had not adopted the California 2007 rule.

For this reason a simple ban on the sale of vehicles in the state would likely not achieve the desired result. Introducing an “intent” test, i.e., a ban on the sale of vehicles “intended for use in the state” presents serious enforceability problems and does not reflect the dynamic nature of the industry. On one hand, it could be argued that large fleet operators “intend” for each of their vehicles to operate, at least some of the time, in each (or at least many) of the lower 48 states. On the other hand, some operators may argue that they don’t “intend” for their vehicles to operate anywhere because it is their customers who ultimately decide where goods are shipped. Even where operators have dedicated routes, business plans change frequently – the intended use of a vehicle may change every few months.

In order to assess highway user fees, a complex set of regulations has developed over the past century to determine when on road heavy duty vehicles must be registered for use in a state. Since the state’s interest in ensuring registration of vehicles that spend a substantial portion of their time on state highways would appear to parallel its interest in these matters, the Model Rule seeks to piggyback on the existing state highway registration program. Thus, where existing state law would require that a vehicle be registered in the state, the Model Rule would require that vehicle to be certified to both California and Federal standards for MY2007 and subsequent years. Basing the restriction on registration has the effect of ensuring that “dirty” used 2007 and later trucks are not subsequently imported into the state. As written, if the operator of used 2007 vehicle wishes obtain a vehicle registration, that vehicle must meet 2007 standards, even if it did not have to do so when new (because it was originally sold in another state).

Some states may also wish to ban the use of vehicles that do not meet the California and Federal 2007 rules. The Model Rule incorporates a provision that provides that the in-state registration of a vehicle that is required to conform to the 2007 rules is void if the vehicle does not possess such a certificate. This is intended to authorize the issuance of a citation to a driver for operating an unregistered vehicle and in that way bars the “use” of vehicles that are subject to the registration requirements of the adopting State.

However the Model Rule does not recommend a provision specifically barring out-of-state of vehicles that do not meet the California 2007 rules from entering the State. Such an approach is likely to be highly controversial and result in litigation based on the protections provided by the Commerce Clause of the U.S. Constitution. States that wish to maximize the benefits of the 2007 rules may wish to (1) ensure that the State motor vehicle registration requirement is as broad as Constitutionally permissible; (2) work with neighboring states to pass common rules and (3) use SIP authorities to adopt the low-sulfur diesel fuel requirements.

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The Model Rule also provides optional in-use enforcement provisions patterned after similar provisions of the California and/or Federal program. If a fleet of heavy duty diesel vehicles were illegally imported into the state, were misfueled or otherwise tampered with, the increase in emissions could be as large as if a new major stationary source were constructed in the State, ordinarily a matter of significant interest in any State.

The most effective enforcement approach is likely to be a requirement that the operator present some form of documentation that the vehicle is properly certified to the State Department of Motor Vehicles when the vehicle is registered. **Bcb to check as to what form of documentation is currently available to operators and whether a separate requirement needs to be incorporated in the Model Rule.** States that prefer not to adopt such a provision may prefer to require that the operator simply check a box on the registration form stating that the vehicle is properly certified. Some States may prefer to keep in use emissions enforcement separate and distinct from DMV activities. In those states in-use enforcement is still reasonably straightforward. The Model Rule incorporates the Federal and California 2007 rule requirements that provide for a restrictor plate on the fuel tank filler neck and a label indicating that the vehicle requires low sulfur fuel. These physical attributes should assist in identifying whether a vehicle is compliant with the 2007 rules, even where the engine certification label is not readily apparent. Thus, if a vehicle with a MY 2007 VIN has a full sized filler neck and does not have a label warning that low sulfur fuel is required, it likely does not comply with the 2007 rules. In states that have adopted the tampering provisions of the Model Rule, no further inquiry would be required to establish a violation. In states that have not done so, enforcement authorities would have to determine whether the noncompliance existed at the time of registration or whether the vehicle was subsequently altered.

