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3 AUG. 2013, amended

California Air Resources Board
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CC: Board Members, Mary D. Nichols, Daniel Sperling, Phillip Serena, Barbara Riordan, Sandra Berg, John R. Balmes MD, Hector De La Torre, Alexander Sherriffs, M.D., Judy Mitchell, Ron Roberts, John Giola.

Re: Proposed Amendments to Alternative (Streamline)
Fuel Conversion Certification Procedures
for New and In-Use Vehicles and Engines

1. The proposed amendments will be heard and approved at the Sept. 26, 2013 meeting. A proposed preamble for the amendments is:

A. California needs to continue maximum efforts to attain clean air quality and reduce the use of gasoline and diesel as primary vehicle fuels. The state economy has major deficiencies with primary fuel costs at \$4.00-\$4.50 per gallon, 15% unemployment, \$88 billion state government debt and an 8% sales tax which is the highest in the United States.

B. There are 23 million gasoline fueled sedan, light duty and medium duty pickup trucks in California with an average consumption of 20 miles per gallon and 12,000 miles per annum. Each vehicle utilizes an estimated 600 gallons per annum based on 12,000 miles travel. The estimated gasoline consumption is 13 billion 800 million gallons. The fuel cost savings of dual fuel propane-gasoline is an estimated \$27 billion per annum with

98% propane and 2% gasoline. Dual fuel systems operate with cold engine startup on gasoline and convert to propane when 100°F is attained.

- C. A health cost savings is estimated at \$1 trillion per annum because of clean air quality by use of propane motor fuel. Propane is a 5% component of natural gas. The San Joaquin-Central basin of California from Bakersfield to Merced has an estimated 100% asthma rate in young population from age 3 to 30.
- D. There are an estimated 1.2 million heavy duty diesel fueled vehicles in California with an average fuel consumption of 8 miles per gallon and 750,000 miles per annum travel for a fuel consumption of 94,000 gallons per vehicle, that requires 112 billion 800 million gallons. A reduction of 33 billion, 840 million gallons can be developed with dual fuel mixed air propane-diesel systems with increases in health for young persons and decreasing health care costs due to asthma. A fuel cost savings will be \$75 billion from \$4.00 per gallon diesel to \$2.00 per gallon propane. Dual fuel propane-diesel systems utilize 30% propane and 70% diesel.
- E. Existing procedures preclude improvement in air quality and economic savings to vehicle owners. Existing procedures require testing of 18,100 different engine manufactures and engine groups. Existing procedures require system testing at 4,100 miles and 100,000 miles prior to approval. Existing procedures require numbered designation of each bolt, screw, wire and component approval. Existing procedures require cost of each bolt, screw, wire and component. Existing procedures designate a maximum replacement cost for of each bolt, screw, wire and component. All existing procedures shall be modified so as to conform to the proposed amendments.

Proposed Amendments:

WE PROPOSE THAT THE FOLLOWING AMENDMENTS BE ADOPTED:

1. Streamline ARB's new and in-use alternative fuel conversion approvals so that 25 million gasoline fueled and diesel fueled vehicles can be converted within two (2) years to dual fuel propane-gasoline and propane-diesel fueled engines.
2. Existing approval procedures SHALL be revised to require system testing only on one each cylinder (4, 6, 8) variation and one each OBD type only (OBD I & OBD II) at 4,100 miles, applicable to coincident approval for all engine groups, all model groups and all years of vehicle manufacturers, previously approved as new vehicles certifications of the Board. Deterioration factors (DF) for certification at 4,100 miles SHALL be precluded. PEMS (Portable Emission Devices) for on-road equipment SHALL be precluded. PEMS for stationary and off-road vehicles SHALL be included.

3. Existing approval procedures SHALL be revised to require a 100% five (5) year, 100,000 mile warranty on parts and labor.
4. Existing approval procedures SHALL be revised to preclude cost of systems, replacement costs and maximum replacement costs as these are part of private enterprise vendor-client contracts.
5. Existing approval procedures SHALL be revised to require identification of major components only in 3d images and no dimensions.
6. Existing approval procedures SHALL be revised to require sale to and installation by manufacturer licensed installers only and SHALL preclude direct sales to 3rd party vendors and the public.
7. Existing approval procedures SHALL be revised to require bi-annual update education for licensed installers at expense of the manufacturers. Manufacturers shall furnish to the Board update education information and attendance certification for each installer.
8. Existing approval procedures for dual fuel propane-gasoline and propane-diesel dual fuel engines SHALL be revised to include a requirement for a maximum 3% carbon content in motor oil by color verification on dual fuel engines to be verified by BAR at emission testing intervals.
9. Existing procedures SHALL be revised to require ARB staff to prepare monthly information print and email information notices on dual fuel installations, vehicle types, systems problems, fuel consumption, emission failures and monthly mileage data under direction of a Registered Mechanical Engineer. Data shall be available on the ARB website.
10. Existing procedures SHALL be revised to require suspension of Executive Order approval for new installations when there has been significant failure in installed systems.
11. Existing processing procedures SHALL be revised so as to require ARB staff to review applications, simultaneously by all departments for a 28 days response to applicant.
12. Existing processing procedures SHALL be revised so as to require ARB staff to utilize supplemental email communication procedures with electronic signatures in addition to original postal copies.
13. Existing processing procedures SHALL be revised to delete the requirement for Aftermarket Manufacturers to receive permission from the Original Engine Manufacturers because of non-feasibility and should be deleted. OEM agencies in

California are cohesive in their programs to continue gasoline engines only, except for hybrids.

