

California Environmental Protection Agency



**FINAL STATEMENT OF REASONS FOR RULEMAKING
Including Summary of Comments and Agency Responses**

**ADOPTION OF AMENDMENTS TO THE VERIFICATION PROCEDURE, WARRANTY
AND IN-USE COMPLIANCE REQUIREMENTS FOR IN-USE STRATEGIES TO
CONTROL EMISSIONS FROM DIESEL ENGINES**

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I. INTRODUCTION

On January 28, 2010, the Air Resources Board (ARB or the Board) conducted a public hearing to consider proposed amendments to the *Verification Procedure, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines* (the Procedure), title 13, California Code of Regulations (CCR), sections 2700 through 2710. The proposed amendments and “Staff Report: Initial Statement of Reasons for Proposed Rulemaking” (ISOR) were released for public comment on December 10, 2009, along with the “Notice of Public Hearing to Consider Amendments to the Verification Procedure, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines”. After considering information provided by ARB staff in the ISOR and at the public hearing, and following comments submitted by the public during the 45-day comment period and at the public hearing, the Board approved the proposed amendments with modifications as specified in Resolution 10-3.

This Final Statement of Reasons (FSOR) summarizes the purpose of the Procedure, the modifications to the original proposed amendments, the comments received during the 45-day comment period, at the public hearing, and during the subsequent 15-day comment period, ARB’s responses to those comments, and the economic impacts of the adopted amendments and modifications. Although a summary of the originally proposed text is not included here, a complete description with reasoning can be found in the ISOR. The ISOR and “Notice of Public Availability of Modified Text” are incorporated herein by reference.

In 1998, after a ten-year review process, ARB identified diesel particulate matter (PM) as a toxic air contaminant (title 13 CCR section 93000). A toxic air contaminant is an air pollutant which may cause or contribute to an increase in mortality or serious illness, or which may pose a present or potential hazard to human health (Health and Safety Code section 39655). Considering the amount of diesel PM emitted into California’s air, its distribution over large regions, and the associated cancer risks, diesel PM is the most harmful toxic air contaminant in the state. ARB began its efforts to reduce widespread public exposure to diesel PM by adopting the Diesel Risk Reduction Plan (DRRP) in 2000. The DRRP provided multiple avenues for reaching emission reduction goals, one of which was to install diesel emission control strategies (DECS) on in-use vehicles and equipment. As a means to ensure that DECS would provide real and durable emissions reductions while also providing protections to fleets purchasing them, the Board adopted the Procedure in May 2002. Since its adoption, the Procedure has enabled rigorous evaluation of DECS. Since DECS must be verified to be eligible for installation on in-use vehicles and equipment subject to fleet regulations, verification under the Procedure is the primary avenue for DECS manufacturers to become participants in the diesel emission control market in California.

The Procedure evaluates DECS intended for on-road, off-road (including portable), and stationary engines and classifies them according to PM and oxides of nitrogen (NOx) emissions reduction levels. After the Board approved amendments to the Procedure in

2008, staff identified the need to address installation and maintenance issues in the field and to provide further clarifications regarding testing requirements and supporting documents for verification. The proposed amendments will improve the verification process in these areas and therefore provide stronger support for California's fleet regulations.

The proposed amendments were brought before the Board at the public hearing on January 28, 2010 with suggested modifications to the original proposal. The Board approved the proposed amendments with modifications and further directed the Executive Officer to make the text of the modified amendments available to the public for a supplemental written comment period of no less than 15 days (15-day comment period) as required in section 11346.8 of the Government Code and specified in Resolution 10-3. The "Notice of Public Availability of Modified Text" was published on September 22, 2010, and comments from the public were considered through October 7, 2010. No new comments related to the modifications were received during the 15-day comment period. During the 45-day comment period, comments were received although some were not related to the proposed amendments.

The Board has determined that no alternative considered by the agency would be more effective in carrying out the purpose for which the regulatory action was proposed or would be as effective and less burdensome to affected private persons than the action taken by the Board.

Pursuant to Government Code sections 11346.5(a)(5) and 11346.5(a)(6), the Executive Officer has determined that the proposed regulatory action would not create costs or savings to any State agency or in federal funding to the State, costs or mandate to any local agency or school district, whether or not reimbursable by the State pursuant to Government Code, title 2, division 4, part 7 (commencing with section 17500), or other nondiscretionary cost or savings to State or local agencies.

