



# Air Resources Board



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May 30, 2001

Honorable Christine Todd Whitman  
Administrator  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW  
Washington, D.C. 20460

Re: The "LEV II," "CAP 2000" and LEV II Follow-up Amendments To The California Exhaust And Evaporative Emission Standards And Test Procedures For New Motor Vehicles; Request for Waiver of Preemption Under Clean Air Act Section 209(b)

Dear Governor Whitman:

At a November 5, 1998 hearing, the California Air Resources Board (ARB or Board) approved the adoption of a comprehensive set of "LEV II" amendments to the California Low-Emission Vehicle (LEV) regulations. At a December 7, 2000 hearing, the Board approved the adoption of "LEV II follow-up amendments," which incorporate portions of the federal Tier 2 regulations to assure that only the cleanest cars and light trucks are marketed in California. I am writing to request that you grant a waiver of preemption under Clean Air Act (CAA) section 209(b) for these new standards and test procedures.

The LEV II amendments include imposing the more stringent passenger car exhaust emission standards on most sport utility vehicles (SUVs), pick-up trucks, and mini-vans; lower tailpipe standards for all light- and medium-duty vehicles; more stringent requirements for phasing in cleaner vehicles; major reductions in most evaporative emission standards; additional mechanisms for the generation of zero-emission vehicle (ZEV) credits; establishment of "CAP 2000" certification requirements; and numerous technical modifications. The amendments were formally adopted by Executive Order G-99-059 on August 5, 1999. They were submitted to the California Office of Administrative Law (OAL) for review on September 17, 1999, and were approved by OAL on October 28, 1999. The LEV II follow-up amendments were formally adopted by Executive Order G-00-069 on December 27, 2000. They were submitted to OAL for review on March 19, 2001, and were approved by OAL on April 30, 2001.

*The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our Website: <http://www.arb.ca.gov>.*

California Environmental Protection Agency

Honorable Christine Todd Whitman  
May 30, 2001  
Page 2

The regulatory actions covered by this request include the adoption in the LEV II rulemaking of two new state regulations and incorporated documents: title 13, California Code of Regulations (CCR), section 1961 and the incorporated new "California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," and section 1962 and the incorporated new "California Exhaust Emission Standards and Test Procedures for 2003 and Subsequent Model Zero-Emission Vehicles and 2001 and Subsequent Model Hybrid Electric Vehicles in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes." The LEV II rulemaking also includes amendments to the following regulations and incorporated documents: title 13, CCR, sections 1900, 1960.1 and the incorporated "California Exhaust Emission Standards and Test Procedures for 1988 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles" and "California Non-Methane Organic Gas Test Procedures"; section 1965 and the incorporated "California Motor Vehicle Emission Control and Smog Index Label Specifications"; section 1968.1, 1976 and the incorporated "California Evaporative Emission Standards and Test Procedures for 1978 and Subsequent Model Motor Vehicles" and new "California Evaporative Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles"; section 1978 and the incorporated "California Refueling Emission Standards and Test Procedures for 1998 and Subsequent Motor Vehicles" and new "California Refueling Emission Standards and Test Procedures for 2001 and Subsequent Motor Vehicles"; sections 2037, 2038, 2062 and the incorporated "California Assembly-Line Test Procedures for 1998 and Subsequent Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles" and new "California Assembly-Line Test Procedures for 2001 and Subsequent Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles"; section 2101 and the incorporated "California New Vehicle Compliance Test Procedures"; and sections 2106, 2107, 2110, 2112, 2114, 2119, 2130, 2137-2140, and 2143-2148.

The LEV II follow-up amendments covered by this waiver request amended one of the new regulations, and one of the new documents incorporated by reference in that regulation – title 13, CCR, section 1961 and the "California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles."<sup>1</sup>

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<sup>1</sup> The LEV II follow-up amendments were adopted in a rulemaking that also included amendments to the California emission standards for heavy-duty Otto-cycle engines to harmonize them with the standards recently adopted by U.S. EPA. These amendments, which affected title 13, CCR, section 1956.8 and the incorporated "California Exhaust Emission Standards and Test Procedures for 1987 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles" and the newly incorporated "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles," are not included in this waiver request. These other amendments will be included in a separate waiver request.

The specific final versions of the regulations and incorporated documents covered by this waiver request are: section 1961, title 13, CCR as shown in Item 27 of the attachments, the text of the "California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles" as shown in Item 28 of the attachments, and the remaining regulations and incorporated documents as shown in Items 13 and 14 of the attachments.

### I. The Preexisting California Motor Vehicle Emission Regulations

**The LEV regulations.** In adopting the LEV regulations in 1990-91, the ARB established the most stringent exhaust regulations ever for light- and medium-duty vehicles. The regulations included three primary elements: (1) tiers of exhaust emission standards for increasingly more stringent categories of low-emission vehicles, (2) a mechanism requiring each manufacturer to phase-in a progressively cleaner mix of vehicles from year to year with the option of credit trading, and (3) a requirement that a specified percentage of passenger cars and lighter light-duty trucks be ZEVs, vehicles with no emissions.

*The LEV standards.* There have been four low-emission vehicle categories to which a passenger car or lighter light-duty truck could be certified: Transitional Low-Emission Vehicle (TLEV), Low-Emission Vehicle (LEV), Ultra Low-Emission Vehicle (ULEV), and ZEV. For medium-duty vehicles, there are four categories: LEV, ULEV, Super Ultra Low-Emission Vehicle (SULEV), and ZEV. Each low-emission vehicle category has had a progressively more stringent standard for exhaust emissions of nonmethane organic gas (NMOG), a precursor of ozone pollution in the lower atmosphere. For example, a passenger car TLEV has had to meet an NMOG emission standard that is about one-half of the corresponding basic standard for 1994 model vehicles. Passenger car LEVs and ULEVs have had to meet standards for NMOG that are respectively about one-third and one-sixth of the corresponding 1994 standard. The identical LEV and ULEV standard for oxides of nitrogen (NOx) has represented a 50% reduction from the basic NOx standard for 1994 passenger cars, and the ULEV standard for carbon monoxide (CO) also represents a reduction of about 50% from the basic 1994 CO standard.

All passenger cars have been subject to the same low-emission vehicle standards, regardless of weight. However, heavier light-duty trucks and medium-duty vehicles were allowed to have progressively greater emissions, depending on the applicable weight category. There were two weight categories for light-duty trucks (LDT1 and LDT2) and four weight categories for medium-duty vehicles (MDV2, MDV3, MDV4, and MDV5).

The lightest light-duty trucks in the LDT1 category, such as the Toyota RAV4 and Ford Ranger, have had to meet the same standards as passenger cars. Medium light trucks in the LDT2 category, such as the Jeep Grand Cherokee and all mini-vans, have been allowed to emit about 25-33% more NMOG and CO, and 75-100% more NOx, than passenger cars in the same low-emission vehicle category. Most of the remaining heavier pick-up trucks and SUVs in the MDV2 and MDV3 categories, such as the Dodge Ram 1500 truck and Ford Expedition, had to meet LEV emission levels from 50 to 160% higher than the passenger car levels, and were subject to ULEV emission levels about 200% higher than those for passenger car ULEVs. Many full size vans and the very heaviest pickups and SUVs were in the "MDV4" category, with permitted emission levels for LEVs and ULEVs generally more than 200% higher than the corresponding passenger car levels.