Fortunately, the initial status of the engine can readily be determined as manufacturers are currently required to maintain lists of certified engines that EPA accesses to determine whether an imported (or domestic) engine is certified to U.S. standards. States who wish to audit in-state operators may seek the assistance of EPA or California in determining, by Vehicle Identification Number ("VIN"), which vehicles have been certified to a given standard. Alternatively, States may prefer to obtain such information directly from the engine manufacturers. The Model Rule provides information gathering and recordkeeping provisions at Appendix _____. At the commencement of MY 2007, EPA, California or the Vehicle/engine manufacturer should be able to provide current VIN conventions for identifying MY 2007 vehicles and engines.

bc b note: this is as far as I am done with as of 4/19 -- what follows is lifted from the 04 Model Rule --

Recommended Procedures for Opting In

1. *Verify that you have legislative authority to adopt the rules. In some states, environmental agencies have fairly broad authority to adopt regulations such as HDDE requirements; in other states, the legislature may have to pass a law granting such authority. Each State agency will need to consult with its legal counsel to determine if legislation is needed. If it is, a bill should be introduced soon.*

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2. *Study the model rules and accompanying materials closely, and circulate them to others involved in setting policy and drafting the rules. Note, however, that these materials are only the starting point for each State's regulation writing. Procedural and substantive requirements vary by State, and you will need to work within the framework of your State laws. Do not adopt any of the options in these model rules without first concluding that the option – and the rule language – works for your State. Further, as stated earlier, it is important that each State conduct its own thorough analysis of California's rules and the model rules.*
3. *Consult with the California Air Resources Board. Remember that your test procedures must be the same as CARB's; your State cannot require the manufacturers to produce a "third vehicle" (or engine). It is therefore important to fully understand CARB's HDDE rules, and to make sure that you are not deviating from them in any substantive way.*
4. *Consult with States that previously opted in under section 177. Although the HDDE rules certainly present new issues, a number of Northeast and Mid-Atlantic States have adopted other California motor vehicle standards – such as those for low-emission vehicles – under the authority of CAA section 177. These States probably have dealt with several of the policy and legal questions you now face. Tap their expertise and experience.*
5. *Decide whether – and how – you can incorporate the California rules by reference. This will be the easiest way to adopt the requirements. It also will present the fewest headaches down the road, to the extent you can automatically adopt future changes to the CARB rules. But State administrative procedure laws vary, so you will need to consult with your agency's legal counsel to determine what is allowed in your State.*
6. *Work closely with your Division of Motor Vehicles. The Division (or whatever it is called in your State) will be a key player in carrying out and enforcing the rules because denial of motor vehicle registration for non-certified vehicles is the best means for ensuring compliance. That is where "the buck stops." It is critical to involve your colleagues in the Division of Motor Vehicles concerning the importance of the requirements and how they will be enforced. Depending upon how your State's administrative procedures work, you may even need to propose and adopt the rules jointly with the Division.*
7. *Work closely with others who will be involved in enforcement. If the enforcement division of your State environmental agency will be primarily responsible for preventing illegal registrations, sales, and leases, you will need to involve them in writing the rules – particularly any enforcement provisions you may choose to adopt.*
8. *Consult early and often with heavy-duty vehicle dealers. It will be important for the dealers to understand the rules, so they can abide by them. Do not neglect outreach efforts for this important group.*
9. *Pursue your rulemaking carefully but quickly. You have to expect that diesel engine manufacturers will seriously consider challenging your adoption of the NTE and ESC test procedures. Thus, it is important that you work carefully to ensure that your rules meet all procedural and substantive mandates. It will also be important to provide a sound technical justification and to respond thoughtfully to public comments that HDDE manufacturers and others make. At the same time, you must proceed quickly – your State agency must issue the final rules by the end of 2001 to be assured that compliance will be required for model year 2005 engines.*
10. *Resist the temptation to modify the stringency of the requirements. Of course, in a rulemaking a State agency must review public comments and act in response to them. But remember that adoption of the HDDE requirements represents a special kind of rulemaking. If you make the test procedures more or less stringent, or cover additional vehicle or engine types, you could run afoul of the CAA section 177 requirements outlined above.*
11. *Do not reinvent the wheel. In addition to these STAPPA/ALAPCO model rules and supporting materials, you have on the accompanying CD an electronic version of the CARB Staff Report supporting the California HDDE rules. This report provides a wealth of technical support (and explanation) for the rules and further background information. Include much of this information in your proposal and final rule preamble as the basis for your State's requirements, but where necessary adapt information, such as the emission figures, to your State's situation.*
12. *Notify EPA after you opt in. CAA section 177 does not require that a State opting in to California's motor vehicle requirements provide special notification to vehicle or engine manufacturers. Rather, promulgation of the rules at least two years in advance of the first model year serves as legal notice. Moreover, there is no requirement to notify EPA that the State has issued motor vehicle requirements under the authority of section 177. Nonetheless, you may wish to notify the Director of EPA's Office of Transportation and Air Quality by letter to aid in coordination – even if individuals at EPA may already be aware of your State's efforts in this regard.*

Follow-Up Under the Different Options