II. SUMMARY OF COMMENTS AND AGENCY RESPONSES – 45-DAY NOTICE OF PUBLIC HEARING

Oral Comments Received at the Board Hearing

At the January 28, 2010 hearing, oral testimony was received from:

Mr. Bill Gaines – Transfer Flow, Incorporated (Transfer Flow)
Dr. Rasto Brezny – Manufacturers of Emission Controls Association (MECA)
Mr. Tom Swenson – Cleaire Advanced Emission Controls (Cleaire)
Mr. Randal Friedman – United States Navy

Below is a summary of each oral comment made regarding the proposed regulatory actions, together with an agency response. The comments have been grouped by topic wherever possible. Comments, such as those made by Mr. Gaines of Transfer Flow

and Mr. Friedman of the United States Navy, which did not involve objections or recommendations specifically directed towards this rulemaking or to the procedures followed by ARB in this rulemaking are not summarized or responded to below.

A. DECS Maintenance Practices

1. Comment: We support modifications regarding routine maintenance for filters. However, we would like the modifications to specify the cleaning service provider's responsibility if they damage the system while performing routine maintenance. We would also support having a filter-cleaner registry. (MECA)
2. Comment: We have no issue with providing maintenance practices but the modifications should specify that the party that damages the device is responsible for repair costs. The manufacturer's warranty should not cover those damages. (Cleaire)

Agency Response: The staff disagrees with these comments. The Procedure currently identifies the scope of warranty coverage. DECS failures due to abuse, neglect, or improper maintenance are grounds for denial of coverage, regardless of the identity of the party causing the damage. The proposed amendments do not change this. As stated in the ISOR, the manufacturer may have grounds to deny a warranty claim if the end user does not properly maintain the DECS. The addition of clarifying text to the proposed amendments is unnecessary.

B. Pre-installation Compatibility Assessments

1. Comment: We would like some flexibility for installers to determine if a vehicle is eligible for installation. The proposed language requires installers to review specific documents such as oil consumption records and parts replacement records. According to our members, in most cases, oil consumption records are not available and this leaves the installer with no choice but to reject the vehicle. We suggest that the modifications include the flexibility to allow the installer to determine an appropriate assessment strategy based on their experience and to use other information to determine if a vehicle is appropriate for installation. (MECA)
2. Comment: Checking the oil consumption and maintenance records of each engine in each fleet for compliance with engine manufacturer requirements will be burdensome. We have provided some basic checks that can be done to determine if there are any gross issues with the engine, such as visible smoke and oil in the tailpipe. We encourage staff to look at that information and potentially adopt it. (Cleaire)

Agency Response: The staff agrees with these comments and proposed modifications to the proposed amendments in response to them. If available, oil records can be valuable in assessing if the engine is operating according to manufacturer specifications, but such records are not always available. The

proposed modifications would remove the blanket requirement of analyzing oil consumption records and instead require that a basic assessment of the candidate engine be performed that includes among other things, review of oil consumption and maintenance records (if available) as well as visual inspections for oil leaks, fuel contamination, tailpipe inspection, and exhaust plume evaluation. The modifications, included in the “Notice of Public Availability of Modified Text”, were made available for public comment in a 15 day-comment period. No comments were received.

1. Comment: We suggest that installers be able to use their experience from different fleets when assessing off-road vehicles and equipment. Off-road fleets rarely have more than five of the same vehicle and model and the ability to use information across fleets would save on cost. (MECA)

Agency Response: The staff disagrees with this comment. Data logging is a vital tool for assessing if an engine and application are appropriate for a particular DECS because precise conditions must be met in-use for DECS to perform as verified. Installers’ experience levels are relevant, but are no substitute for data logging. For example, a minimum temperature profile of the candidate engine is a common criterion for many verified technologies. Failure to ensure the application meets the required temperatures may result in DECS malfunction and/or DECS failure. Since end-users may purchase a DECS as a fleet rule compliance option, and may suffer significant financial hardship if a vehicle is out of service due to a malfunctioning DECS, rigorous, objective assessment of the candidate engine/vehicle and duty cycle information prior to the DECS sale and installation is critical for successful in-use retrofits. Similar engines and vehicles can have significantly different duty cycles, especially if used in different fleets which may have different operational and maintenance practices. Using information from vehicles without a common owner introduces additional variables and risks to the end-user. The current proposal ensures that the installer will directly assess the vehicles of each end-user’s fleet thereby limiting any representative engine/application to that which reflects the unique operations of each specific fleet. While there is some small risk and uncertainty associated with representative sampling within the same group of engines even within a common ownership fleet, this risk is increased when considering similar engines across different fleets. There must be strong assurance that the DECS are compatible with their vehicle applications and therefore, controlled flexibility of restricting representative sampling to a common ownership fleet is necessary. Again, an installer’s experience is no substitute for the type of objective data the amendments would require.

