American Rental Association

May 11, 2007

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The Honorable Robert F. Sawyer, Ph.D.
Chairman
California Air Resources Board
1001 I Street
Sacramento, CA 95812

Dear Dr. Sawyer:

The American Rental Association (ARA) has been an active participant in the process to develop regulations that control and reduce the emissions of particulate matter and oxides of nitrogen ($NO_X$) from off-road diesel engines since those efforts began more than two years ago. ARA represents more than 4,800 rental businesses in North America. In California, 278 ARA members are in the businesses of renting equipment, tools, and party and event services at 587 locations across the state. ARA estimates total rental revenues in California in the range of $6 billion annually. In keeping with our commitment to this process, we are again submitting technical comments to the proposed regulation that will be considered at the May 24-25 meeting of the Air Resources Board.

Prior to our presentation of those comments, I find it necessary to reiterate our concerns over the possible future changes in $NO_X$ targets being established in this regulation. A copy of our April 18, 2007 letter to you is attached to these comments. ARA cannot support a regulation that does not provide a certain future for our members as they work to comply with the regulation.

The remainder of our comments on the proposed regulatory language is as follows.

1. 2449(c)(5) Definitions:

The Captive Attainment Area Fleet provides no method for adding or delisting counties based upon future pollution considerations.

2. 2449(c)(27) Maximum Power:

The owner will have to recover information from the nameplate, such as family. If the Method J1349 rating or literature rating is different from the nameplate rating, which rating should be used?

2449(c)(1) Fleet Average Requirements:

3. Compared to the February 2007 version, certain $NO_X$ emission targets, especially the 25 to 49 and 50 to 74 horsepower categories have been significantly tightened. Since this is a significant change in the regulation, it should have been highlighted instead of burying the change in the newest version of the regulatory language available only in the Staff Report. This is not in the spirit of the outreach efforts of Staff and heightens the concern of participants regarding the continued lack of transparency of the process, particularly with regard to $NO_X$.

4. 2449(d)(1)(A) and (B) Computational Procedure:

ARA has pointed out in several written comments that the method of calculation is not defined but ARB has still not described the calculational comparison method in the regulatory language. ARB has demonstrated a calculational method in its "Fleet Calculator" which is inconsistent for the two emissions and which ARA believes is incorrect for $NO_X$.

It is important to define an exact approach to the comparison of target and average. The approach should be unbiased to the greatest extent possible and should not utilize information that is beyond the precision of the regulatory target.

In Table 1 of the proposed regulation, ($NO_X$ Emission Targets), the precision of the $NO_X$ emission targets is one decimal place. In Table 2 and 3, (PM Emission Targets), the precision of the particulate emission targets is two decimal places. The precision of the average emission factor must be in agreement with the target in order that a legitimate comparison is made.

a. Significant Figures and Comparison:

With respect to the fleet calculator, ARA entered a test fleet for 2020 consisting of 11 units covering 11 model years from 2020 to 2010. All engines have a horsepower of 37bhp. The following table compares our analysis with ARB's Fleet Calculator (version April 25, 2007).

| Item | ARA Calculation | ARB Fleet Calculator | Comment |
|---|---|---|---|
| **NOX Target** | **3.5** | **3.50** | **Table 1 gives 3.5. ARB added a significant figure.** |
| **PM Target** | **0.08** | **0.08** | **As in Tables 2 and 3.** |
| **NOX Average** | **3.5(2)** | **3.52** | **ARB carried the extra significant figure ARA rounded off NOX average to appropriate number of digits using ASTM E29-90.** |
| **PM Average** | **0.07(45) = 0.07** | **0.07** | **ARA and ARB rounded the fleet average to the appropriate number of digits** |
| **NOX compliance** | **Pass** | **Fail** | **ARB compared NOX to two significant decimal places when Target is given to only one** |
| **PM compliance** | **Pass** | **Pass** | |

ARB arbitrarily increased the precision of the $NO_X$ target by one significant figure (and beyond the number of significant digits in the emission standard) in the worksheet. The precision of the published target means that in reality, the target could be as large as $3.55^-$ as this value would round down to 3.5. In any event, there is no reason for an added digit of precision to be a zero. The proper construct would be to round off the fleet average $NO_X$ emission to one decimal place before comparison. ARB properly did this for the PM analysis.

b. Method of Rounding:

There are many methods of rounding, ( http://en.wikipedia.org/wiki/Rounding ). The most common are conventional and round to even. Excel seems to use conventional rounding. ASTM E29-90 requires "round to even" or "unbiased rounding". EPA and many units of California government specify ASTM29-90 in regulatory language. Below is a comparison of these two methods for a hypothetical case.

