DATE: Thursday, July 22, 2010

TO: District Board

CC: County Counsel
    County Executive Office

FROM: Christopher Brown AICP, Air Pollution Control Officer

SUBJECT: Report on ARB Diesel Regulations 2000-2010

Please see the attached report.

I will be presenting a brief summary of this information verbally at the Board Meeting.
Executive Summary

This report provides a brief background on Air Resources Board efforts to reduce public exposure to Diesel Particulate Matter since 2000.

Several of the most controversial ARB’s Diesel regulations are expected to be discussed and possibly modified at the September 23/24 Air Resources Board meeting and significant public input is expected.

This report is divided into five parts –

Regulatory Background

Outline of ARB Diesel Regulations

Details on controversial regulations

Discussion of implementation issues

Grant and other financial assistance funding
Regulatory Background

OEHHA (Office of Health Hazard Assessment) [http://www.oehha.ca.gov](http://www.oehha.ca.gov) identified diesel particulate matter (Diesel PM) as an Air Toxic in 1998. Trucks and buses are the largest source of diesel PM in California. ARB adopted the Diesel Risk Reduction Plan (DRRP) in 2000 in response to the OEHHA findings. According to ARB 28,000 tons of Diesel PM are emitted annually (in 2000). Diesel PM, largely because of the amount of it emitted, represented the greatest cancer risk (roughly 70%) of all air toxics identified by EPA or ARB. The DRRP requires the following measures to reduce the emissions of Diesel PM:

- Risk reduction goals by 2010 and 2020
- Stringent New Engine Standards
- Cleaner Diesel Fuel (< 15 ppm sulfur)
- Ensure In-Use Emissions Performance
- Aggressive Reductions from In-Use Engines

Any regulations adopted by ARB under the DRRP are Air Toxic Control Measures (ATCMs) and are typically represent the most stringent control measures. ATCMs for mobile sources are enforced by ARB while ATCMs for portable or stationary sources are enforced by local Districts. For portable or stationary sources Local Districts can choose to adopt local regulations that are at least as stringent as ARB’s regulations.

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1 The term “aggressive” is used in the DDRP to describe the in-use regulations.
Outline of ARB Diesel Regulations

Since adopting the DRRP in 2000, ARB has adopted a number of rules outlined in the plan. These rules generally fall into two categories:

- New engine or fuel standards effecting engines or fuel purchased after a fixed date.
- In-use equipment rules requiring the replacement or retrofitting of existing diesel engines.

In general the new engine and fuel standards have been met with grudging acceptance by the regulated community – as any other new standard would be – but the in-use regulations have been much more controversial.

### Fuel and New Engine standards

<table>
<thead>
<tr>
<th>ARB Regulation</th>
<th>Emissions Reduction</th>
<th>Impacted Community</th>
<th>Issues</th>
<th>Enforcement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ultra Low Sulfur Diesel</td>
<td>25% Reduction in PM</td>
<td>All Diesel Users</td>
<td>None (EPA adopted)</td>
<td>ARB/Districts</td>
</tr>
<tr>
<td>2007 On Road Diesel Engine Standard</td>
<td>90% reduction in PM</td>
<td>New engines buyers</td>
<td>None (EPA adopted)</td>
<td>ARB/EPA</td>
</tr>
<tr>
<td>Tier 4 Off Road Engine Standards</td>
<td>90% reduction in PM</td>
<td>New engine buyers</td>
<td>None (EPA adopted)</td>
<td>ARB/EPA</td>
</tr>
<tr>
<td>Oceangoing vessel fuel standards (large vessels)</td>
<td>75% reduction in PM</td>
<td>Deep draft shipping</td>
<td>Few</td>
<td>Unknown</td>
</tr>
<tr>
<td></td>
<td>80% reduction in sulfur</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The new fuel and engine standards do not address the issue of existing diesel engines. Diesel engines have an extraordinary long life span and can remain in service for decades (which is one reason why industry prefers them). ARB needed to adopt rules to reduce emissions from older engines to meet the goals of the DDRP.
## In-Use Regulations (replacement or retrofits)