Written Comments Submitted During the 45-Day Comment Period

During the initial 45-day comment period, written comments related to the proposed rulemaking were received from the following interested parties. Most of these comments were also provided orally at the Board hearing, and have been summarized and responded to above.

Mr. Rasto Brezny - MECA
Mr. Tom Swenson – Cleaire
Mr. Glenn Luksik – Caterpillar Incorporated (Caterpillar)
Mr. Julian Imes – Donaldson Company, Incorporated (Donaldson)
Mr. Kevin Brown – Engine Control Systems Limited (ECS)
Mr. Craig Phillips - Ironman

In addition, comments were also submitted by the individuals listed below that did not involve objections or recommendations specifically directed towards the rulemaking or to the procedures followed by ARB in the rulemaking, or were comments in support of the regulatory action. These comments are not summarized or responded to below.

Marjorie Rivera – No Affiliation Stated
Barbara Graham - No Affiliation Stated
Richard LoGuercio - Town & Country Event Rentals
Ford Sebastian - No Affiliation Stated
Calvin Taylor - No Affiliation Stated
Steve Burris - Petroleum Recovery Services
Arleen Wallace - No Affiliation Stated
Hanna Hanson - No Affiliation Stated
James Hakeem - No Affiliation Stated
Mark Whittlesey - No Affiliation Stated
Tristen Anders - No Affiliation Stated
Dale Sarver - No Affiliation Stated
Kevin Nickerson - No Affiliation Stated
Bill Boyer - No Affiliation Stated
Jorge Estrada - No Affiliation Stated
Kevin Marcheschi - No Affiliation Stated
Brian De Grandis - No Affiliation Stated
Darren Lee - No Affiliation Stated
Charles Schuppe - No Affiliation Stated
William Richason - No Affiliation Stated
Jacob Kidd - No Affiliation Stated
Tom Gottlieb - No Affiliation Stated
John Schuricht - No Affiliation Stated
Matthew Gudorf - No Affiliation Stated
Dave Anderson - No Affiliation Stated
Jason Hawes - No Affiliation Stated
Michael Cosman - No Affiliation Stated
Chuck Edwards - No Affiliation Stated
Darryl Lankford - No Affiliation Stated
Louis Minette - No Affiliation Stated
Mr. Bill Gaines – Transfer Flow Incorporated
Rap Phillips - No Affiliation Stated
Jose Rodiles – No Affiliation Stated
Mark Freie - No Affiliation Stated
Jeff Solberg - No Affiliation Stated

Sheena Paez - No Affiliation Stated
John Chaney – No Affiliation Stated
David Zimmerman - No Affiliation Stated
David Searcy – Town & Country
Jacquelin Balogh - No Affiliation Stated

Below is a summary of the written comments submitted specifically directed towards the rulemaking or to the procedures followed by ARB in this rulemaking that were in addition to the oral comments made at the hearing, followed by an agency response. The comments have been grouped by topic.

C. DECS Maintenance Practices

1. Comment: The maintenance information manufacturers are required to give end users should be restricted to normal and routine maintenance. We have made a substantial investment in developing proprietary techniques for potentially recovering a damaged DPF. The maintenance language should specify that the manufacturer is not responsible for honoring the warranty on parts damaged by end-users or third party cleaning services. (Cleaire)
2. Comment: ARB and manufacturers should encourage record-keeping by end users when they conduct routine maintenance on their DECS and engine. End users should also be able to determine preventative and normal maintenance from atypical maintenance that requires direct support from the manufacturer or distributor. We believe fleets should be able to conduct preventative maintenance and clean their own filters after they have acquired proper equipment and training. For cases, such as a plugged filter, that require atypical maintenance procedures, the end user might go to a third party service that does not have the environmentally protective means of cleaning filters that have been contaminated with oil. (ECS)
3. Comment: We support the maintenance requirements in section 2706(h) but we're concerned with unqualified people cleaning the filters especially in cases where the engine and system have a history of improper maintenance and therefore require diagnosis by qualified personnel. Page 18 of the ISOR says the manufacturer can require that maintenance be performed by authorized personnel if the service is provided free of charge but that should be specified in the regulatory text and it should be limited to normal maintenance on engines in good condition. The normal maintenance could be determined for example by ash accumulation to be expected in a certain timeframe for a properly maintained engine. (MECA)

