State of California
AIR RESOURCES BOARD

Addendum to the Final Statement of Reasons for Rulemaking

2012 AMENDMENTS TO THE VERIFICATION PROCEDURE, WARRANTY AND IN-USE COMPLIANCE REQUIREMENTS FOR IN-USE STRATEGIES TO CONTROL EMISSIONS FROM DIESEL ENGINES

Public Hearing Date: August 23, 2012
Agenda Item: 12-5-3
Addendum Prepared: August 15, 2013

I. Background

On July 3, 2013, the Air Resources Board (ARB or Board) submitted the Final Statement of Reasons (FSOR) for the "Adoption of the 2012 Amendments to the Verification Procedure, Warranty, and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines (the Procedure), to the Office of Administrative Law (OAL) for its review and approval. In the course of its review, OAL identified several minor and nonsubstantive clarification issues and requested further explanation from ARB. Each of these issues is addressed in turn below.

MINOR ADDITIONAL NON-SUBSTANTIVE CHANGES

OAL identified several additional, minor non-substantive changes in its review that ARB agrees add clarity and consistency to the regulations.

II. Additional minor and non-substantive changes

Numerous proposed regulatory provisions include language providing that the Executive Office (EO) may or may not take various actions at the EO's discretion; OAL has requested additional clarification how the EO will make such determinations. A Diesel Emission Control System (DECS) is verified for use with multiple engine families, this allows a system to be used across multiple engine types with different engine manufacturers, displacement, horsepower, and other configuration differences that affect system operation. In order evaluate changes to the verification application and information submitted, the language clarifies that the EO may exercise discretion in determining whether the magnitude of the change merits additional information together with the information already submitted. The definition of "Verification" in the Procedure states that the EO determination is based on both data submitted or otherwise known to the EO and engineering judgment. Therefore, the determination is dictated by many factors including the specific nature of the change, the design of the system, and the scope of engines requested for verification. Because of the nature of these systems

and their broad spectrum of use, one of the primary reasons for amendments to the Procedure was to add additional clarification. Many of the amendments do add clarification and additional criteria.

Please provide an explanation for these provisions and how these determinations or decisions will be made under the proposed regulations. For example, are there specific criteria for making the decisions at issue? Is it a case-by-case determination?

1. For example, see the following excerpts:

    a. Section 2702(a) – "If the Executive Officer determines that an application includes more than one emission control group, the applicant must..."

In Section 2701(a)(23) "Emission control group" is defined as a set of diesel engines and applications determined by parameters that affect the performance of a particular diesel emission control strategy. The exact parameters depend on the nature of the diesel emission control strategy and may include, but are not limited to, certification levels of engine emissions, combustion cycle, displacement, aspiration, horsepower rating, duty cycle, exhaust temperature profile, and fuel composition. Verification of a diesel emission control strategy and the extension of existing verifications are done on the basis of emission control groups.

The EO uses this definition to determine if the engines and applications sought by an applicant encompass more than one emission control group based on their characteristics and the operating principles of the diesel emission control strategy, as described in the definition shown below. For instance, two-stroke diesel engines and four-stroke diesel engines have very different emission profiles and exhaust temperatures and would be in different emission control groups. If an applicant demonstrates its product works well with four-stroke engines, that is not sufficient to verify the product for two-stroke engines as well.

    b. Section 2702(b) – "The Executive Officer reserves the right to require that an applicant's preliminary application be submitted with a fully-functional sample of the market-ready diesel emission control strategy..."

The verification procedure is not intended to evaluate prototype systems. As described in the staff report, the new language is intended to help the EO ensure that a system undergoing review is actually market-ready. If the EO suspects the system is a prototype or simply wishes to inspect the system being submitted for verification, the EO can request a unit. This is a specific case of the more general authority already granted to the EO under 2702(q) in which the EO may require the applicant to submit a reasonable number of units for testing or inspection.

c. Section 2702(b) – "Changes during the verification process ... may require the applicant to begin the verification process anew, at the discretion of the Executive Officer."

The Procedure provides specific criteria for when a design modification would be considered a change. These are listed in Section 2702(j)((1)-(5). If an applicant changes the product while it is under review, it becomes a different system than the one for which data were already submitted to the EO. The default situation is that the applicant would have to begin the process anew because the system first submitted for evaluation is no longer the system the applicant wishes to verify. This language clarifies that the EO may exercise discretion in determining whether the magnitude of the change merits beginning anew or rather submitting limited additional information together with the information already submitted.

d. Section 2703(c)(1) - "Any testing conducted prior to the sizing change may be rejected at the Executive Officer's discretion."

This Section clearly states that any changes to system sizing would require a new test plan. This language alerts the applicant to the fact that testing done under a different, no-longer-used sizing methodology may not be accepted as part of the application by the EO. Testing which does not comply with appropriate sizing criteria may be included by the EO if the difference in sizing has no expected effect on the system or engine. Criteria considered include but is not limited to emissions reductions, backpressure concerns, durability concerns, or production of deleterious secondary emissions.

e. Section 2703(c)(2)(B) - "Additional testing requirements for this configuration are at the discretion of the EO".

