COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
COMMENTS ON PROPOSED OFF-ROAD EQUIPMENT REGULATIONS

This regulation has been four years in development because of its evolving scope. Within the past twelve to fifteen months, two developments have been added to the regulation making compliance more difficult and far more costly. Those two developments are the expansion of the regulation to require a Nitrous Oxide (NOx) emission reduction and the requirement for Level 3 Diesel Particulate Filters or DPF.

Technology improvements have lead to the verification of two Level 3 devices (Diesel Particulate Filters) for many older diesel-powered engines covered by this regulation. These Level 3 devices also lower NOx emissions. Over the next twelve years, this regulation requires the upgrade of engines from Tier 0 standards to Tier 2 or Tier 3, either through upgrades or through machine replacement. It also requires the retrofit of Tier 2 or Tier 3 engines with the Best Available Control Technology (BACT).

As defined by this regulation, the County of Los Angeles Department of Public Works has more than 200 pieces of off-road equipment with a cumulative replacement value of $40 to $50 million.

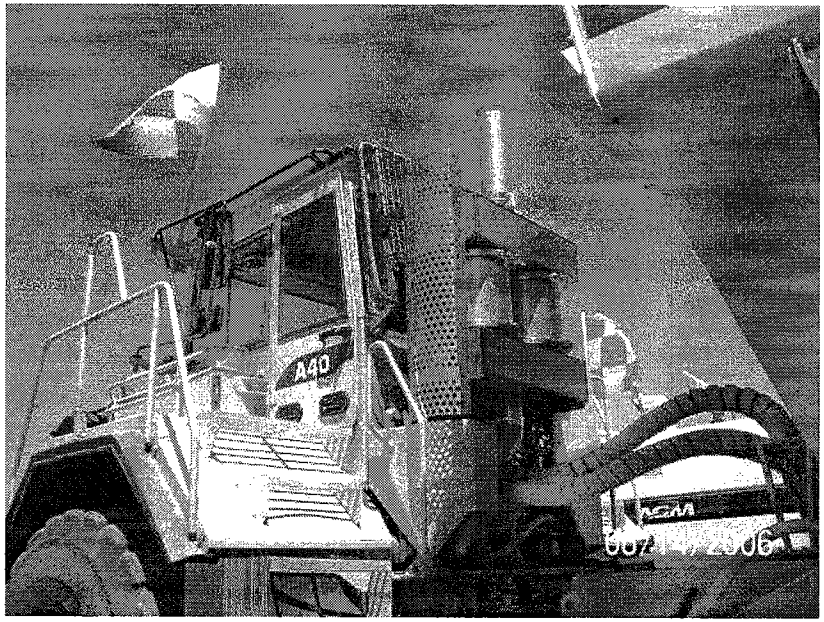
Beginning in 2009, this regulation requires Public Works to replace at least ten percent (by horsepower) of its diesel-powered off-road equipment each year through 2020. To comply with this regulation, Public Works will have to budget at least $4 to $5 million per year for replacement equipment (more than double its current replacement budget for its off-road equipment). The regulation also requires Public Works to upgrade and/or retrofit twenty percent of its diesel-powered off-road equipment per year. At an average cost of $20,000 per unit, this will cost Public Works an additional $800,000 per year.

Upgrading older diesel-powered off-road equipment with Tier 3 devices is not cost-effective. These newer Tier 3 engines require much larger cooling systems, electrical systems for computerized engines, and heavier-duty transmissions, rendering the upgrade of older equipment prohibitively expensive.