Agency Response: The staff agrees with these comments in part and disagrees with them in part as follows. The current regulation provides that warranty coverage may be denied for abuse, neglect, or improper maintenance. The staff believes that the proposed amendments are preferable because they would require end users to be given information on routine maintenance procedures so they can make an informed

choice of who to select to provide the service and what service to seek. Staff believes that if this information is clearly specified, there will be less chance of the DECS becoming damaged due to negligence or mishandling during routine maintenance procedures. To accomplish this, ARB proposed modifications requiring DECS manufacturers to provide information regarding proper routine maintenance were added to the proposed language in section 2706(h)(2) as summarized in this FSOR, Section III at page 16, below. None of this would involve providing proprietary information. The public was given 15 days to comment on the modifications. No comments regarding this modification were received.

1. Comment: The manufacturer and installer should not be held responsible for damage due to improper cleaning procedures done by a third party. (Caterpillar)
2. Comment: We would like language that specifies the responsibility of the maintenance and cleaning service provider for any damage during improper handling and that damage would not be covered under the manufacturer's warranty. (MECA)
3. Comment: The service provider needs to be responsible for the installation warranty. It seems illogical to hold an installer liable for an installation warranty if you allow others to take the DECS apart to clean the unit. (Ironman)

Agency Response: This comment was also presented orally to the Board during the public hearing held on January 28, 2010 and staff's response can be seen in this FSOR in Section II, Subsection A at pages 4 and 5, which is incorporated by reference here.

1. Comment: ARB should have a list of approved third party cleaners to help end users select a cleaning service. The third party cleaner should be required to record information at the time of cleaning such as date, equipment run hours and serial number and a description of the cleaning process. (Caterpillar)
2. Comment: We believe ARB should create a third party cleaner approval process to minimize the risk of damaging DECS. We have certified dealers that have the proper equipment for cleaning and have been trained on proper cleaning procedures. End users who want to do manufacturer approved cleaning need to work with the certified dealer for equipment and training. (Donaldson)
3. Comment: We believe that independent cleaning providers do not currently employ appropriate service, equipment, and quality assurance and that they return filters to end users that are not properly cleaned or even damaged. Therefore, we believe independent service providers should be required to register with the state and describe the equipment they use while servicing filters and that the register should be available on ARB's website. (ECS)
4. Comment: We would support a registry of cleaning service providers. The registry could be good for manufacturers, end-users, and ARB by identifying facilities that

manufacturers can train, identifying local facilities for end-users, and regulating facilities that handle toxic waste to make sure waste is properly disposed. (MECA)

Agency Response: The staff disagrees with these comments and believes that they would be burdensome and unnecessary. The proposed amendments require manufacturers to give end users specific information on not only how to properly maintain a DECS but also on how to determine if a DECS is properly maintained. This information gives the end user the knowledge necessary to determine the best means of maintaining their system and prolonging its useful life. Under the proposed amendments, if an end user chooses a third party to perform routine maintenance on its DECS, the end user will be able to determine if the maintenance was performed properly because of the information he or she receives in compliance with the proposal. Therefore, staff does not see the need in ARB forming a registry or approved list of cleaning service providers, which would be burdensome and unnecessary. Nothing prohibits DECS manufacturers from providing a list of approved service providers, however. In response to the comment regarding proper waste disposal, the ARB, through the verification program, does not have the authority to regulate waste disposal practices. Additionally, the Procedure currently requires the verified device manufacturer to include language in the owner's manual to assist end-users in determining the proper way to dispose of waste generated by the DECS, and that the disposal must be in compliance with applicable Federal, State, and local laws.

1. Comment: This proposed amendment requires applicants to disclose proprietary information. (Ironman)

Agency Response: Staff disagrees with this comment. Information on routine maintenance, which is essential for the proper operation of the DECS and for the prevention of potential damage to the engine, should not be proprietary. Further, staff has not received proof from any manufacturer that its routine maintenance procedures are proprietary.

