UPDATED INFORMATIVE DIGEST

California Regulations and Certification Procedures for Light-Duty Engine Packages for Use In Light-Duty Specially Constructed Vehicles for 2012 And Subsequent Model Years

Sections Affected: This action adopts new Article 1.5, Light-Duty Engine Packages for Use in Light-Duty Specially Constructed Vehicles, Title 13, California Code of Regulations sections 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, and 2218, and the following incorporated documents: "California Certification Procedures for Light-Duty Engine Packages for Use in Light-Duty Specially Constructed Vehicles for 2012 and Subsequent Model Years"; "California 2001 Through 2014 Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2009 Through 2016 Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," as amended March 22, 2012; "California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," as adopted March 22, 2012; "California Non-Methane Organic Gas Test Procedures," as amended March 22, 2012; and "California Evaporative Emissions Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles", adopted August 5, 1999, as last amended March 22, 2012.

Background: California Vehicle Code section 580 defines a specially constructed vehicle (SPCNS) as a vehicle built for private use, not for resale, and not constructed by a licensed manufacturer or remanufacturer. A SPCNS may be built from (1) a kit; (2) new or used, or a combination of new and used, parts; or (3) a vehicle reported for dismantling, as required by Vehicle Code Section 5500 or 11520, which when reconstructed does not resemble the original make of the vehicle dismantled. A SPCNS is not a vehicle that has been repaired or restored to its original design by replacing parts. SPCNSs do not include restorations of actual vintage vehicles, such as an old vehicle rebuilt to its former specifications.

Traditionally, SPCNSs have been a hobby-driven market. Hobbyists who build SPCNSs have passion for their vehicles, and consider the cars they build an art form. There are thousands of SPCNSs registered in California, with many more being built in garages and shops, and they are an integral part of California's car culture.

Because many hobbyists building SPCNSs desire to replicate older vehicles, they may use actual uncontrolled engines removed from old vehicles or new uncontrolled crate engines intended to be similar to those from older vehicles. In addition, hobbyists also use new uncontrolled crate engines in SPCNSs for improved performance and reliability over older, used engines. Therefore, SPCNSs are often considered uncontrolled emissions vehicles, or uncontrolled vehicles. An uncontrolled vehicle is a vehicle manufactured before emission control regulations took effect and can emit up to 200 times more emissions than a vehicle meeting current emission standards.

Emission Certification of Light-Duty Vehicles

Before any new vehicle can be sold in California, it must first be certified to ARB's current emission standards. Certification for light-duty vehicles is granted annually to individual engine families and is good for one model year. Light-duty vehicle emission certification is based on the entire vehicle's emissions, including evaporative emissions, not just the vehicle's engine emissions. Light-duty vehicle certification includes durability and emissions testing of a certification vehicle (a vehicle that represents the planned production vehicle). That is, manufacturers must test certification vehicles that are equipped with specific engines, transmissions, and emission control systems to demonstrate that their vehicles meet applicable certification requirements, including not emitting above specified levels of exhaust and evaporative emissions for the vehicle's useful life, and comply with on-board diagnostic systems and anti-tampering requirements, etc.

Light-duty manufacturers may apply for aftermarket exemptions for engines intended for engine changes and engine replacements if they differ from the originally certified engine configuration. However, the engines obtaining aftermarket exemptions are typically limited to older vehicles. Aftermarket exemption means the part exempted does not make emissions worse, as explained further below.

A vehicle's engine and transmission configuration can have a dramatic effect on a vehicle's emissions. New SPCNSs present unique challenges regarding emissions compliance. Unlike production vehicles, that are equipped with known configurations of engine, transmission, and emission control system, SPCNSs may be equipped with components from various manufacturers in a multitude of configurations. For example, a hobbyist is allowed, under existing law, to produce an SPCNS that incorporates an engine from a California-certified Ford light-duty truck mated with a Chevrolet transmission in a Chrysler truck chassis. Because this configuration has never been test by any one manufacturer, nor ARB, nor the United Stated Environmental Protection Agency (U.S. EPA), it is impossible to authoritatively determine the SPCNS's emission levels.

Aftermarket Parts Exemption for New Light-Duty Engines

In 2009, General Motors approached ARB with a new engine package created from their certified 2010 Camaro, called the emissions compliant hot rod (E-ROD). General Motors requested ARB approve the new engine package for sale in new kit cars. However, there were no provisions in the current new vehicle emission control regulations that would allow ARB to certify the engine package. General Motors moved forward and introduced the E-ROD at the Specialty Equipment Manufacturers Association (SEMA) show in November 2009 with the marketing campaign focusing on emissions compliance and performance. In 2010, General Motors again approached ARB to consider alternatives for E-ROD engine package as an engine change. ARB was able to certify the engine package through an aftermarket parts exemption; however the engine package was limited to installation in 1995 and older model year

vehicles, and requires complete removal of the stock engine, including its exhaust and evaporative canister and replacement with the E-ROD engine package.

SPCNS Vehicle Registration

SPCNS must be registered with the Department of Motor Vehicles (DMV) before they can be legally driven on the road in California. The current DMV registration process for SPCNS includes inspections by the California Highway Patrol, and the Bureau of Automotive Repair (BAR) and Smog Check tests for most 1976 and newer model year SPCNSs.

Senate Bill 100

Health and Safety Code section 44017.4 (enacted by SB 100 in 2001, Johannessen), provides that the first 500 owners of SPCNSs each year can choose, for purposes of the BAR inspection, whether the inspection will be based on the model year of the engine, or on the vehicle model year. If the inspection is based on the engine model-year, the referee shall require "only those emission control systems that are applicable to the established engine model-year and that the engine reasonably accommodates in its present form." If the inspection is based on the vehicle model year, the referee shall require "only those emission control systems that are applicable to the established model-year and that the vehicle reasonably accommodates in its present form." The referee must assign a 1960 model-year to an engine in an SPCNS that does not sufficiently resemble a previously manufactured engine or vehicle.