- Assume the weighted PM target is 0.459
- By conventional rounding, the PM target is 0.46
- By Round to Even the PM target is 0.46
- Assume the weighted Fleet PM emission is 0.465
- By conventional rounding, the PM emission is 0.47. Note that 5 is exactly midway and therefore rounding up always biases the result upwards.
- By Round to Even, the PM emission is rounded down to 0.46. (Had the second decimal place been odd, the rounding would have been up. The method does not always favor a pass in the comparison).

Thus, with conventional rounding used by Excel, the fleet fails but by E29-90, the fleet passes. This calculation example shows that a non-unique conclusion is possible. **ARA strongly recommends that the ASTM29-90 method be specified.**

5. 2449(d)(10(C)(IV) Electric and AFV:

What is the meaning of "same horsepower" in the context of this comparison? If a 2010 diesel engine is rated at 400 hp and an alternative fuel engine is rated at 395 horsepower, are these the "same horsepower"?

6. 2449(d)(10(D)- Hours in Fleet Average Option:

The formula in this section allows potentially no credit for brand new engines added to the fleet. For a large fleet, the difference between the reporting date and compliance date is one month. Suppose a piece of equipment that is heavily used is retired on March 1 and replaced with a new much lower emitting piece of equipment. The hourly weighted approach provides credit for the retirement but no credit for the new unit.

7. 2449(d)(2)(A)(c)(4) Exemptions:

In this regulation the term "years old" is used. There is no definition of this term. While it could be understood to relate to model year, it could also be interpreted as being related to purchase or in-service dates.

8. 2449(d)(6) Fleet Ownership Transferred:

Our interpretation of this section concludes that a fleet owner who is meeting the fleet requirements through averaging can purchase a fleet meeting the requirements through BACT and continue to meet the requirements for both fleets using averaging for one and BACT for the other until the next reporting date. On the next reporting date, the fleet owner would be required to combine the fleets and decide which method of compliance they will use henceforth for the combined fleet. Is this a correct interpretation of this provision?

9. 2449(d)(7)(C) After the Final Compliance Date:

This section requires that a Tier 4 engine must have a diesel particulate filter (DPF) added even if new technology allowed the manufacturer to certify this engine without a DPF.

10. 2449(d)(10)(B) Compliance After the Final Compliance Date:

Tier 4 engines should never require a non-OEM VDECS.

11. 2449(f) and 2449(g) Labeling and Reporting:

It is unclear how an Engine Identification Number would be obtained during the period prior to the initial reporting date. It would be most efficient to affix an EIN to a piece of in-service equipment at the time data are collected for initial reporting since equipment owned by Rental Companies is generally in the field.

We appreciate the opportunity to comment of these important issues and we look forward to providing testimony to the Board on May, 25, 2007.

Sincerely,

John W. McClelland, Ph.D.

American Rental Association

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April 18, 2007

The Honorable Robert F. Sawyer, Ph.D.
Chairman
California Air Resources Board
1001 I Street
Sacramento, CA 95812

Dear Dr. Sawyer:

I am writing on behalf of the American Rental Association (ARA) and the members of our California affiliate, the ARA of California. The purpose of my letter is to voice a concern prompted by ARB Executive Officer Catherine Witherspoon's, "*Notice of Public Hearing to Consider the Adoption of a Proposed Regulation for In-Use Off-Road Diesel Vehicles*", for the May 24, 2007 Board Meeting. Ms. Witherspoon, (page 4) in discussing the merits of the proposed off-road mobile in-use vehicle rule, counsels the Board that "the proposed rule is currently not sufficient to demonstrate full attainment of the federal PM2.5 standard by 2014. As a consequence, the Board may consider whether the proposal can be strengthened - either at the May 24-25 public hearing or at a subsequent meeting".