1. Comment: We recommend that service providers be required to keep records showing that they have performed the service in the prescribed method of the manufacturer, record the amount of ash or PM removed, the method of doing the service and the method of disposing of hazardous materials. (Ironman)

Agency Response: Staff disagrees with this comment and believes it to be unnecessary. It might be a good business practice for service providers to keep service records but since end users have a choice in who provides them service, there is no guarantee that there would be continuity of records of the DECS' maintenance history. Instead of mandating end users to keep maintenance records, the current regulations require a warranty statement that encourages end users to keep maintenance records to protect their warranty. The product warranty also notifies the end user that the manufacturer may deny a warranty claim if the DECS has received improper maintenance. Further, staff modified the proposed amendments to require manufacturers to include language in the owner's manual that notifies the end user that

a failure to document proper DECS maintenance may be grounds for denial of a warranty claim. In response to the comment regarding proper waste disposal, the verification program does not have the authority to regulate waste disposal practices. Additionally, the Procedure currently requires the verified device manufacturer to include language in the owner's manual to assist end-users in determining the proper way to dispose of waste generated by the DECS, and that the disposal must be in compliance with applicable Federal, State, and local laws.

D. Pre-installation Compatibility Assessments

1. Comment: We recommend changing the minimum temperature logging requirement from 24 engine hours to 16 engine hours. In addition, we believe the logging frequency should be reduced from once every five seconds to once every 10 seconds. These changes would allow continued use of the current data loggers. The data loggers currently deployed log data whether the engine is on or off and can collect data for approximately 96 hours at a log frequency of once every 10 seconds. (Cleaire)
2. Comment: We recommend that there be differentiation in data logging requirements between on-road and off-road applications and PM and NOx reduction devices. It is extremely difficult to gather large amounts of data for off-road applications. The proposed 24 hours of data logging may take months to generate and will significantly delay implementation. In addition, receiving data once every five seconds versus once every 15 seconds will provide little, if any, valuable benefit. The data log is just a snap shot of data and customers may still use the engine in various applications. (Ironman)

Agency Response: The staff disagrees with these comments as follows. One purpose of the proposed amendments is to require a data log of a representative duty cycle of the vehicle or piece of equipment's operation. Diesel emission control strategies have a long useful life and the warranty can last up to five years. Considering this, exhaust temperature logs covering 24 engine hours represents a small sample of a vehicle's operation and duty cycle--the equivalent to three eight-hour work shifts. To reduce the logging time down to 16 hours would yield an even smaller in-use view and would therefore, increase risk and reduce assurance that the candidate vehicle is appropriate for a particular DECS installation, especially if the vehicle covers a variety of routes and/or performs various tasks. Twenty-four engine hours is the smallest timeframe necessary to log a representative exhaust temperature profile for on-road and off-road applications. Considering that temperatures are only data logged for a short period of time, a high resolution is needed to show a more accurate duty cycle and give greater confidence in its representation of the vehicle's actual duty cycle over a prolonged period of time. A frequency of once every five seconds is an appropriate frequency.

1. Comment: We would like to have a phase-in period for this requirement. We currently employ at least 500 data loggers that do not meet the technical requirements described in the proposed amendments. Assuming each data logger

costs \$1,500 to \$2,000, distributors are looking at a large investment in data loggers. This will also affect our clients' ability to be in compliance. (Ironman)

Agency Response: The staff disagrees with this comment as follows. The purpose of the proposed amendment is to ensure that appropriate equipment meeting a minimum standard necessary for data logging representative duty cycles is being utilized for all installations. The proposed specifications of the data logger are minimum standards to ensure that the DECS is appropriately applied. Historically, ARB has been diligent in creating a market of DECS that are reliable for end users and provide real emissions reductions at their verified levels. Because the expenses of removing and replacing DECS that are not suitable to the duty cycles of the vehicles they are installed on clearly outweigh the expenses of acquiring compliant data loggers, staff does not believe that a phase-in period for the data logging requirements is warranted. Moreover, data loggers, like other pieces of equipment have limited useful lives and must be replaced at some point.