14. The requirement that ARB staff will identify specific test groups planned for the year is not feasible and should be deleted, because ARB staff will identify several hundred-test groups, which is unfeasible. Aftermarket manufacturers should only have to identify “one each” of the specific test groups for each engine type which is economically feasible on 4, 6 & 8 cylinder groups in OBD I and OBD II.
15. The requirement for emissions testing at State Referee Stations only is not feasible because State Referees are prejudiced against dual fuel certifications. Emissions testing should be modified to either private BAR licensed stations or State Referee Stations.
16. The requirement for dual EPA and ARB certifications is bureaucratic misadministration because California Environmental agencies have been designated by EPA to perform environmental testing and certification. The ARB is fully qualified to perform the necessary functions.
17. The requirement to resubmit applications each year is SHALL be revised to resubmittal only when the OEM manufacturer introduces new OBD electronic systems.
18. Emission testing requirements should be the same as utilized at BAR licensed stations. Separate testing requirements by ARB and BAR are not functional to “streamlining” of the existing procedures.
19. Global warming score as additional test IS not performed at BAR licensed stations and is not functional to “streamlining” of the existing procedures. Emission test parameters SHALL be the same as approved for the original OEM or “testing chaos” will develop and introduction of dual fuel aftermarket engines will not occur. A result will be continuous utilization of gasoline for passenger vehicles, light duty trucks and medium duty trucks.
20. Requirement for recertification for each model year is not functional to “streamlining” of the existing procedures. Applications SHALL only have to be resubmitted when the OEM manufacturer introduces new OBD electronic systems.
21. Sealed Housing for Evaporative Determination (SHED) testing for evaporative emissions Stations are not functional to “streamlining” of the existing procedures. BAR licensed testing stations are equipped only for Spot testing with emission probes.
22. On-board Refueling Vapor Recovery (ORR) testing for refueling emissions is not a function of the vehicle systems. Refueling vapor recovery is performed by equipment at the fueling stations. The requirement for vehicles is not functional and should be made a part of fueling station requirement.

23. Durability Demonstration should be a function of emission testing at BAR licensed stations and license plate renewal of vehicles. The proposed 5 year, 100,000 mile 100% warranty is functional to protection of the user and the environment. Proposed requirements for accumulation of mileage on a prototype test vehicle to 100,000 and 180,000 miles is not functional. Bench testing for 100,000 miles will require 5000 gallons of propane. Bench testing for 180,000 miles will require 9000 gallons of propane.

24. A requirement for periodic exhaust & evaporative emission tests during mileage accumulation other than at vehicle bi-annual smog testing is not functional. Testing procedures should be the same as BAR mandatory testing intervals.

25. Durability Demonstration – Evaporative System

a. Evaporative emission control system component bench aging, or request assigned deterioration factor and the below requirements are not functional to “streamlining” of the existing procedures. Evaporative emissions SHALL conform to test procedures performed at BAR licensed stations.

b. Base engine and retrofitted engine performance characteristics, such as horsepower & torque curves, fuel feed curves, air/fuel calibration control, catalyst temperature traces and other technical factors are a function of the competitive manufacturers information data. The primary parameters for regulatory control should be continuous successful function of aftermarket installed equipment to pass emission testing. A lack of functional engine power will be a cause for rebate to the user under the 5 year, 100,000 mile 100% warranty.

c. Catalyst temperatures of engines are performed by the OEM manufacturer when seeking an Executive Approval order. Additional engine temperature testing is a function of the emissions test. Propane in the fuel system requires additional cooling to that attained by replacement four (4) core copper radiators and air cooling. Additional engine temperature tests by the “Aftermarket Manufacturer” SHALL be required only when said test are a part of the emission tests administered by the BAR at Licensed Testing Stations.

d. One-time demonstration of retrofit system durability for: Emissions, calibration, and catalyst temperature data at 4,000 miles is functional Useful life demonstration at 100,000 and 180,000 miles is prohibitive to introduction of dual fuel aftermarket systems. The proposed 5 year, 100,000 mile 100% warranty and regulatory control for installation suspensions with recall of installed systems when new problems develop, is within historical consumer protection guidelines.

e. A requirement for prior to releasing a retrofitted vehicle to end user, installer shall submit the vehicle to the Bureau of Automotive Repair (BAR) Referee Smog Check

Station for inspection and testing and obtains certificate of compliance is overzealous regulatory compliance. New and used OEM vehicles are not required to process thru State Testing Stations, because State Referees are prejudiced against dual fuel certifications. Emissions testing prior to release should be modified to either private BAR licensed stations or State Referee Stations.

26. Deterioration factors are a misnomer and should be deleted. The dual fuel modified engines shall meet the original OEM emission certifications or not be approved for vehicle renewal licensing. Emission testing at BAR licensed testing stations is the core of “streamlining” the existing procedures.

KLS staff and Autogaz staff are available for consultation questions on the preceding.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Neil Prescott", is positioned above a horizontal line.

Neil Prescott, RCE