*Requirements for phasing-in a cleaner vehicle fleet.* For each model year, a manufacturer may choose the standards to which each passenger car and light-duty truck is certified, provided that the manufacturer's entire fleet of these vehicles meets a specified fleet average NMOG emissions level. The permitted fleet average NMOG emission level for passenger cars and the lightest light-duty trucks gradually declined every year from 0.250 gram per mile (g/mi) in 1994 to 0.062 g/mi in the 2003 and subsequent model years. The 2003 model-year level was derived from a potential vehicle mix of 75% LEVs, 15% ULEVs, and 10% ZEVs. The heavier light-duty trucks have been subject to numerically higher fleet average NMOG emissions requirements reflecting the numerically higher TLEV, LEV, and ULEV standards and the absence of the ZEV requirements described below. Medium-duty vehicles have separate requirements based on a percent phase-in schedule, because the numerous vehicle weight classifications make a fleet average requirement difficult to implement. The low-emission vehicle standards for chassis-certified medium-duty vehicles are phased in between the 1998 and the 2004 model years, at which time a manufacturer was required to certify at least 60% LEVs and 40% ULEVs. The regulations also established a system for earning marketable credits for use in complying with the phase-in requirements.

*ZEV requirements.* As originally adopted, the LEV regulations required that specified percentages of the passenger cars and lightest light-duty trucks produced by each of the seven largest manufacturers be ZEVs, starting in 1998. The percentages were 2% for the 1998-2000 model years and 5% for the 2001-2002 model years. A requirement of 10% ZEVs applied to all but small-volume manufacturers starting in model-year 2003. In 1996 the Board eliminated the regulatory ZEV requirements applicable prior to the 2003 model year. The ZEV element also includes a marketable credits system.

**Evaporative emissions standards.** Evaporative emissions from motor vehicles account for approximately half of the reactive organic gas (ROG) motor vehicle

emission inventory in the state, and are classified into three types – running loss, hot soak, and diurnal emissions. Running loss emissions occur when the vehicle is driven. Hot soak emissions occur when the vehicle is stationary immediately after a fully-warmed up vehicle is stopped and the engine is turned off. Diurnal emissions occur when a vehicle is parked and are caused by daily ambient temperature changes. Most of these emissions result during increasing ambient temperatures which cause an expansion of the vapor in the fuel tank.

Just a month before its September 1990 approval of the LEV regulations, the Board approved significant new enhanced evaporative emission requirements that were phased in over the 1995-1997 model years. As subsequently modified, the enhanced requirements mandated effective control of the three types of evaporative emissions. Two test sequences are applicable for certification: (1) a 3-day diurnal-plus-hot-soak sequence ensures that running loss emissions, high-temperature hot soak emissions, and three days worth of diurnal emissions are controlled, and (2) a 2-day diurnal-plus-hot-soak sequence verifies that the canister is well purged during vehicle operation. Compliance with three separate emission standards is required for the vehicle's useful life: a stand-alone running loss standard, a combined highest 3-day diurnal plus high-temperature hot soak standard, and a combined highest 2-day diurnal plus moderate-temperature hot soak standard. The evaporative emission standards for passenger cars and light-duty trucks are 2.0 grams of hydrocarbon for the 3-day diurnal-plus-hot-soak test, 2.5 grams of hydrocarbon for the 2-day diurnal-plus-hot-soak test, and 0.05 g/mi for running losses.

**Certification, assembly-line, and in-use test requirements.** The ARB has for many years administered programs requiring a vehicle manufacturer to demonstrate that its vehicles meet the applicable emission standards in three ways – at the time of certification, as the vehicles are produced on the assembly-line, and in actual customer use.

Prior to vehicle production, a manufacturer must submit test data to the ARB demonstrating that the vehicle meets the applicable standards. The manufacturer must predict the anticipated emissions deterioration (called the "deterioration factor") of the vehicle in-use using pre-production, developmental vehicles. Once the deterioration factor is established, low mileage "emission-data" vehicles are tested and the emission results are adjusted using the deterioration factor to determine whether the vehicle meets the emission standards throughout its useful life. A manufacturer must provide this information for each "engine family," which is a group of vehicles having engines and emission control systems with similar operational and emission characteristics, in order for the vehicles to be California-certified.

Honorable Christine Todd Whitman  
May 30, 2001  
Page 6

Once an engine family has been certified, the manufacturer must conduct "quality audit" emission tests on a small portion of the actual production vehicles in each engine family as they leave the assembly-line.

The ARB administers the in-use compliance program by procuring late-model vehicles from their owners for emission testing to determine whether vehicles that have been properly maintained and used comply with the standards in actual use. If the ARB test data demonstrate that an engine family does not comply, the manufacturer must either submit a plan to remedy the nonconformity at its expense or be required to recall the vehicles. In either case, penalties may be assessed.

## II. The LEV II Amendments

The primary impetus for the new LEV II and CAP 2000 amendments came from the ARB's obligations under the State Implementation Plan (SIP) for ozone adopted by the Board in 1994. The SIP, which represents California's commitment to attain and maintain the federal ambient air quality standard for ozone in greater Los Angeles and the rest of the state, was approved by the U.S. Environmental Protection Agency (U.S. EPA) in 1995. The SIP contains Mobile Source Measure M2, which calls for the adoption of technology-based emission control strategies for light-duty vehicles to be implemented beginning with the 2004 model year and identifies a reduction of 25 tons per day (tpd) ROG plus NOx. In addition to Measure M2, the SIP recognizes that the greater Los Angeles area designated as extreme ozone nonattainment may need to rely on the development of additional technology measures to meet an additional 75 tpd ROG plus NOx emission reduction target – a target often referred to as the "Black Box." The LEV II amendments are intended to achieve the emission reduction targets of M2 and a significant portion of the emission reductions in the Black Box.

### ***LEV II Portion of the Amendments***

**Exhaust Emission Reductions.** The LEV II amendments include three major interrelated elements designed to reduce exhaust emissions: (1) restructuring the light-duty truck category so that most SUVs, mini-vans, and pick-up trucks are subject to the same low-emission vehicle standards as passenger cars, (2) strengthening the NOx standard for passenger car and light-duty truck LEVs and ULEVs, and changing other emission standards, and (3) establishing more stringent 2004 and subsequent model year phase-in requirements for passenger cars, light-duty trucks, and medium-duty vehicles. They also contain various other changes, including elimination of the TLEV standard after the 2003 model year.

*Passenger car standards for light and medium trucks.* Under the restructuring of vehicle weight classifications, all current light-duty trucks, and all current medium-duty vehicles

having a gross vehicle weight (GVW) of less than 8,500 lbs. will generally be subject to the same LEV and ULEV standards as passenger cars. Only the very heaviest SUVs and pick-up trucks would remain subject to separate medium-duty vehicle standards – vehicles such as the new Ford Excursion, Dodge Ram 2500 and 3500 trucks, and the largest Chevrolet Suburban model. When the vehicle categories were first established, the majority of vehicles in the medium-duty category were primarily used for work purposes. More lenient gram per mile emission standards were developed that account for heavier loads and a potentially more rigorous duty cycle of work trucks. However, it is now very common for trucks and SUVs to be used primarily for personal transportation (i.e., as passenger cars), and light trucks (including SUVs) have increased from 20% of the vehicle market in 1980 to almost 46% in 1997. This trend has a substantial impact on California's air quality because, although these vehicles are used as passenger cars, they are certified to the more lenient gram per mile emission standards designed for work trucks.