1. Comment: Engine maintenance is the owner's responsibility and the burden of assessment as ARB described would require substantially more resources from the manufacturer. Therefore, we recommend that this amendment be modified to require a basic engine assessment which includes visual assessments for oil leaks in the tailpipe, assessment of the fuel sample, and assessment of the exhaust smoke. (Cleaire)
2. Comment: There should be some flexibility in pre-installation compatibility assessment. We also believe both the equipment owner and the installer should be required to keep pre-installation compatibility assessment documentation. (Donaldson)
3. Comment: The amendment requires that oil consumption records be used in the assessment but usually, the oil consumption records are not present. Moreover, we believe oil consumption records are an inappropriate measure of maintenance. Installers usually perform other visual assessments such as smoke opacity and color, crankcase emissions, oil leaks, and audibly detected combustion problems or valve leaks. We suggest the modifications incorporate these methods. (ECS)
4. Comment: Probably less than 25 percent of on-road fleets keep oil consumption records. The percentage is even lower for off-road fleets. In our experience, we have seen that most engine issues have been due to fuel injectors and the fuel system in general. The owner should be responsible for the engine's condition. Requiring that companies keep oil consumption records will not answer emission service issues. We suggest that the input from all parties be used to come up with various records of reasonably available data that may be used to satisfy this requirement. (Ironman)
5. Comment: The amendment regarding pre-installation compatibility assessment is needed but it requires manufacturers to look at oil consumption records and the

owner's compliance with engine manufacturer's recommended parts replacement schedules. Based on our member's experiences, oil consumption records are usually not available and an installer would have to pass on the installation based on the lack of records. We think the installer's experience in using other factors such as smoke opacity and color, oil in the exhaust, or inspection of injectors should determine whether an engine is appropriate for installation. The amendment should be flexible enough to allow this. Language should be added outlining the end user's responsibility in maintaining their engine. (MECA)

Agency Response: The comments regarding oil consumption records were also presented orally to the Board during the public hearing held on January 28, 2010 and staff's response, which is incorporated by reference here, appears in this FSOR in Section II, Subsection B above at page 5. In response to the comment suggesting that both the installer and the end user be required to keep pre-compatibility assessment documentation, the proposed amendment does require that the party conducting the pre-installation compatibility assessment provide the end user with pre-compatibility assessment information no later than the date of installation. The party conducting the pre-installation compatibility assessment is also responsible for keeping the assessment data logs since he or she is responsible for properly assessing the engine and determining if it is appropriate for a certain DECS. If questions later arise about the installation, staff may request all records that provide information about the pre-installation compatibility assessment. The staff disagrees with the comments requesting additional flexibility in conducting the compatibility assessment. Since this assessment is crucial for ensuring that DECS perform properly in use, it must be done rigorously and consistently as provided in the proposed amendments.

1. Comment: Many off-road fleets have few similar vehicles and the criteria would require data logging of most vehicles in the fleet at substantial cost to the end users. We would like installers to be able to use data across fleets for similar vehicles to reduce cost and improve efficiency. (MECA)
2. Comment: We believe the rule should group similar equipment being used in a similar use and not differentiate by common ownership. (Ironman)

Agency Response: These comments were presented orally to the Board during the public hearing on January 28, 2010. Staff's response, which is incorporated by reference here, can be found in this FSOR in Section II, Subsection B at page 6. The response to the preceding group of comments is incorporated by reference here as well.

E. Field Durability Logging

1. Comment: The requirement to log engine speed data during the field demonstration is unnecessary and burdensome. In addition, monitoring engine speed does not provide any additional information when temperature and backpressure are already used to gauge device performance. This will require measuring engine rotation directly or connecting to the vehicle's electronic control unit (ECU). This will require

testing the compatibility of the engine's ECU with the manufacturer's logging equipment and manufacturers will likely not want to share proprietary communications data. In addition, if the vehicle or equipment is powered by a mechanical engine, speed will be hard to measure. (Caterpillar)

Agency Response: ARB staff disagrees with this comment and believes that engine speed data are necessary for determining device durability and are not unduly burdensome to collect. Staff does not directly observe the durability and field demonstrations that are performed for verification. Therefore, it is critical that staff receive as much data corroborating the applicant's description of the durability and field demonstrations as possible. The proposed amendment requiring that data logs be date and time stamped and include engine speed data will give staff more information and provide more validation which will help applicants and end users by strengthening the support of the DECS' verification. Engine speed data provide valuable insight into the test application's duty cycle and provide affirmation that the field and durability applications were run as the applicant described. They can also help alert staff if the test engine described in the test plan is not the test engine actually used.