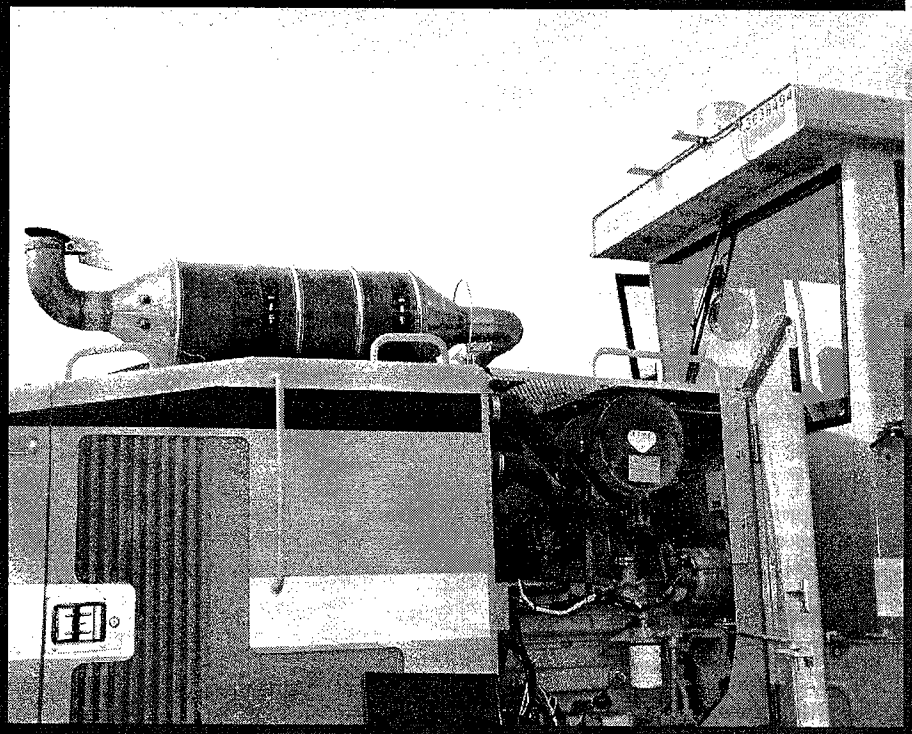
Proposed Regulation

Compliance Extensions

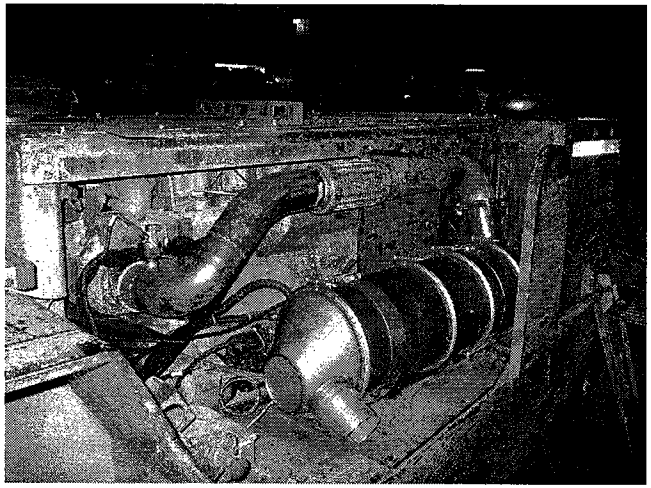
- Manufacturer delays
- No VDECS
- Experimental strategies