<table>
<thead>
<tr>
<th>Regulation</th>
<th>Emission Reduction</th>
<th>Impacted Community</th>
<th>Issues</th>
<th>Enforcement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transit Agency Rules (2)</td>
<td>Emission reductions from 10,000 buses</td>
<td>Transit operators and riders</td>
<td>None at this time</td>
<td>ARB</td>
</tr>
<tr>
<td>Waste Collection Vehicles</td>
<td>85% reduction in PM</td>
<td>Waste Collection contractor holders</td>
<td>Cost</td>
<td>ARB</td>
</tr>
<tr>
<td>Public Fleet Rules</td>
<td>60% reduction in PM</td>
<td>Public Agencies</td>
<td>Cost</td>
<td>ARB</td>
</tr>
<tr>
<td>School Bus Idling</td>
<td>PM exposure for children</td>
<td>School Districts and riders</td>
<td>None at this time</td>
<td>Districts</td>
</tr>
<tr>
<td>Stationary Engines (includes Ag Pumps)</td>
<td>80% PM reduction</td>
<td>Operators of Stationary engines</td>
<td>Cost/Outreach/Complexity</td>
<td>Districts</td>
</tr>
<tr>
<td>Transportation Refrigeration Units</td>
<td>65% reduction 92% reduction by 2020</td>
<td>Operators of Refrigeration units</td>
<td>Cost/Outreach</td>
<td>ARB</td>
</tr>
<tr>
<td>Portable Engines</td>
<td>92% reduction by 2020</td>
<td>Operators of Portable Engines</td>
<td>Complexity/Deadline Changes</td>
<td>ARB/Districts</td>
</tr>
<tr>
<td>Truck and Bus Idling</td>
<td>Not quantified</td>
<td>Truck engine operators</td>
<td>Outreach</td>
<td>Districts</td>
</tr>
<tr>
<td>Harborcraft (Charter Boats)¹</td>
<td>Not quantified</td>
<td>Charter Boat owners</td>
<td>Outreach/Cost</td>
<td>ARB</td>
</tr>
<tr>
<td>Harborcraft (Fishing Boats)²</td>
<td>Not quantified</td>
<td>Fishing Boat owners</td>
<td>Outreach</td>
<td>ARB</td>
</tr>
<tr>
<td>Off Road Equipment</td>
<td>74% PM reduction</td>
<td>Equipment owners</td>
<td>Cost/Deadline changes/exemptions</td>
<td>ARB</td>
</tr>
<tr>
<td>On Road Truck Rule</td>
<td>4745 Ton of PM/year (declines over time)</td>
<td>Truck Owners</td>
<td>Cost/Deadline changes/exemptions</td>
<td>ARB</td>
</tr>
<tr>
<td>Smartway Truck rule</td>
<td>Not quantified</td>
<td>Long Haul trucking</td>
<td>None</td>
<td>ARB</td>
</tr>
<tr>
<td>Cargo Handling Equipment</td>
<td>81% PM reduction</td>
<td>Ports and Railyards</td>
<td>None</td>
<td>ARB</td>
</tr>
<tr>
<td>Dryage Trucks</td>
<td>1058 of PM/year</td>
<td>Ports and Railyards</td>
<td>Compliance/Language</td>
<td>ARB/Ports</td>
</tr>
</tbody>
</table>

1 Charter Boats must retrofit or replace engines between 2011 and 2020.
2 Fishing Boats must replace engines with engines meeting current emissions standards when rebuilding or replacing engines.

<table>
<thead>
<tr>
<th>Color Coding</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No Color – typical implementation issues</td>
<td>ARB Enforcement - Minor Issues</td>
<td>District Enforcement – Minor Issues</td>
</tr>
<tr>
<td>ARB/District Enforcement - Serious Issues</td>
<td>ARB Enforcement - Serious Issues</td>
<td>District Enforcement - Serious Issues</td>
</tr>
</tbody>
</table>

Each one of the highlighted rules is discussed more in depth below.
Why the enforcing entity matters

The enforcing agency is critically important because only that agency can give compliance advice to the regulated community. The District cannot provide advice on complying with ARB enforced regulations because District staffs do not have access to ARB’s enforcement polices and have not been trained by ARB. Providing incorrect information can result in District or personal liability. This limitation impacts outreach as well because the first question after explaining that a rule exists is often “what do I need to do.” The District is regularly contacted by people who cannot get an answer from ARB (or do not like the answer they did get). There is no role for the District on State enforced regulations other than to direct people to ARB.