Staff also disagrees with the assertion that measuring an engine's speed is difficult and expensive. There are several inexpensive, low-technology methods for accomplishing this rudimentary measurement in the field. One common method is to use a magnetic pickup sensor near the flywheel or a gear. Another method is to measure the alternator pulse which correlates to the engine speed. Both methods are applicable to mechanical and electronic engines alike.

F. Swapping and Re-designation

1. Comment: The proposed language should specify that if the end user wants to re-designate the system, they have to incur the cost of data logging analysis or other documentation to support applicability to the new machine in terms of sizing and compatibility. It should also require end users to get the installer's or manufacturer's written approval. (Caterpillar)

Agency Response: The staff disagrees with this comment. The proposed amendments would specify requirements that must be met for a manufacturer to authorize an end-user to re-designate a DECS. These requirements are designed to ensure that the terms and conditions of the governing Executive Order are met and that warranty coverage is maintained. Details such as which party covers the cost of data-logging the recipient vehicle and how approval should be expressed are best left to the parties to decide. This approach ensures greater flexibility in how manufacturers conduct business with customers. For example, a manufacturer or installer that wishes to cover re-designation costs should not be encumbered by a regulation that requires the customer to pay.

1. Comment: If the new installer must assume the installation warranty responsibilities, how will the previous installer be notified that they have been relieved of their installation warranty responsibility? (Ironman)

Agency Response: In most cases, end users will go to the most recent installer to help them with their DECS issues and warranty claims. In addition, installers and manufacturers are free to collaborate information based on their record-keeping to generate a comprehensive DECS history with a particular end user and find the most recent installer.

G. Section 2711

2. Comment: Section 2711 violates the U.S. Constitution's Commerce clause restricting California from regulating commerce taking place outside of the state. So for example, if an out-of-state DECS manufacturer sells a device as "ARB verified" to a fleet in Massachusetts but does not offer the full verification warranty, ARB could not enforce the verification warranty on the out-of-state DECS manufacturer. (Caterpillar)

Agency Response: ARB staff disagrees with this comment. We believe that conduct proscribed by the proposed amendment and the fact that the DECS manufacturer has designated the device as "ARB verified" provide sufficient contact with California to enable ARB to regulate it.

III. MODIFICATIONS TO THE ORIGINAL PROPOSAL - NOTICE OF MODIFIED TEXT

At the January 28, 2010 hearing, the Board approved the originally proposed amendments and staff's proposed modifications. In approving the amendments, the Board directed staff to work with stakeholders to further clarify the applicability of the unidirectional requirements and extend the deadline for compliance, the end user's maintenance responsibilities and clarify the manufacturer's responsibility to provide routine maintenance procedures, and pre-installation compatibility assessment requirements. The following is a description of those modifications and clarifications and other minor modifications deemed appropriate, by section number.

Modifications to Title 13, CCR, Section 2702

Section 2702(c): Staff modified the mailing address from Sacramento, California to El Monte, California where the Heavy-Duty Diesel In-Use Strategies Branch Chief's office is currently located.

Section 2702(d) Application Format

(8)(A)(A.5) Equipment Specifications and Calibrations: Staff included a clarification for applicants to follow the applicable test equipment calibrations and specifications as required by the appropriate test procedure.

Modifications to Title 13, CCR, Section 2703

Section 2703 Quality Control of Test Data

(l) Staff modified the text by removing a specific test procedure reference and replacing it with more appropriate general language directing the applicant to use the applicable test procedure as required in other sections of the Procedure.

Modifications to Title 13, CCR, Section 2704

Section 2704 Emission Tests Required for Durability Demonstration

Table 4. Staff modified the table to provide uniformity in acronym usage. The original text spelled out “transport refrigeration units” and “auxiliary power systems”. Staff replaced these with “TRU” and “APU” respectively.

Modifications to Title 13, CCR, Section 2706

Section 2706 Other Requirements

(h)(2) Staff modified the language to clarify that the applicant is required to provide DECS maintenance information to the owner only for routine maintenance practices.

(i)(2)(G)(2.) Staff removed the language “listed on device label” since, in some cases, the date of manufacture is not available on the label but rather through the device manufacturer by reference to the DECS serial number.

(l) Staff included language to clarify that an owner’s manual must be provided to ARB’s Executive Officer and, upon delivery of the DECS, to the end-user.