This section applies to a system with a single filter version and a version with multiple filters in one can. It indicates that the latter version may have additional testing requirements because of the wide range of possible designs that the generic description of "multiple filters in one can" can encompass and the potential for large differences from a version of the product with one single filter. This is a case-by-case determination of the applicability of data from the single filter version to whatever the multiple filter version turns out to be and will depend on the design specifics of both versions. Again, this can have durability and emissions compliance ramifications which can affect if a system configuration may be problematic as far as durability and/or emissions compliance.

f. Section 2704(c)(4) - "Any testing conducted prior to the sizing change may be rejected at the Executive Officer's discretion."

Same as (d) above.

g. Section 2706(w)(3) – "If the Executive Officer determines that an applicant has not made a satisfactory demonstration of the safety of the diesel emission control strategy, the Executive Office may deny..."

The EO does rely on specific safety requirements when they exist. The amended language also includes specific safety requirements in Section 2706(u) "Requirements for Installers of Diesel Emission Control Strategies" and 2706(g) "Safety Considerations" such as the system cannot be installed above an occupied space, installation must adhere to Federal Motor Carrier Safety Administration standards, and the DECS manufacturer must provide an analysis of all potential safety and catastrophic failure issues. An applicant's demonstration of safety is then necessarily judged sized up relative to the growing body of in-field experience with systems in general. The EO always works with applicants to identify and analyze potential safety concerns to the best of its ability with a strong dependence on the specific design features employed by a given system.

h. Section 2709(p) - . "If the Executive Officer determines after a review of an applicant's in-use compliance report,...that a diesel emission control strategy....".

The intent of the proposed recall provisions is to require corrective action by an applicant to the Procedure for a systemic defect of their DECS family or to address issues of safety or catastrophic failure. Staff's proposal provides the Executive Officer with the authority to determine whether the recall of a DECS family is appropriate based on a review of such things as an applicant's in-use compliance report, remedial report, warranty report, enforcement testing results, etc. The regulations clarifies that this determination will be based on: the potential for catastrophic or other safety related failures, failure to meet the conditions for passing in-use compliance testing, valid warranty claims for the same part or component that exceed 4 percent of the number of deployed systems, or if a substantial number of units experience a failure of an operational feature (e.g., strategy used to signal high backpressure).

A complete discussion of the proposed recall provisions, including the minimum requirements for an applicant's recall plan, can be found in Chapter VII of the ISOR. The proposed recall provisions are necessary to support staff's proposed changes to the in-use compliance requirements, to address safety issues or the potential for catastrophic failure, and to better protect end-users of these devices.

2. Section 2704(e) - Table 3 – Durability hours for Locomotives is changed from 1000 to 3000 hours. Please identify where the support for this change can be located in the rulemaking file.

   The Notice, ISOR, and Updated Informative Digest, all clarify and support the change to durability hours for locomotives. Staff worked with the locomotive

industry to develop the revised durability period. This new durability period represents approximately one year of use in a locomotive application. The ISOR specifies the change to 3000 hours. No objections were received during the rulemaking process in response to this update.

See supporting language below.

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:
"Staff also proposes to correct several format and numbering errors in section 2702, add several definitions to section 2701, identify the appropriate contact and mailing addresses for application submittals, **clarify the durability demonstration period for locomotive verifications**,"

Updated Informative Digest:

"Description of Regulatory Action:"
"Approved changes also correct several format and numbering errors in section 2702, add several definitions to section 2701, identify the appropriate contact and mailing addresses for application submittals, **clarify the durability demonstration period for locomotive verifications**, add clarifying language to identify what may be considered a design modification regarding an applicant's DECS, and clarify the methodology used to determine emissions reductions. These changes would not affect the stringency of the verification process but would simply modify the existing evaluation protocol and implement the original intent of the regulation.

Lastly, at the request of the regulated entities, approved amendments extend the conditional verification timeframe for off-road strategies from one to two years. This would benefit verification applicants by allowing them additional time to complete their conditional verification requirements.

Overall, the approved amendments would provide additional flexibility and economic relief to applicants while ensuring that DECS verified by ARB continue to be durable and effective in reducing emissions from existing diesel vehicles. **The proposed amendments would also strengthen and preserve critical end-user protections to ensure the safe and effective use of DECS meet ARB's fleet rules.**"

ISOR:

Chapter II "I. OTHER PROPOSED AMENDMENTS"
"Durability Demonstration Periods. **Staff's proposal clarifies that the minimum durability demonstration period for locomotive verifications is 3000 hours.**"

Chapter VI
Amendments to Title 13, CCR, Section 2704. Durability Testing Requirements.
"(e) Service Accumulation. This section was **updated to correct the numbering sequence and to identify the appropriate minimum durability demonstration period for locomotives**."