ARB Enforced Regulations

Waste Collection Trucks

Requires solid waste refuse collection vehicle owners to retrofit 100% of their vehicles by 1/1/2011. In theory all solid waste collection vehicles will have been upgraded or replaced by the end of 2010. The rule only applies to collection vehicles not transfer vehicles which are covered by the on-road rule. The rule has reporting requirements for government agencies and contracted haulers. There are no exemptions to this rule.

Public Fleets (On Road)

Requires the upgrading or replacement of Heavy Duty public fleet vehicles by 2012 – however low population counties (including Mendocino) have an extension to 2017. The regulation applies to all public vehicle fleets – except some federal government fleets – and public utility fleets. Exempts all EMS, Law Enforcement and Fire Protection Fleets. Small government fleets (CSDs and School Districts) are most likely to be found in violation because of lack of fleet managers and prior outreach – even a single vehicle fleet has to comply.
Harborcraft

There are two separate impacts from the Harborcraft regulation. The most significant impact is on the charter boat industry. Any vessel that carries passengers for hire is required to replace or retrofit the engine on their vessel between 2009 and 2020 (based on size, age and usage). Fishing vessels do not have to upgrade (provided they do not carry passengers), but they can no longer rebuild older engines. Engines must be replaced with current year model engines.

Off Road Equipment

This rule requires fleets to meet emissions reduction targets over a number of years based on the size of the fleets and age of the equipment. The initial compliance date for large fleets was March 2010; Medium Fleets is March 2013; and March 2015 for small fleets. Most local fleets are in the small category.

Public fleets are subject to this rule in exactly the same manner as private fleets.

The rule also limits off road equipment idling to 5 minutes.

The Off Road rule has a number of exemptions – the most significant is for any equipment used for agriculture. There are also reduced compliance requirements for equipment which remains in a state and federal ozone attainment area (i.e. Mendocino County) and equipment that is used for a limited number of hours a year.

On Road Truck Rule

This regulation requires a retrofit or replacement of older Heavy Duty Trucks. Emissions reduction targets are set on fleet size, operational area and truck use. Some larger fleets already have emission reduction goals, while most medium and smaller fleets have a few years before emissions reduction targets take effect.

The on road rule contains a number of exemptions including exemptions for agriculture, low use vehicles, emergency equipment and logging trucks.

Two of ARB’s divisions use different definitions of Agriculture – which creates significant confusion with the regulated community.

The Mobile Sources Control Division (MSCD) uses the more legally correct definition which INCLUDES Forestry. This means that forestry equipment is exempt from the Off Road rule.

The Stationary Source Division (SSD) does NOT include Forestry in their definition of Agriculture. SSD regulations are enforced by the District. Therefore any stationary or portable engines used in forestry operations are NOT exempt as a similar engine on a farm would be.

Needless to say this “difference of opinion” at ARB causes significant confusion in the field.
**District Enforced Regulations**

Regulations that impact stationary or portable sources of air pollution or individual vehicles (i.e. idling, excessive smoke) are enforced by the District under State Law.

**Stationary Engines**

Requires the replacement or retrofit of all Tier 0 (pre-1998) diesel engines – except for back-up power generators. This has impacted local quarries, wineries and other industrial sites using stationary diesel engines. Stationary Agricultural engines will be impacted on January 1st, 2011 when all pre-1998 engines must be replaced – retrofits are not allowed for agricultural pumps. Some backup power engines are also required to be replaced if they are used for too many testing hours annually.

Exclusive of agricultural pumps - the initial compliance deadline for this regulation was January 2007 and a second deadline was in January 2008. Currently the regulation’s main impact is a prohibition on the installation of older engines.

For agricultural pumps the initial compliance date is January 1, 2011 and additional compliance dates extend into 2020.

District staff has developed a local Air Toxic Control Measure which is expected to come before the Board in September to address the agricultural pump issue.