(l)(9) Staff added the requirement that statements be included in the owner’s manual which stress the following:

- 1) The importance of proper engine maintenance for the proper functioning of a DECS.
- 2) The importance of proper record keeping during DECS maintenance and/or repair events.

(r)(1) Staff added clarifying language which requires that all DECS and related components be installed in the proper order relative to the exhaust flow.

(r)(3)(C)(iii) Staff extended the deadline for installation of DECS that do not comply with directionality requirements from July 1, 2010 to December 31, 2011, provided the DECS were manufactured prior to December 31, 2009.

(r)(3)(D) Staff included a provision to allow the applicant to request that the Executive Officer waive directionality labeling requirements for aftertreatment parts, with the exception of parts that have a diesel PM trapping mechanism.

(t) Staff added language clarifying that the party conducting the pre-installation compatibility assessment is the party responsible for ensuring that:

- a) Compatibility between the candidate engine and DECS is demonstrated and documented.
- b) The exhaust temperature is measured and recorded to ensure DECS exhaust temperature requirements are met.
- c) The end-user is provided with a written statement outlining all the pertinent DECS and engine data.

(t)(1)(B)(6.) Staff added language stating that a group of engines are considered similar if all the engines have similar duty cycles.

(t)(1)(D) Staff added language clarifying that in cases where representative sampling is conducted, the party conducting the pre-installation compatibility assessment is still responsible for ensuring that all installations in a group (not just the engines used in the sampling exercise) comply with the Executive Order.

(t)(4) Staff modified the proposed language by removing the requirement that the owner must maintain oil consumption records for each retrofitted vehicle. Additionally, staff provided a list of basic actions the installer must follow in order to conduct a basic assessment of an engine's state of maintenance prior to installation.

Modifications to Title 13, CCR, Section 2707

Section 2707 Warranty Requirements

(b)(1) Staff added a statement to require that applicants must provide an owner's manual to each owner upon delivery of a DECS.

(c) Staff deleted and added language to provide uniformity in usage of the DECS family name. The original text called the DECS family name "control strategy family name". Staff replaced this with "diesel emission control strategy family name". In addition, staff modified sentence structure to clarify that if at any time warranty claims exceed four percent, the applicant is responsible for submitting a warranty report within 30 calendar days.

IV. SUMMARY OF PUBLIC COMMENTS AND AGENCY RESPONSES - NOTICE OF MODIFIED TEXT

Written Comments Submitted During the 15-Day Comment Period

During the 15-day comment period, written comments were received from the following interested party:

Dr. Rasto Brezny – MECA

In addition, comments were also submitted by the individual listed below that did not involve objections or recommendations specifically directed towards the rulemaking or to the procedures followed by ARB in this rulemaking, or were comments in support of the regulatory action. These comments are not summarized.

Don Tran - No Affiliation Stated

Mr. Kevin Brown - Engine Control Systems Limited

Below is a summary of the comments submitted, followed by an agency response.

A. Pre-installation Compatibility Assessments

1. Comment: We would like for manufacturers and installers to be able to use data collected outside of common ownership fleets to create efficiency and to reduce pre-installation compatibility costs. (MECA)

Agency Response: This comment was submitted as a written comment during the 45-day comment period and it was also presented orally to the Board during the public hearing held on January 28, 2010. The agency response, which is incorporated by reference here, can be found in this FSOR in Section II, Subsection B at page 6.

V. ECONOMIC AND FISCAL IMPACTS

The economic impacts of the proposed amendments on the State, affected businesses, and individual fleets are not expected to be significant. Participation in ARB's verification program is voluntary. Applicants electing to have their DECS verified under the requirements of the Procedure choose to do so for financial gain. Verification for these participants translates into increased sales and therefore, increased profits.

Staff's analysis of the proposed amendments indicates that their impact on affected fleets may vary. Some may result in a minor cost increase, a cost savings, or have no economic impact. However, streamlining and improving the verification process can help increase competition in the retrofit market by potentially making more DECS available to fleets that must comply with the regulations. Historically, this increased competition for market share has had the effect of lowering unit prices and consequently reducing compliance costs to the regulated fleets.

The modifications previously summarized are mainly clarifications and more substantive changes would not result in cost increases for any interested party. Some modifications may help DECS manufacturers financially, such as the extension of the installation deadline for DECS that do not comply with directionality requirements. Staff does not expect a noticeable change in employment, business creation, elimination, or expansion, and business competitiveness in California due to the amendments to the regulation.