Since most pick-up trucks and SUVs have a curb weight less than 5,500 lbs. and a payload of approximately 1,000-2,000 lbs., it is anticipated that the majority of the heavier trucks will fall in the new LDT2 category below 8,500 lbs. GVW. (Although the same low-emission vehicle standards will apply, the current LDT1 category would be retained because of the different fleet average NMOG requirements described below and because only LDT1s are subject to the ZEV requirements.) It appears unlikely that manufacturers will unnecessarily add payload to trigger a numerically higher standard because of the negative impact on fuel economy, performance, and cost. In recognition of the fact that some of the heavier trucks in the new truck category will be engineered for more rigorous duty, the regulations allow a small percentage (up to 4%) of a manufacturer's truck sales in the LDT2 category to be certified to a marginally higher NOx emission standard.

*New LEV II Standards.* The amendments establish new "LEV II" standards for the current LEV, ULEV, and SULEV categories; the preexisting standards are being referred to as the "LEV I" standards. The new LEV II standards will be phased in from the 2004 to 2007 model years. During these four years a manufacturer must certify its vehicles to the LEV II standards at a rate of at least 25/50/75/100%, although the LEV I TLEV standard will be eliminated after the 2003 model year.

The LEV II standards are more stringent than the corresponding LEV I standards in several respects. First, the LEV II NOx standard for passenger cars and light-duty trucks certified to the LEV and ULEV standards has been reduced to 0.05 g/mi from the current 0.2 g/mi level. The LEV II particulate emission standard is 0.01 g/mi for diesel LEVs, ULEVs, and SULEVs. There is no LEV II TLEV standard. Second, the overall LEV II emission standards for medium-duty vehicles have been reduced to be substantially equivalent in stringency to the light-truck standards (although numerically

Honorable Christine Todd Whitman

May 30, 2001

Page 8

higher). Third, the useful life for LEV II passenger cars and light-duty trucks has been increased from the current 100,000 miles to 120,000 miles. Manufacturers must show compliance with the full useful life standards over this mileage. Fourth, a new light-duty SULEV category has been created with an NMOG standard less than one-fourth of the level for ULEVs; recent technology developments indicate that gasoline, alternative fuel, and hybrid electric vehicles could potentially reach these emission levels. Fifth, manufacturers will have the option of certifying any LEV, ULEV, or SULEV to a 150,000-mile certification standard, in which case the vehicle will generate greater NMOG credits for the fleet average NMOG determination. A manufacturer electing this option will have to provide an 8-year/100,000-mile warranty for high cost parts rather than for the normal 7 years/70,000 miles. Sixth, manufacturers can receive credit for the early introduction of larger trucks and SUVs meeting a 0.2 g/mi NO<sub>x</sub> emission level and certified to the LEV I LEV and ULEV standards; this credit can be used in the 2004-2008 model years on like vehicles certifying to the LEV and ULEV 0.05 g/mi NO<sub>x</sub> standards. A similar option is available for MDVs. There are also various other technical amendments.

*Requirements for phasing-in a cleaner vehicle fleet.* The current fleet average NMOG requirements will continue to apply through the 2003 model year. The amendments provide for continuing yearly reductions from the 2004 through 2010 model years, when the fleet average NMOG requirement for passenger cars and LDT1s will be 0.035 g/mi. Although each manufacturer can select its own vehicle mix, one approach in meeting the 2010 requirement would be a fleet made up of 18% LEVs, 47% ULEVs, 25% SULEVs, and 10% ZEVs. There is a separate phase-in schedule for the heavier light-duty trucks in the new LDT2 class. The fleet average for these vehicles starts at 0.085 g/mi in 2004 and declines to 0.043 g/mi in 2010 – the levels are somewhat higher because no ZEVs are projected in this class and a longer phase-in period for ULEVs and SULEVs is provided. For MDVs, the requirement of a 60/40 mix of LEVs and ULEVs in 2004 and subsequent model years has been changed to 40/60.

In addition to the fleet average NMOG requirements, manufacturers are required to phase in certification of models to the LEV II emission standards in place of the LEV I standards over the 2004-2007 model years. For passenger cars and vehicles currently classified light-duty trucks, a manufacturer must certify its vehicles to the LEV II standards at a rate of at least 25/50/75/100% during 2004-2007. A manufacturer may use an alternative phase-in schedule if it achieves equivalent NO<sub>x</sub> reductions by the 2007 model year. A manufacturer of vehicles classified as MDVs under both LEV I and LEV II (8501 – 14,000 lbs. GVWR) must phase-in at least one test group a year to the LEV II standards, with full compliance by the 2007 model year. Vehicles that were treated as MDVs under LEV I but will be in the LDT2 category under LEV II – i.e. the MDV2 and MDV3 categories – do not have to be certified to the LEV II standards until the 2007 model year, when 100% compliance is required. In California, the MDV2 and

Honorable Christine Todd Whitman  
May 30, 2001  
Page 9

MDV3 categories each make up about 8% of the total number of vehicles that will be subject to the passenger car standards under LEV II.

**Partial ZEV Allowances.** In the eight years since the ZEV requirements were originally adopted, a variety of new, advanced technologies had been developed. Many of these technologies are capable of achieving extremely low levels of emissions on the order of the power plant emissions that occur from charging battery-powered electric vehicles, and some demonstrate other ZEV-like characteristics such as inherent durability and partial zero-emission range. As a result, the Board has added additional flexibility to the ZEV program by broadening the scope of vehicles that could qualify for meeting some portion of the ZEV requirement. Manufacturers will be able to decide which mix of vehicles to use to meet the 10% ZEV requirement for the 2003 and subsequent model years, with the exception that large-volume manufacturers will have to meet at least 40% of the requirement using true ZEVs or vehicles receiving a full ZEV allowance. The process of calculating ZEV allowances for candidate vehicles consists of assigning basic "allowances" consisting of a baseline allowance, a zero-emission vehicle miles traveled (VMT) allowance, and a low fuel-cycle emissions allowance.

In order to receive any ZEV allowance, a vehicle will have to qualify for the "baseline ZEV allowance" of 0.2. To receive this allowance, the vehicle will have to meet the SULEV standard at 150,000 miles, satisfy applicable second generation on-board diagnostics requirements (OBD II), and have "zero" evaporative emissions – evaporative emissions below the background level established for non-fuel evaporative emissions resulting from off-gassing of paint, upholstery, tires, and other vehicle sources. The manufacturer will also need to provide an emission warranty under which all malfunctions identified by the OBD II system would be repaired under warranty for a period of 15 years or 150,000 miles, whichever occurs first.

An additional allowance will be provided based on the potential for realizing zero-emission VMT (e.g. capable of some minimal all-electric operation traceable to energy from off-vehicle charging), up to a maximum of 0.6. If a vehicle does not have any zero-emission VMT potential but is equipped with advanced ZEV componentry, it can qualify to earn an additional 0.1 ZEV allowance. Under the final allowance, a vehicle that uses fuels(s) with very low fuel-cycle emissions will receive a ZEV allowance of up to 0.2. In order to qualify for a full ZEV allowance of 1.0, a car will have to qualify for the maximum amount under each allowance.

The amendments also provide that where a ZEV (or full ZEV allowance vehicle) has a long all-electric range, it will qualify for declining numbers of multiple ZEV credits in the 1999-2007 model years.

**Evaporative emissions requirements.** The LEV II amendments establish new more stringent evaporative emission standards for the 3-day diurnal-plus-hot-soak test and the 2-day diurnal-plus-hot-soak test. The new standards apply to both fuel and non-fuel vehicle emissions. The standards for passenger cars represent up to a 75% reduction from the current evaporative emission standards. The standards for the other vehicle categories are based on the passenger car standards and are incrementally increased to account for higher non-fuel emissions of the larger vehicles. The useful-life requirements of each of the evaporative emission standards have also been extended to 15 years or 150,000 miles, whichever first occurs, for all vehicles.