**Portable Equipment rule and Portable Equipment Regulation**

Portable equipment is especially complex. Depending on the use, the same equipment may require a portable District Permit, may be registered with the state in lieu of a permit or may be classified as stationary source and subject to that regulation and permitting. The portable equipment regulations are complex and not intuitive – leading to confusion and conflict between ARB, the Districts and Industry. In addition the same engine may be subject to more stringent standards based on the use. A recent court decision out of Sacramento County provided some clarity by finding that the District (not ARB) makes the final decision about what category an individual piece of equipment falls into².

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² ARB has repeatedly issued determinations that are in conflict with District determinations. The Court stated that the District, not ARB, is empowered to make these determinations.
Truck and Bus idling regulations

ARB adopted a truck and bus idling regulation in 2005. This rule requires engines to be shut off when equipment is stationary for more than 5 minutes. This regulation is enforced by the District and Law Enforcement (who generally do not have the time). In specific parts of the District the idling of diesel trucks can be significant and these areas are regularly patrolled by District staff. The most frequent violations are interstate truck “sleeper” cabs in which the driver leaves the main engine running while sleeping in the truck for 6-8 hours.

The main issue with enforcement of this rule is outreach – partially to out-of-state truck drivers. ARB did include a requirement in the rule for signage; however this section was not codified correctly and is not enforced. The District will shortly be proposing a regulation which will correct this problem locally and allow the posting of signs to be required by the District in specific situations.

Implementation issues

There have been numerous implementation issues with each one of these regulations – in fact these issues are too voluminous to detail in this report. There are some common themes however –

Overly complex regulations

All of the Diesel Regulations are overly complex and contain far too many exemptions and special provisions. This makes the regulations more complex and more difficult to interpret. The On-Road rule is 52 pages long – longer than all of the District’s stationary source regulations put together. The Stationary Rule is 71 pages long and contains an exemption for “space plane vehicle reentry landing support engines” as well as dozens of other special exemptions.

The special exemptions result from two interrelated activities –

1.) Industry lobbying of ARB for special provisions.

2.) ARB’s use of a “divide and conquer” strategy of regulation development.

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3 As yet unclaimed in Mendocino County.
An example of industry lobbying is the two engine cranes (one engine for moving and one for operating the crane) exemption from the Portable Equipment Regulation compliance timeline. These two engine cranes still need a District Permit (or State Registration), but the compliance dates are those from the “off road equipment” regulation. The only benefit from this provision is that two engine cranes do not need to reduce emissions at this time giving them a competitive advantage in the market.

An example of the divide and conquer regulatory strategy is the imposition of retrofit requirements on Waste Collection trucks before imposing similar requirements on Public Fleets and then later on Commercial trucks. This limited opposition to each rule by the impacted group. While effective politically it is not the ideal way to make good public policy.

**Moving goalposts**

Following adoption, ARB has regularly been providing extensions, waivers and clarifications to all or part of the regulations. These various changes are hard to track and compile because they are not published in any central location.

In some cases these changes have resulted from technical issues – occasionally the emissions goal cannot be reached for technical reasons. In other cases the changes are the result of legislation passed by the state or federal government. Some significant changes result from errors in the initial regulations\(^4\). Sometimes the changes are simply the exercise of enforcement discretion by the ARB Executive Officer – for example ARB is not taking enforcement action on many parts of the Off Road rule at this time because the ARB Board has expressed a desire to revisit it.

This continuous changing of requirements results in some operators upgrading equipment and incurring debt while their competitors do not have to and can undercut them in the market.

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\(^4\) For example ARB believed the Public Fleet rule would apply to the Federal Government Fleets; however they had misread the Clean Air Act. The On Road Truck Rule does apply to these vehicles.
Geography

ARB’s regulations rarely consider geographic factors which impact emissions. For example the “grading” season in Northern California is nearly half the season in Southern California. For this reason emissions are higher in Southern California and equipment operators have greater income to offset compliance costs. The cost benefit analysis conducted by ARB failed to address this issue.

A similar issue occurred in the Ag. Pump regulation which was based on irrigation pump usage. Pumps in Mendocino County are largely used for Frost Protection – not Irrigation. The usage patterns, age, cost of compliance and size of the equipment is markedly different. Therefore the emissions, costs, benefits and impact of the rule are completely different.