The demand for the SB 100 Certificate of Sequence has exceeded the 500-vehicle limit per calendar year every year since SB 100 was adopted, with Certificates sometimes running out in January. All subsequent SPCNSs beyond the 500 allowed by SB 100, referred to as "501st vehicles", would be assigned the same model year as the calendar year in which the registration application is submitted. For example, the DMV would assign a 2011 model year to the 501st and later SPCNS being initially registered in 2011. Such vehicles would then be required to comply with the emission requirements for the year of registration and will be subject to future Smog Check inspections on a biennial basis. Hobbyists who find themselves unable to get a number through the Certificate of Sequence process currently must wait until the following year to apply for registration when the 500-vehicle limit count restarts or meet current year Smog Check requirements, which is in most cases impractical. Hence, the 500-vehicle limit has practically constrained the number of SPCNSs able to be registered each year. Whether or not a specific SPCNS qualifies for registration under SB 100, a BAR referee must conduct a visual inspection to ascertain whether the SPCNS is equipped with the required emission control system.

ARB staff developed an optional certification regulation and procedures for new light-duty engines for use in specially constructed vehicles. The regulation and procedures create a path for manufacturers to certify engine packages, that when placed into an SPCNS, would meet new vehicle emission standards, and enable the vehicle to meet

Smog Check requirements. The regulation and procedures do not impose any requirements on engine manufacturers or hobbyists. Certifying engine packages via the new regulations and procedures is optional for engine manufacturers, and hobbyists are not required to choose certified engine packages. The regulation and procedures also will not affect the current registration process for SPCNSs, nor change the 500 vehicle limit or model year assignment process allowed under SB 100.

Description of Regulatory Action:
The Notice of Public Hearing to consider the adoption of a regulation and associated certification procedures for new engines for use in light-duty specially constructed vehicles was published on September 28, 2011, and the Staff Report: Initial Statement of Reasons (Staff Report) for the rulemaking action was also posted on ARB's rulemaking website on that date at: http://www.arb.ca.gov/regact/2011/spcn11/spcn11.htm. At its November 17, 2011 meeting, the Board adopted Resolution 11-38, which approved for adoption the proposed regulation and associated certification procedures.

The regulation and associated certification procedures consist of the following major requirements:

- A demonstration of compliance with applicable exhaust and evaporative emissions standards by testing an engine installed in a "worst case" (in terms of emissions) vehicle. In determining a worst case vehicle, the manufacturer is to consider the following criteria: engine displacement, vehicle test weight, vehicle road load, vehicle frontal area, calibration, emission control system configuration and calibration, transmission, and engine speed to vehicle speed (N/V) ratio. Typically, the worst case vehicle is the vehicle with the highest vehicle road load within the highest test weight class as a "worst case" vehicle.

- Supplying critical emission components with each engine package, including an ECM, catalytic converter(s), exhaust gas recirculation (EGR) valve, intake and exhaust manifolds, oxygen sensors, mass airflow sensors and housing, evaporative emissions canister, purge control valve (PCV), purge logic, and flow diagnostics. These components are consistent with exhaust emission controls required for new vehicles.

- An on-board diagnostic (OBD) system that is compliant with modified OBD II system requirements.

- Emissions warranty and recall provisions that are similar to those for new passenger cars.

- Written instructions to the ultimate purchaser and/or installer containing detailed instructions for proper installation of the certified engine package.

- A label to be affixed to a fully assembled vehicle that clearly states the engine is intended only for installation in an SPCNS.

- Recordkeeping and installation warranty requirements for installers of certified engine packages.

Comparable Federal Regulations:
The Federal Environmental Protection Agency (U.S. EPA) does not have regulations applicable to motor vehicle engines used in SPCNSs. However, the U.S. EPA's current kit car policy, (available at http://www.epa.gov/oms/imports/kitcar.htm) issued on July 8, 1994, clarified policy concerning the regulation of imported and domestically produced kit cars and kit car packages.

U.S. EPA's policy only applies to kits or assembled kit cars. It provides that the engine of a kit car must be used or used and rebuilt, in order for U.S. EPA to consider an assembled kit car or complete kit car package to be a rebuilt vehicle of a previously certified configuration that is covered by the certificate of conformity that U.S. EPA issued for that certified configuration.

However, U.S. EPA does not have a mechanism for preventing kit cars not in compliance with their policy from being registered and driven. Hence, kit cars not complying with U.S. EPA's policy are regularly registered in California and other states.

Changes to Underlying Laws:
There have been no changes to the statutory authority governing adoption of this regulation.

Changes to the Effect of the Regulation:
The adopted regulation and certification procedures will result in more LEV II and LEV III compliant SPCNSs. Additionally, manufacturers now have a path to certifying new light-duty engines for intended for use in SPCNS that was not previously available.

Changes to the Proposed Regulation Since the Publication of the Notice:
ARB conducted one 15-day change comment period pursuant to Government Code section 11346.8. The most significant of these post-hearing modifications was to specify that 2012 through 2014 model year certified engine packages must demonstrate compliance with LEV II exhaust emission standards and associated test procedures, that 2015 through 2019 model year certified engine packages may demonstrate compliance with either LEV II or LEV III exhaust emission standards, and that 2020 and subsequent model year certified engine packages must be certified to the LEV III exhaust emission standards. The post-hearing modifications also clarified issues surrounding warranty repairs.