Certification to the new evaporative emission standards is required for 40% of a manufacturer's vehicles in the 2004 model year, 80% in the 2005 model year, and 100% in the 2006 model year. Manufacturers have the option of developing an alternative phase-in schedule similar to the option allowed for OBD II compliance. The amendments also make various improvements to the evaporative emissions test procedures designed to assure accuracy at low measurement levels.

**Other Amendments.** The LEV II amendments also contain a number of other elements, including amendments to the test procedures for hybrid electric vehicles (HEVs) and for ZEVs, changes to the requirements for the California smog index label, NMOG credits for vehicles using an ozone-reducing catalyst on the radiator or other supporting substrates, and an extension in the phase-in period for 0.020 inch evaporative leak detection for OBD II systems.

### ***CAP 2000 Portion of the Amendments***

The U.S. EPA administers certification and in-use test requirements that are similar to the ARB requirements. In 1995, the U.S. EPA, ARB, and automobile manufacturers signed a Statement of Principles committing themselves to working together to achieve regulatory streamlining of light-duty vehicle compliance programs with a greater focus on in-use compliance with emission standards. Since then the U.S. EPA and ARB have worked with manufacturers to implement these principles in what has become known as the "Compliance Assurance Program," or "CAP 2000." On July 23, 1998 (63 F.R. 39654), U.S. EPA issued a notice of proposed rulemaking for the program to become effective with the 2001 model year, although manufacturers would have the option to certify 2000 model-year vehicles using CAP 2000. The final amendments were promulgated on May 4, 1999 (64 F.R. 23906). The ARB's CAP 2000 amendments incorporate by reference much of the federal program, and have the same implementation dates.

The CAP 2000 program significantly reduces the emission testing and reporting requirements for certification and provides manufacturers with more control over roll out

of their product lines. A manufacturer will be able to develop its own durability demonstration (with pre-approval by the Executive Officer) and apply it to several engine families that have been grouped into broad "durability groups" of vehicles with similar deterioration characteristics. Each durability group will consist of several "test groups" based on the emission standards to which a vehicle is certified. Manufacturers will then select one "worst case" vehicle from each test group to emission test rather than the two required under the prior program. This reduction in testing will result in 75% fewer durability demonstrations than now required and a 50% reduction in the number of emission data vehicles tested. CAP 2000 will also provide more flexibility regarding the information required for certification.

The amendments eliminate the 2% assembly-line quality audit emission tests because the new in-use testing requirements described below are more likely to ensure that manufacturers have durable emission control systems that prevent potential recalls. The 100% assembly-line functional test has been retained.

The CAP 2000 amendments establish a significant new in-use compliance program under which manufacturers will be required to procure and test customer vehicles on an "as received" basis at 10,000 miles, at 50,000 miles and one vehicle from every test group at a minimum of 75,000, 90,000, or 105,000 miles depending on the useful life of the vehicle. If the vehicles tested do not meet the applicable emission requirements, the manufacturer will have to conduct a subsequent test program on properly maintained and used vehicles to determine whether remedial action is required.

### **III. The LEV II Follow-up Amendments**

The LEV II follow-up amendments were developed after US. EPA adopted the federal Tier 2 regulations, which were published in the February 10, 2000 Federal Register (65 F.R. 6698). The Tier 2 regulations represent U.S. EPA's own stringent program for reducing emissions from the next generation of passenger cars, light-duty trucks, and medium-duty vehicles, nominally starting in the 2004 model year. Although Tier 2 was patterned after the LEV II program, it contains some unique features and program elements that differ from the California program. These include establishing eleven different emissions standard "bins" for cars and light-duty trucks that function in the same manner as the vehicle categories (such as LEV or ULEV) in the California program. Tier 2 contains a NOx fleet average requirement rather than an NMOG fleet average requirement as in California. The federal program also includes phase-in elements that differ in several respects from the LEV II program.

While the California LEV II standards are generally more stringent than the comparable federal requirements, there are some features of the Tier 2 program that will likely result in manufacturers certifying certain vehicle models to a more stringent federal exhaust

emission standard than is required in California. In particular, this could occur because of LEV II program flexibilities built into the phase-in years (2004 through 2006) for vehicles in the current MDV2 and MDV3 categories. These vehicles do not have to comply with the LEV II passenger car standards until the 2007 model year; before that time they remain subject to the LEV I MDV2, and MDV3 standards. Because there are fewer models in this heavier category, the ARB concluded that a mandatory phase-in of a specified percentage of models each year from 2004 to 2006 could eliminate flexibility that would benefit individual manufacturers. Staff expected, however, that some phase-in would occur naturally because of the engineering resource limitations mentioned above.

In Tier 2, U.S. EPA chose to require an aggressive phase-in of the heavier light trucks. During the phase-in, which starts in the 2004 model year, any model not yet complying with the new Tier 2 standards must meet an interim NOx fleet average standard. This standard is more stringent than the California LEV I standard. Also, Tier 2 imposes a cap on NOx emissions from vehicles in this weight category that is more stringent than the LEV I NOx limits for vehicles in the current MDV3 category. Thus it is expected that in some instances during the 2004-2006 model years, manufacturers will market outside of California heavier light trucks that are cleaner than the equivalent models sold in California. The LEV II follow-up amendments will prevent this from occurring by requiring manufacturers to sell the cleaner federal models in California.

In addition, Tier 2 allows diesel sport utility vehicles and pickup trucks to emit at higher emission levels than passenger cars if their excess NOx emissions are offset by lower emissions from other vehicles. In contrast, beginning in 2007 California requires sport utility vehicles and large pickup trucks to meet the same emission standards as passenger cars. The need to offset high diesel vehicle emissions may result in manufacturers reducing the emissions from some federal Tier 2 vehicles ahead of the schedule required by LEV II.

The basic effect of the LEV II follow-up amendments is to require that, beginning with the 2004 model year, a manufacturer may not certify a California vehicle to California exhaust emission standards that are less stringent than the federal standards to which an equivalent federal model is certified. In such a case, the model sold in California must meet the federal exhaust emission standards to which the federal model is certified. This will assure that the cleanest vehicles will always be marketed in California. The California model will still have to be certified to the California evaporative emission standards and the California On-Board Diagnostics (OBD II) requirements (except that Tier 2 vehicles greater than 6,000 pounds that are sold in California prior to the 2005 model year may meet federal, rather than California, evaporative emissions and on-board diagnostics requirements). A California vehicle model will be treated as equivalent to a federal model if all of the following

characteristics are identical: vehicle make and model, cylinder block configuration (e.g., L-6, V-8), displacement, combustion cycle, transmission class, aspiration method (e.g., naturally aspirated, turbocharged), and fuel (e.g., gasoline, natural gas, methanol).

There is an exception for a California model where the cleaner equivalent federal model vehicle is produced in limited numbers and only marketed to fleet operators that are subject to federal clean fuel fleet requirements. A manufacturer has the option of marketing a federal passenger car, light-duty truck, or medium-duty vehicle in California that is cleaner than its California counterpart earlier than the 2004 model year if it chooses to do so.

A federal model certified to Tier 2 standards that do not correspond to a California emission category will be counted as certified to the next highest California emission category (based on a comparison of hydrocarbons plus NOx) for the purpose of determining compliance with the NMOG fleet average requirements, calculating vehicle emission credits, and compliance with phase-in requirements. For purposes of calculating the NMOG fleet average, a manufacturer will receive credit for the additional emission benefits achieved by certifying vehicles to optional 150,000-mile emission standards rather than the 120,000-mile requirements.