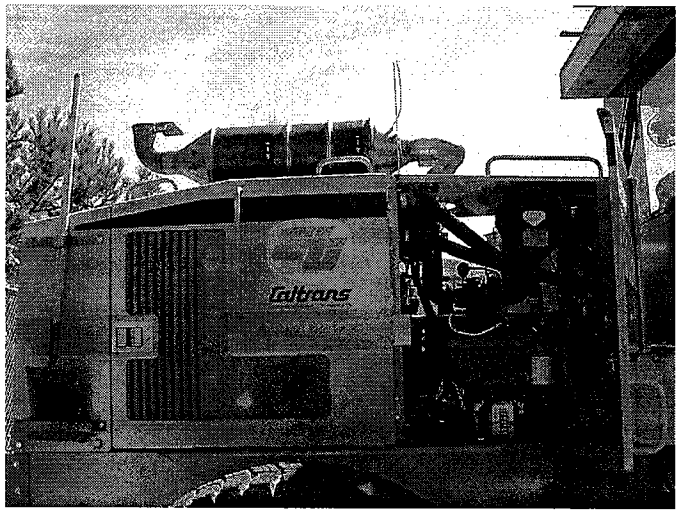


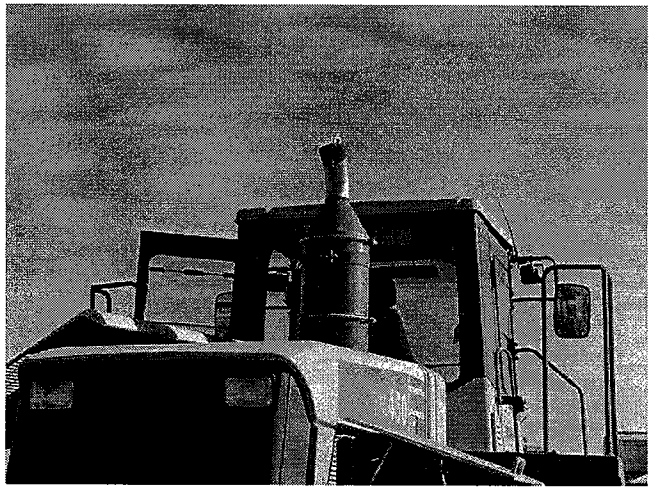
Off-Road Retrofit Installations of Lean NOx Catalyst + Filter Systems

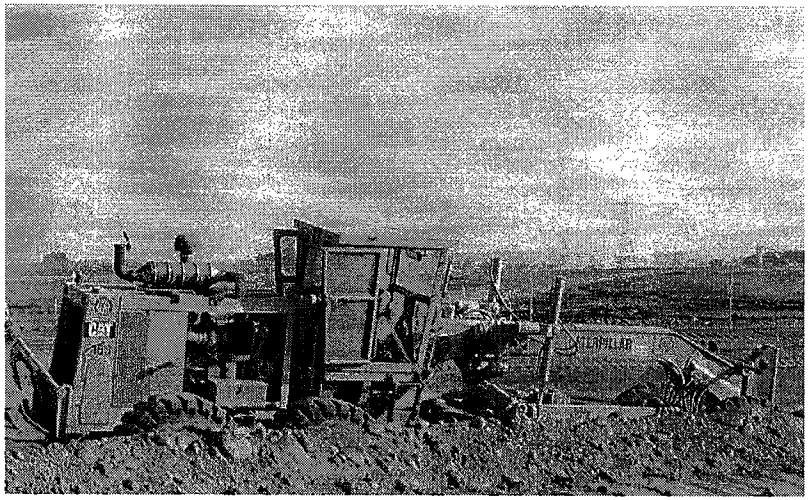


Longview Examples









cleaire
ADVANCED EMISSION CONTROLS

The two Level 3 devices recently verified for many of the covered off-road units, while very effective, are very costly and labor-intensive to maintain. The off-road units equipped with the other verified device require manual regeneration every four hours. At a cost of $14,000 to more than $30,000 per diesel-powered engine, these devices can easily cost many times what some of the older machines are worth. Off-road equipment equipped with one of the verified devices must be plugged in regularly for six hours to regenerate.

The most significant objections to the required retrofit devices are:

- Cost of compliance;
- The size and weight of the required devices;
- In many cases, the devices obstruct the operators' field of vision negatively impacting the safety of the worksite (please see attached pictures from prior CARB presentations);
- Machine vibration may lead to premature device failure;
- The time and expense for regeneration;
- Machine manufacturers and device manufacturers will unlikely be able to meet the ambitious timeline for compliance required by this regulation;
- The regulation makes no provision for likely future changes in fuels and equipment;
- There is no provision for revisiting this regulation; and
- There are no assurances that if a covered fleet complies with this regulation, the local Air Districts will not impose even more stringent regulations for covered equipment operated in their jurisdiction.