***ARA will not support any regulation brought to the Board that is open-ended in terms of mandatory emissions reductions.***

Moreover, in presentations made by Kurt Karperos (Item 07-3-2) titled "*Board Update 2007/2008 State Implementation Plan*" at the March 22, 2007 meeting and the subsequent SIP planning meeting at the El Monte on April 12, 2007, Mr. Karperos indicated that it might not be possible for the South Coast AQMD to demonstrate attainment of the PM2.5 standard by 2015 as required. Based upon modeling, the South Coast *might* require additional $NO_X$ reductions over and above those currently being codified. At the same time, ARB Staff have indicated that the proposal for mobile off-road vehicles represents the optimal $NO_X$ removal strategy considering the timing of the introduction of Tier 4 equipment. In the *In-Use Off-Road Diesel Vehicle ISOR*, ARB Staff states that the "proposed regulation represents the economic limit of what industry could bear, and any further emission reduction requirements would likely require financial incentives".

The emission reduction target proposed by ARB Staff for diesel construction equipment is 10.5 tons per day in the South Coast in 2014. The benefits of the In-Use Off-Road Diesel Vehicle rule increase substantially by 2020. For the South Coast, current SIP planning suggests a 74 tons per day shortfall of $NO_X$ reductions in 2014. Assuming $10,000/ton of $NO_X$, the South Coast additional cost would amount to $270MM annually. This is greater than the average annual $243MM statewide cost for the entire In-Use Off-Road Diesel Vehicle regulation proposed by ARB. South Coast AQMD Staff has suggested that fleet turnover could be accelerated to achieve more reductions. In fact, as a part of their optimization process, ARB Staff has relaxed the BACT turnover requirement prior to 2015 from 10% to 8% of the fleet.

***For these reasons, we do not support any further "strengthening" of the off-road diesel regulations and encourage the Board to take some final action on this Rule at the May 24th meeting.***

If additional emissions reductions are needed, the taxpayers should purchase them. These incentives should be opened to the entire diesel fleet and key stationary sources in the South Coast in a separate rule-making that minimizes the cost to the taxpayers of the State. Because it will take an act of the state legislature and approval of the governor, the process of committing incentive funds would substantially delay implementation of command and control regulations currently in development. If ARB Staff is correct, imposing any additional $NO_X$ requirements on the off-road diesel equipment fleet could be more expensive than for other options because the requirement would be sub-optimal.

Emission modeling and air quality measurements are not in agreement with regards to South Coast attainment. Modeling shows a much lower sensitivity to $NO_X$ removal than actual measurements. Because of the tremendous cost of additional $NO_X$ reductions in the South Coast, it is imperative that the modeling response of PM2.5 to $NO_X$ be in agreement with fact to the greatest degree possible. It is not even clear that imposing stricter $NO_X$ regulations is the best approach for the South Coast. Based upon the required submittal date for the PM2.5 plan, the South Coast plan can be fine tuned until April 2008. ARB Staff has also indicated that there might be other strategies to reaching attainment in the South Coast. One possibility suggested by ARB Staff might be targeting direct PM2.5 emissions in and around monitors that are likely to show a failure of the standard. ARB Staff has not reported the cost for such an approach.

***The Board should direct Staff to explore the various possibilities for attainment in the South Coast and find the plan that produces attainment at the minimum cost. The "Black Box Emission Reductions" should be funded by the State.***

We are opposed to any further rule changes that create multiple regions for $NO_X$ control in the State. There is already a proposal to allow off–road mobile fleets operating exclusively in attainment counties to avoid $NO_X$ controls. Similarly, there is a proposal to allow small businesses operating small fleets to be exempt from $NO_X$ controls. Since many ARA members operate throughout the State and may move equipment across district lines, a solution specific to the South Coast could put those companies at a competitive disadvantage.

***The Board should only approve a statewide program.***

The American Rental Association has been involved in good faith rule-making processes regarding off and on-road diesel equipment. We have been reasonably supportive of the process to date, even with the late change that incorporated mandatory $NO_X$ reductions after affected industries were repeatedly told that all $NO_X$ reductions would be a result of the mandatory diesel PM reductions. No industry wants to be regulated. However, it is clear that the in-use, off-road regulations will be finalized. Our industry expects that any regulation provides assurance that we can implement a long-term business plan that accommodates the regulation. An open-ended regulation provides no such assurance. If the final rule is open-ended with respect to $NO_X$ emissions, we will not be able to support it and we will have to investigate the possibility of seeking legislative or legal relief.

I would appreciate a response prior to the May 24$^{th}$ board meting. Thank you for your consideration.

Sincerely,

John W. McClelland, Ph.D.