#### **IV. Criteria for a Waiver of Preemption**

Section 209(a) of the CAA provides that no state shall adopt or enforce any emission standard for new motor vehicles, and no state shall require certification, inspection, or any other approval relating to the control of emissions from any new motor vehicle as a condition of registration or titling in the state. However, section 209(b) directs the Administrator to waive federal preemption for new motor vehicle emission standards adopted and enforced by California<sup>2</sup> if the state determines that the state standards will be, in the aggregate, at least as protective of public health and welfare as applicable federal standards. The Administrator is to deny a waiver only if she finds: (1) that the protectiveness determination of the state is arbitrary and capricious, (2) that California does not need separate state standards to meet compelling and extraordinary conditions, or (3) that the state standards and accompanying enforcement procedures are not consistent with CAA section 202(a).

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<sup>2</sup> The section 209(b) waiver provisions apply to any state which has adopted standards (other than crankcase emission standards) for the control of emissions from new motor vehicles or motor vehicle engines prior to March 30, 1966. (CAA §209(b)(1).) California is the only state that meets this condition. (S. Rep. No. 403, 90th Cong. 1st Sess., 532 (1967); Motor and Equipment Manufacturers Ass'n [MEMA] v. EPA, 627 F.2d 1095, 1100 note 1 (D.C.Cir. 1979).)

## V. The LEV II Standards and Test Procedures as Modified by the LEV II Follow-Up Amendments Qualify for a Waiver of Preemption

Our Board made a protectiveness determination in Resolution 98-53, in which the Board approved the LEV II amendments subject to additional public comment. This determination was affirmed in Executive Order G-99-059, in which the Executive Officer adopted the amendments. Both of these determinations were based on a comparison to U.S. EPA's Tier 1 emission standards – the federal standards that were then in place.

As discussed above, U.S. EPA issued the federal Tier 2 motor vehicle emissions standards on December 21, 1999, and they were subsequently published in the February 10, 2000 Federal Register (65 F.R. 6698). In approving the LEV II follow-up amendments in Resolution 00-45, the Board determined that the California LEV II emission standards for passenger cars, light-duty trucks and medium-duty vehicles as amended by the LEV II follow-up amendments are, in the aggregate, at least a protective of public health and welfare as the applicable federal standards. Therefore, the waiver of preemption we are requesting is to be granted unless you make one of the three findings enumerated in section 209(b).<sup>3</sup>

**California's protectiveness determination.** Our protectiveness determination is clearly not arbitrary or capricious. There are several respects in which the California LEV II regulations are more stringent than the federal Tier 2 program, particularly NOx standards that are more stringent in the 2007 model year and become increasingly more stringent as the fleet average NMOG standards continues to decline through model year 2010.

While there are a few respects in which the Tier 2 regulations were more stringent than the original LEV II regulations – particularly the 2004-2007 model year phase-in for the vehicles that are treated as medium-duty vehicles under LEV I but will be light-duty

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<sup>3</sup> The California exhaust emission standards for passenger cars, light-duty trucks, and medium-duty vehicles applicable prior to adoption of the California LEV II standards have been the subject of various waivers of federal preemption, including 63 F.R. 18403 (April 15, 1998) (LEV I standards for medium-duty vehicles); 59 F.R. 48625 (September 22, 1994) (HC, NOx and CO standards for revised MDV category); 58 F.R. 4166 (January 13, 1993) (LEV I standards for passenger cars and light-duty trucks); 57 F.R. 38503 (August 25, 1992) (standards for methanol-fueled vehicles); 55 F.R. 43029 (October 25, 1990) (0.25 g/mi NMHC standards for 1993 and subsequent model light-duty vehicles); 51 F.R. 2430 (January 16, 1986) (standards for light- and medium-duty vehicles fueled with liquefied petroleum gas and liquefied natural gas); 49 F.R. 18887 (May 5, 1984) (particulate matter standards for 1985 and subsequent model-year diesel light-duty vehicles); 47 F.R. 1015 (January 8, 1982); 46 F.R. 36237 (July 14, 1981); 46 F.R. 26371 (May 12, 1981); 45 F.R. 77509 (November 24, 1980); 45 F.R. 12291 (February 25, 1980); 44 F.R. 38660 (July 2, 1979); 43 F.R. 29615 (July 10, 1978); 43 F.R. 25729 (June 14, 1978); 43 F.R. 15490 (April 13, 1978); 43 F.R. 1829 (January 12, 1978); and 40 F.R. 23102 (May 28, 1975).

trucks under LEV II, and the Tier 2 standards for medium-duty passenger vehicles – the LEV II follow-up amendments will assure that any cleaner federal vehicles that are certified because of the differences in programs will also be marketed in California. It therefore follows that the overall California emission standards for passenger cars, light-duty trucks, and medium-duty vehicles are at least as stringent as the applicable federal standards.

**Compelling and extraordinary conditions.** Compelling and extraordinary conditions continue to warrant establishment of separate standards for California. The relevant inquiry under this criterion is whether California needs its own motor vehicle pollution control program to meet compelling and extraordinary conditions, not whether any given standards are necessary to meet such conditions (see, e.g., 49 F.R. 18887, 18889-18890 (May 3, 1984)). The Administrator has determined that the phrase "compelling and extraordinary conditions" refers to:

"... certain general circumstances, unique to California, primarily responsible for causing its air pollution problem [including] ... geographical and climatic factors [as well as] ... the presence and growth of California's vehicle population, whose emissions were thought to be responsible for ninety percent of the air pollution problem in certain parts of California."<sup>4</sup>

Thus, the Administrator has stated:

"It is evident . . . that 'compelling 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 numbers and high concentrations of automobiles, create serious air pollution problems."<sup>5</sup>

California, and the South Coast air basin in particular, continues to experience the worst air quality in the nation. The unique geographical and climatic conditions, and the tremendous growth in the vehicle population and use which moved Congress to authorize California to establish separate vehicle standards in 1967, are still in existence today. Based on the foregoing, we believe that California has demonstrated the continuing existence of compelling and extraordinary conditions justifying the need for its own motor vehicle pollution program. (see 51 F.R. 2430 (January 16, 1986).)

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<sup>4</sup> 49 F.R. at 18890.

<sup>5</sup> Id.

### **Consistency with CAA section 202(a)**

The Administrator has stated that California's standards and accompanying enforcement procedures would be inconsistent with section 202(a) if: (1) there is inadequate lead time to implement the new procedures, giving appropriate consideration to the cost of compliance within the applicable time frame, or (2) the federal and California test procedures impose inconsistent certification requirements so as to make manufacturers unable to meet both sets of requirements with the same vehicle.<sup>6</sup>

**Technological feasibility and lead time.** As discussed above, manufacturers must phase-in vehicles certified to the LEV II exhaust emission standards over the 2004-2007 model years at a rate of at least 25% in 2004, 50% in 2005, 75% in 2006, and 100% in 2007. In addition, the fleet average NMOG standard for passenger cars and light-duty trucks becomes incrementally more stringent each model year from 2004 through 2010. In the case of MDVs, the 60/40 minimum required mix of LEVs and ULEVs becomes 40/60 starting in the 2004 model year. Manufacturers must phase in vehicles meeting the LEV II evaporative emission standards between the 2004 and 2006 model years, at a rate of at least 40% in 2004, 80% in 2005 and 100% in 2006.

Given the substantial lead time, the LEV II standards are technologically feasible and consistent with CAA section 202(a) if the ARB identifies or predicts the technology that can be used to comply with the standards,

... answers any theoretical objections to the [projected control technology], identifies the major steps necessary for the refinement of the [technology], and offers plausible reasons for believing that each of these steps can be completed in the time available.<sup>7</sup>

Given U.S. EPA's adoption of the Tier 2 standards, it clearly cannot determine that the LEV II program as modified by the LEV II follow-up amendments is technologically infeasible. However, it may be useful to review the extensive feasibility demonstration conducted by the ARB for the LEV II program.