The typical service life for many of Public Works' off road equipment ranges from fifteen to more than twenty years. Unlike production machines at landfills, transfer stations, mines, quarries, or large construction firms, Public Works' equipment is not operated forty hours per week. Our equipment is typically operated 200 to 600 hours per year. Yet Public Works and other public agencies are required to comply with the same replacement and retrofit requirements as a landfill operator where the equipment usage is far greater.

We urge your Board to consider a dual-compliance path. If we have a 2005 or newer piece of equipment, or are ordering a new unit, we would probably retrofit it with one of the Level 3 devices provided that it did not obstruct the operator's field of vision or void the manufacturer's warranty. We would likely retrofit our mid-life equipment (Tier 0 or Tier 1 from the 1990s) with a Level 1 device. Within five years, we would seek to retire these units.

For many applications, there are verified Level 1 or Level 2 devices. These devices reduce PM emissions by 30 percent or more. These Diesel Oxidation Catalysts, or DOCs, are more readily available and are far less costly. They are generally the same size and only a little heavier than the standard muffler used on a diesel-powered engine. These verified devices may be installed as a direct replacement with no awkward mounting or obstruction of the operator's field of vision. There are no regeneration issues. They are far less likely to be damaged by vibration. At $3,000 to $4,000 each, these Level 1 or Level 2 devices are a fraction of the cost of the verified Level 3 devices.

Public Works is proposing that operators with lower-use machines be given options such as retrofitting existing machines with Level 1 or Level 2 devices. If retrofitting with a Level 1 or a Level 2 device, the owner would have five years from the date of installation to:

- Retrofit the machine with a Level 3 device,
- Replace the machine with a new or newer compliant machine, or
- Dispose of the machine.

This window of time would provide sufficient time for public agencies to develop and implement a compliance strategy.

For public agencies, like Public Works, this regulation will likely require some equipment to be replaced at less than half its typical lifespan. Private owners may not be able to recover their capital costs for their existing equipment, which likely has more than a ten-year life cycle. Because of the difference in usage, governmental agencies typically keep their equipment far longer (a twenty-year life is not uncommon).

We also suggest that retired units with Level 1 or Level 2 devices be eligible for sale to public agencies in rural or low population counties. This will ensure that those agencies accelerate the replacement of their old equipment. Selling to one of these units to government agencies would also ensure that the equipment does not find its way back into the urban areas of California.

Finally, Public Works anticipates significant changes in fuels. Changes include those to diesel fuel, or the blending of biodiesel with petroleum-based stocks. Conoco-Phillips will be getting the animal fats from Tyson. Chevron has taken a 20 percent stake in a large biodiesel production facility in the Houston shipping channel. In March 2007, Oryne of Irvine California received tentative approval from the State of Texas Commission on Environmental Quality for their additive to reduce NOx emissions from biodiesel. Perhaps Oryne's additive or a similar additive from Honeywell may reduce NOx emissions from petroleum-based or blended diesel fuel. We request that the alternative fuel section be expanded, more open, and inclusive of future fuel developments.

We ask that you require staff to report to your Board on a semi-annual basis on compliance and implementation issues. In spite of all the time and effort of all those involved in crafting this regulation, it is critical to recognize how dynamic this area is. It is essential that this regulation undergoes periodic review and that it is an evolving regulation.

Finally, Public Works is very concerned that local Air Districts may seek to impose even more stringent requirements. We recognize the air quality and toxicity issues and our role in reducing them. We will be struggling to find the means to comply with this proposed regulation. We request that there be a period of time, at least a few years, before local Air Districts are permitted to impose even more stringent regulations to limit emissions.

At some point, we know that compliance costs may limit our ability as an agency either to function or to comply with this and other regulations. We ask you to recognize our efforts and intentions and work with us to avoid either of these end results.

Attach.