Outreach

Like many state agencies ARB staff face significant travel restrictions - even before the current downturn. In addition there is significant turnover in the agency and the staff is now much younger and with very little experience outside of Sacramento. In most cases their outreach is confined to the internet, press releases and radio interviews. When ARB staff have come to Mendocino County they have not notified the District of planned events – which kept the District from inviting interested parties. The assumption seems to be that the Districts could not add any useful information to the discussion – this attitude permeates ARB at all levels.

Research errors

ARB’s research both before and after the regulation adoption has contained a number of errors. For example –

- ARB overestimated Off-Road Emissions statewide by 50% prior to the adoption of the Off Road Rule (resulting in the current revisions).
- One ARB employee was found to have inflated his resume by claiming a Ph.D. which had not been received (this employee was demoted and his work was reviewed).
- ARB claimed that only 11 Agricultural pumps existed in Mendocino County. The real number is closer to 300 which greatly increases the economic impact of the regulation.

These errors both undercut the credibility of ARB and the rule adoption process. While ARB has addressed the first two errors they have refused to reconsider or adjust the Agricultural Pump regulation.
**ARB Public “accessibility”**

ARB’s initial plan for responding to questions from the regulated community was to direct the public to their website. However the ARB website is very large and difficult to navigate. In addition a significant portion of the population lacks access to the internet – particularly in rural areas. Because of these issues the District was receiving a number of phone calls and walk in customers who had questions about ARB’s programs – questions District staff could largely not answer (for liability reasons discussed above). Additionally ARB was subject to furloughs last year which reduced their staff’s availability.

Because of these concerns ARB has been increasing their outreach and providing simpler websites for the public to use. In addition a new toll free phone number has been established.

- [www.arb.ca.gov/truckstop](http://www.arb.ca.gov/truckstop) (Truck rules)
- [www.arb.ca.gov/msprog/ordeisel/ordeisel.htm](http://www.arb.ca.gov/msprog/ordeisel/ordeisel.htm) (Off Road equipment)
- 1-866-6Diesel (866-634-3735)

Since these new services have been up and running the number of complaints received by the District has dropped significantly.
**Grant funding**

During the rule adoption process ARB staff frequently talked publically about the “billions” of dollars that will be available in grants and low interest loans to assist with compliance. For large portions of California these statements are true, however in Mendocino County the amount of available funding is much more limited.

The amount of funding available locally is very hard to quantify because many of the programs are statewide, but the largest grant programs exclude projects in Mendocino County. Typically the County is excluded either because the air is “clean” (i.e. meets federal standards) or because Highway 101 is not defined as a “goods movement corridor” by the State.
Funding available for local projects

www.californiahvip.org

Carl Moyer Memorial Program ($180,000 locally)  www.arb.ca.gov/msprog/moyer/moyer.htm

California Pollution Control Financing Authority  www.treasurer.ca.gov/cpcfa/index.asp

Hybrid Off-Road Equipment Pilot Project   www.arb.ca.gov/msprog/aqip/offroad_hybrid.htm

Voucher Incentive Program ($28 million)  www.arb.ca.gov/msprog/moyer/voucher/voucher.htm

PLACE Program (loans)  www.arb.ca.gov/ba/loan/loan.htm

PG&E/SCE Ag. Pump Program  www.arb.ca.gov/ag/diesel/diesel.htm
Incentive funding not available locally

Prop 1B (trade corridors)
1 $Billion in funding available in colored areas
www.arb.ca.gov/bonds/gmbond/gmbond.htm

Voluntary Accelerated Vehicle Retirement Program
www.arb.ca.gov/msprog/avrp/avrp.htm
Not available in Mendocino County – vehicle must fail smog check

Enhanced Fleet Modernization Program
www.arb.ca.gov/msprog/aqip/efmp.htm
Not available in Mendocino County – vehicle must fail smog check

National Clean Diesel Campaign
www.epa.gov/diesel/grantfund.htm
Not available in Mendocino County - Federal non-attainment areas only.

Congestion Mitigation and Air Quality (CMAQ)
www.fhwa.dot.gov/environemt/cmaqpgs
Not available in Mendocino County - Federal non-attainment areas only.