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<sup>6</sup> See, e.g., 46 F.R. 26371, 26373 (May 12, 1981). Even where there is incompatibility between the California and federal test procedures, EPA has granted a waiver under circumstances where EPA accepts a demonstration of federal compliance based on California test results, thus obviating the need for two separate tests. (43 F.R. 1829, 1830 (January 12, 1978); 40 F.R. 30311, 30314 (July 18, 1975).)

<sup>7</sup> Natural Resources Defense Council v. U.S. EPA, 655 318, 331-2 (D.C. Cir., 1981).

*Exhaust emissions standards.* With regard to the exhaust emissions portion of the LEV II program, the two key elements are: (1) making most SUVs, pickup trucks, and minivans subject to the same exhaust emission standards that apply as passenger cars, and (2) imposing more stringent exhaust emission standards and durability requirements for the expanded category of passenger cars and light trucks. The technological feasibility demonstration for the new exhaust requirements is set forth on pages II-32 - II-53 of the Staff Report (Tab 2). It reflected a two-step process – identifying current and projected technologies that can improve exhaust emission performance, and then conducting actual emission tests on already well-controlled vehicles that the staff equipped with advanced emission technologies.

The emission control technologies that can be used to meet the LEV II ULEV standards consist of both technologies that have already been developed for use in complying with the LEV I standards, and expected improvements to mature LEV I technologies that will help assure compliance with the LEV II standards. Staff identified and discussed 22 different low-emission technologies that are currently available to reduce exhaust emissions. The currently-available LEV I technologies fall into four basic categories – improvements to the fuel control system, improvements in fuel atomization and delivery, improvements in catalyst performance, and methods to reduce engine-out emission levels. The Staff Report presented a range of technologies from which manufacturers will choose; it is unlikely any single vehicle will feature all of these improvements. Many of the technologies discussed are already in use on selected vehicle models. The expected additional improvements that are expected to be developed for LEV II compliance include increased catalyst volume and substrate cell density, increased catalyst loading and improved washcoats, and improved catalyst light-off with secondary air injection and retarded spark timing.

The staff conducted two exhaust emissions test programs, involving over 4,000 hours of testing time. The first, described on pages II-45 - II-46 of the Staff Report, was designed to evaluate the feasibility of passenger cars meeting the LEV II ULEV 50,000 mile NO<sub>x</sub> standard of 0.05 g/mi, which is four times as stringent as the current ULEV NO<sub>x</sub> standard. Five 1997 and 1998 passenger cars in a range of weights up to a Mercury Grand Marquis with a V8 engine were tested. After baseline testing, new advanced catalysts were installed on all of the vehicles; if additional NO<sub>x</sub> reductions were needed the staff made additional modifications for air injection timing, fuel biasing, or ignition retard at engine start. All of the cars on which tests were completed met the 50,000 mile LEV II ULEV standards. The Mercury Grand Marquis was the best performer despite its greater size and weight. The automakers have generally acknowledged that passenger cars and vehicles currently classified as light-duty trucks will be able to meet the LEV II standards. In fact, in the industry's alternative proposal, the ULEV standards for these vehicles were slightly more stringent than those proposed by staff.

The staff's second exhaust emissions test program addressed the feasibility of the LEV II standards for the heavier 6,000 - 8,500 lbs. GVW pickup trucks and SUVs that are now treated as medium-duty vehicles but will be subject under LEV II to the same standards as passenger cars. This is the element of LEV II exhaust proposal towards which most of the industry and business opposition was directed, and accordingly the ARB's testing efforts focussed on this category of vehicles. This test program is described on pages II-44 - II-51 of the Staff Report. The tests were conducted on 1998 Ford Expeditions, which were chosen because the Expedition is among the heaviest vehicles in the classification but already exhibits very capable emissions performance. Modifications of the Expeditions involved adding advanced catalysts, electric air injection, and efforts to mimic the fuel tailoring manufacturers will be able to achieve by fine-tuning the onboard computer software. Unfortunately, staff had no capability to modify the software on the two test Expeditions to tailor the fuel system to the aged advanced catalysts. Instead, staff developed the modified preconditioning procedure that regained most of the initial good emissions performance of the test Expeditions.

Staff conducted a total of 26 tests on the optimized Expedition with an advanced catalyst and an electric air injection system. Of those tests, staff selected seven that represented the best fuel targeting staff could achieve without the capability of modifying the fuel control to match the new catalyst. The average of the seven tests, presented at the hearing, was 0.071 g/mi NMOG and 0.05 g/mi NOx, compared to the LEV II 50,000 mile LEV standards of 0.075 g/mi NMOG and 0.05 g/mi NOx. Vehicles the size of the Expedition may not have to be certified to the LEV II standards until the 2007 model year. In any case, the professional emission control calibrators and other automotive engineers working for the manufacturers will have the opportunity not only to optimize the fuel system calibration but also to choose among the various additional emissions control technologies described in the Staff Report.

Since adoption of the LEV II regulations, two manufacturers have already certified gasoline-powered passenger cars to the 120,000-mile LEV II SULEV standards – a 2.3 L Honda Accord EX (Executive Order A-23-281, issued November 8, 1999) and a 1.8 L Nissan Sentra CA (Executive Order A-15-334, issued November 8, 1999). In addition, a third manufacturer has certified a gasoline plus battery-assist hybrid to those standards (1.5 L Toyota Prius, Executive Order A-14-382, issued May 25, 2000). A comparison of the 120,000 mile LEV II passenger car standards shows how impressive this emissions performance is:

120,000 mi. LEV II Passenger Car Standards (g/mi)

Emissions Category	NMOG	CO	NOx
LEV	0.090	4.2	0.07
ULEV	0.055	2.1	0.07
SULEV	0.010	1.0	0.02

*Evaporative emissions standards.* During the early stage of regulatory development, staff conducted public workshops and individual meetings with the major automotive manufacturers and a literature review to gather information regarding current and advanced evaporative emission technology, non-fuel background evaporative emissions data, and other information pertinent to establishing appropriate evaporative emission standards. The Staff Report identified a number of evaporative emissions control technologies currently being used, as well as potential technologies that could be used to meet the LEV II standards. (pp. III-10 – III-15.) Staff also conducted four test programs to supplement the available information. Including manufacturers' and literature data along with the ARB test data, more than 30 vehicles were evaluated and tested.

The first test program, described on pages III-7 - III-9 of the Staff Report, investigated potential emission reductions by improving evaporative emission control components on four 1998 model-year passenger cars. Evaporative emissions decreased, on average, 35%. A second test program was conducted after issuance of the Staff Report to address industry concerns that staff did not use production-type components to demonstrate feasibility. This study consisted of testing a 1998 model-year Toyota Camry modified with currently available lowest-emitting fuel and evaporative components. The results of the study were shared with industry and presented at the hearing – with state-of-the-art components compared to the original equipment manufacturer components, emissions decreased 58% from 0.53 to 0.22 grams per three-day diurnal-plus-hot-soak test. This level is well below the proposed LEV II standard of 0.50 grams per test.

The third test program evaluated non-fuel background emissions of a wide range of vehicle types from a compact passenger car to one of the largest sport utility vehicles. Vehicles representing 21 vehicle models were tested. The data, described on pages III-15 - III-18 of the Staff Report, were used to adjust the proposed evaporative standards to include the stabilized non-fuel emission levels from the different vehicle categories. An additional test program investigated emission variability by testing five different vehicles of a single vehicle model (Toyota Corolla) that already complies with the proposed standards. Industry representatives had continued to comment that the evaporative emission variability is so high that it is difficult to duplicate emission results from one vehicle to another. The test results, made available to industry and presented

Honorable Christine Todd Whitman  
May 30, 2001  
Page 20

at the hearing, showed that variability from vehicle to vehicle was relatively low, and the headroom allowed in the proposed standard sufficiently accounts for the observed variability. The primary data set used to determine the compliance margin was an extensive study conducted by Ford Motor Company on nine current-technology Crown Victoria vehicles tested at various mileage points from 4,000 to 129,000 miles. The compliance margin estimated in this extensive study was used for the proposed evaporative standard. (Staff Report, Section III.C.5.)

Finally, it is noteworthy that approximately 20% of the certified 1999 model-year passenger cars have certified evaporative emission levels lower than the proposed standards. In addition, one of the largest SUVs, the 1999 model year Chevrolet Suburban, complies with the proposed evaporative standard in its vehicle category.

*Diesel light-duty vehicles.* As discussed on pages 13-16 of the Final Statement of Reasons, the Board ultimately decided not to include a LEV II TLEV standard, and to eliminate the LEV I TLEV standard after the 2003 model year. We are not aware of technologies that would enable diesel passenger cars or light-duty trucks to meet the LEV II LEV standard, and thus we do not expect manufacturers will be able to certify these vehicles under the LEV program after the 2006 model year, if not after the 2003 model year. However, this will not render the LEV II regulations inconsistent with CAA section 202(a) because manufacturers will undoubtedly be able to sell a range of passenger cars and light-duty trucks that satisfies the basic market demand.

Manufacturers are currently marketing very few diesel passenger cars and light-duty trucks in California. One of the reasons for deleting the TLEV standards with their much less stringent NOx and PM limits was that the Board did not provide special standards designed to encourage the penetration of diesels into a market segment where they are generally not now represented. In the 1999 model year, there were less than 3,500 diesel passenger cars (manufactured by Volkswagen and Mercedes Benz) sold in the state, and no light-duty trucks – out of a total fleet of over 1.5 million vehicles. There have been no diesel vehicles certified for the 2000 model year in either category. And all of the 1999 and 2000 model-year diesel vehicles in the MDV category are in the MDV4 and MDV5 weight groups and will therefore be subject to the LEV II MDV standards that we believe are technologically feasible for diesel vehicles.

In the seminal International Harvester case, the U.S. Court of Appeals invalidated U.S. EPA emission standards that would have the practical effect of prohibiting all light-duty trucks for a model year. However, the Court emphasized that the CAA does not preclude the adoption of standards which, although feasible for the great majority of vehicle models, cannot be met by some limited engine types:

Honorable Christine Todd Whitman  
May 30, 2001  
Page 21

We are inclined to agree with the Administrator that as long as feasible technology permits the demand for new passenger automobiles to be generally met, the basic requirements of the Act would be satisfied, even though this might occasion fewer models and a more limited choice of engine types. The driving preferences of hot rodders are not to outweigh the goal of a clean environment.<sup>8</sup>

Given the absence of diesel vehicles from the current new passenger car or light-duty truck fleet, there should be no serious doubt that the basic market demand for passenger cars and light-duty trucks will be met in the state if diesels continue to be absent in these weight categories. The market demand for diesels in California is in the heavier weight categories where we expect diesel vehicles and engines to continue to be sold.

On November 5, 1999, Navistar International sued the ARB in the San Diego County Superior Court, seeking a judicial determination and declaration that the ARB exceeded its authority under state law in establishing LEV II emissions standards that are technologically infeasible for light-duty diesel cars and trucks. (Navistar International Transportation Corp. v. California Air Resources Board et al. (Case Number GIC 738286).) Navistar also sought a writ of mandate directing ARB to establish LEV II standards that are technologically feasible for light-duty diesel cars and trucks. On June 2, 2000, Superior Court Judge William R. Nevitt, Jr. denied Navistar International's motion for summary judgment or alternatively for summary adjudication. This effectively denied relief in the trial court. The case is now on appeal to the Court of Appeal of California, Fourth Appellate District.

The LEV II follow-up amendments are clearly technologically feasible, as the only federal models that will have to be marketed in California under the amendments will be models that have already been certified to the federal emission standards. In the LEV II follow-up rulemaking, one manufacturer asserted that the requirement that the equivalent federal model being sold in California must meet California OBD II and evaporative emissions requirements was, with respect to the 2005 model year, inconsistent with CAA section 202(a) in light of the lead time provisions in CAA section 202(a)(3)(C). We discuss why the commenter is incorrect on pages 9-12 of the Final Statement of Reasons in that rulemaking (Item 24 in the Attachments to this letter).

**Consistency of test procedures.** We are not aware of any instances in which a manufacturer is precluded from conducting one set of tests on a motor vehicle to determine compliance with both the California and federal procedures. One of the elements of the LEV II rulemaking was adoption of CAP 2000 certification requirements

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<sup>8</sup> International Harvester Company v. Ruckelshaus, 478 F.2d 615, 640 (D.C. Cir., 1973). See 46 F.R. 18887, 18895-6 (May 3, 1984).

Honorable Christine Todd Whitman  
May 30, 2001  
Page 22

virtually identical to those adopted last spring by U.S. EPA (64 F.R. 23906 (May 4, 1999)). This cooperative effort by our two agencies has reduced test program inconsistencies.

The Tier 2 regulations incorporate by reference California's exhaust emission test procedures for HEVs and ZEVs. (40 CFR §86.1811-04(n).) Although the Tier 2 regulations do not use the reactivity adjustment factor (RAF) mechanism developed in our LEV regulations (see 65 F.R. 6793-4), that does not affect a manufacturer's ability to conduct a set of tests that can be used for certification to the federal and California standards. There remain test condition differences for evaporative emission testing under the federal and California programs. U.S. EPA requires a more volatile gasoline test fuel having a Reid vapor pressure (RVP) of 9.0 pounds per square inch and a test temperature of 95° F, while California allows a less volatile gasoline test fuel meeting the RVP standard of 7.0 psi in the Phase 2 California reformulated gasoline standards but requires a more severe test temperature of 105° F. However, California allows a manufacturer to conduct evaporative emission testing using the federal test procedures as long as the federal gasoline test fuel is used in both evaporative and exhaust testing (California Evaporative Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles, Part III. Section G).

## VI. Conclusion

Based on the foregoing, I respectfully request that you grant a waiver of preemption for the LEV II amendments and the LEV II follow-up amendments. Listed below are the rulemaking documents pertaining to the regulations covered by this request. Given the breadth of the LEV II rulemaking, our complete LEV II rulemaking file contains more than the usual number of documents, including originally-proposed, modified, and final versions of the regulations and the 12 incorporated test procedures and other documents. The various versions of the incorporated documents have all been posted on the ARB's Internet site for the LEV II rulemaking – [www.arb.ca.gov/regact/levii/levii.htm](http://www.arb.ca.gov/regact/levii/levii.htm). Where indicated on the following list, we are not including hard copies of various attachments that are available at the LEV II rulemaking Internet site. In one instance (Item 23) we are handling documents in the LEV II follow-up amendments in the same way, with the documents available at [www.arb.ca.gov/regact/mdv-hdge/mdv-hdge.htm](http://www.arb.ca.gov/regact/mdv-hdge/mdv-hdge.htm). Please let me know if you would like to have hard copies of these omitted documents transmitted to you. We do attach hard copies of all of the regulations and incorporated documents in their finally effective form.

### Materials from the LEV II Rulemaking

1. Public Hearing Notice, dated September 8, 1998;
2. Staff Report: Initial Statement of Reasons for Proposed Rulemaking, with Appendices A through I;
3. Transcript of the November 5, 1998 Hearing;
4. Copy of Slides for Staff Presentation;
5. Resolution 98-53, dated November 5, 1998, (Attachments A through M, all of which are included in the Staff Report Appendices with Item 2 above, are not separately included with this letter; Attachment N is included);
6. Notice of Public Availability of Modified Text and Supporting Documents and Information, with Attachments I and II, posted March 26, 1999, and mailed by April 15, 1999;

The complete text of The Proposed Regulation Order with Modified Text, and 15-Day Notice versions of the incorporated documents, are contained on the LEV II Internet site;

7. Second Notice of Public Availability of Modified Text with Attachment I, posted May 25, 1999, and mailed by June 1, 1999;

The complete text of The Proposed Regulation Order with Modified Text, and Second 15-Day Notice versions of the incorporated documents, are contained on the LEV II Internet site;

8. Executive Order G-99-059, dated August 5, 1999 (Attachments A through M are available on the LEV II Internet site);
9. Final Statement of Reasons for Rulemaking, Including Summary of Comments and Agency Responses;
10. Final Regulation Order, as filed with the Office of Administrative Law September 25, 1999;

The complete text of the incorporated documents as filed with OAL September 25, 1999, are contained on the LEV II Internet site;

11. October 27, 1999 Memorandum from ARB Senior Staff Counsel Thomas Jennings to OAL Staff Counsel Barbara Eckard (with attachments);
12. October 28, 1999 Memorandum from ARB Senior Staff Counsel Thomas Jennings to OAL Staff Counsel Barbara Eckard (with attachments);
13. Fully endorsed STD 400 face sheet and Final Regulation Order as approved by OAL and filed with the Secretary of State October 28, 1999, containing new sections 1961 and 1962, title 13, CCR, and amendments to sections 1900, 1960.1, 1965, 1968.1, 1976, 1978, 2037, 2038, 2062, 2101, 2106, 2107, 2110, 2112, 2114, 2119, 2130, 2137-2140, and 2143-2148, title 13, CCR;
14. The final versions of the documents incorporated by reference in the regulations contained in the Final Regulation Order:

California Exhaust Emission Standards and Test Procedures for 1988 Through 2000 Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles, as amended August 5, 1999, incorporated by reference in § 1960.1(k), title 13, CCR;

California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles, as adopted August 5, 1999, incorporated by reference in § 1961(d), title 13, CCR;

California Exhaust Emission Standards and Test Procedures for 2003 and Subsequent Model Zero-Emission Vehicles, and 2001 and Subsequent Model Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck, and Medium-Duty Vehicle Classes, as adopted August 5, 1999, incorporated by reference in § 1962(e), title 13, CCR;

California Evaporative Emission Standards and Test Procedures for 1978-2000 Model Motor Vehicles, as amended August 5, 1999, incorporated by reference in § 1976(c), title 13, CCR;

California Evaporative Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles, as adopted August 5, 1999, incorporated by reference in § 1976(c), title 13, CCR;

California Refueling Emission Standards and Test Procedures for 1998-2000 Model Motor Vehicles, as amended August 5, 1999, incorporated by reference in § 1978(b), title 13, CCR;

California Refueling Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles, incorporated by reference in § 1978(b), title 13, CCR;

California Assembly-Line Test Procedures for 1998-2000 Model-Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles, as amended August 5, 1999, incorporated by reference in § 2062, title 13, CCR;

California Assembly-Line Test Procedures for 2001 and Subsequent Model-Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles, as adopted August 5, 1999, incorporated by reference in § 2062, title 13, CCR;

California New Vehicle Compliance Test Procedure, as amended August 5, 1999, incorporated by reference in § 2101(b), title 13, CCR;

California Motor Vehicle Emission Control and Smog Index Label Specifications, as amended August 5, 1999, incorporated by reference in § 1965, title 13, CCR; and

California Non-Methane Organic Gas Test Procedures, as amended August 5, 1999, incorporated by reference in § 1960.1(g)(1) note (3) and (h)(2) note (3), title 13, CCR, and in California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles, as adopted August 5, 1999, incorporated by reference in § 1961(d), title 13, CCR.

#### **Materials from the LEV II Follow-up Rulemaking**

15. Public Hearing Notice, dated October 10, 2000;
16. Staff Report: Initial Statement of Reasons for Proposed Rulemaking, with Appendices A (Final Regulation Order) through C;
17. Proposed amendments to the California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles, incorporated by reference in § 1961(d), title 13, CCR, as posted October 20, 2000, on the LEV II Follow-Up Amendments Internet site, [www.arb.ca.gov/regact/mdv-hdgc/mdv-hdgc.htm](http://www.arb.ca.gov/regact/mdv-hdgc/mdv-hdgc.htm);
18. Transcript of the December 7, 2000 Hearing;

19. Copy of Slides for Staff Presentation;
20. Resolution 00-45, dated December 7, 2000 (only Attachment E is separately included with this letter – Attachment A is identical to Attachment A to the Staff Report provided in Item 16 above, Attachments B and C pertained to amendments to the heavy-duty engine emission standards not covered by this waiver request, and Attachment D is identical to the document provided as Item 17 above);
21. Notice of Public Availability of Modified Text and Supporting Documents and Information, with Attachments I and II, made available starting December 8, 2000;
22. Proposed modified amendments to the California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles, incorporated by reference in § 1961(d), title 13, CCR, as posted December 8, 2000, on the LEV II Follow-Up Amendments Internet site, [www.arb.ca.gov/regact/mdv-hdge/mdv-hdge.htm](http://www.arb.ca.gov/regact/mdv-hdge/mdv-hdge.htm);
23. Executive Order G-00-069, dated December 27, 2000, (Attachments A through D are available on the LEV II Follow-Up Amendments Internet site);
24. Final Statement of Reasons for Rulemaking, Including Summary of Comments and Agency Responses;
25. Memorandum from ARB Senior Staff Counsel Thomas Jennings to OAL Senior Staff Counsel David Potter dated April 30, 2001 (with attachments);
26. Fully endorsed STD 400 face sheet and Final Regulation Order as approved by OAL and filed with the Secretary of State April 30, 2001, containing amendments to sections 1958.8 and 1961, title 13, CCR (only the amendments to section 1961 are covered by this waiver request);
27. A copy of the complete text of section 1961, title 13, CCR, showing the amendments made in the Final Regulation Order provided in Item 26 above; and
28. A copy of the complete text of the following document incorporated by reference in the Final Regulation Order provided in Item 26 above:  
  
California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles, as adopted August 5, 1999, incorporated by reference in § 1961(d), title 13, CCR.

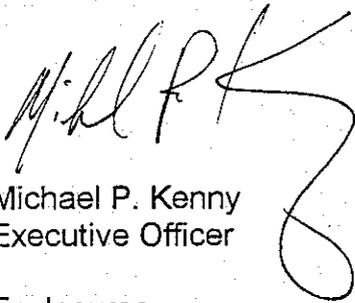
Honorable Christine Todd Whitman

May 30, 2001

Page 27

If you need additional technical information on this item, please contact Steve Albu, Chief of the Engineering Studies Branch of the Mobile Source Control Division, at (626) 575-7010. You may address legal questions to Thomas Jennings, Senior Staff Counsel, at (916) 323-9608.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael P. Kenny". The signature is stylized with a large, sweeping flourish at the end.

Michael P. Kenny  
Executive Officer

Enclosures