

**Comments of the Manufacturers of Emission Controls Association  
on the Wisconsin Department of Natural Resources' Proposed Revisions  
to NR 411(Construction and Operation Permits for Indirect Sources)**

November 29, 2010

The Manufacturers of Emission Controls Association (MECA) is pleased to provide comments in response to the Wisconsin Department of Natural Resources' (DNR) proposed revisions to NR 411(Construction and Operation Permits for Indirect Sources). We commend the agency for its continuing efforts to implement effective control measures to reduce harmful emissions from in-use diesel engines.

MECA is a non-profit association made up of the world's leading manufacturers of emission control technology for motor vehicles. Our members have over 30 years of experience and a proven track record in developing and manufacturing emission control technology for a wide variety of diesel and gasoline on-road and off-road vehicles and equipment. A number of our members have extensive experience in the development, manufacture, and application of PM and NOx control retrofit technologies for in-use diesel engines.

**Introduction**

MECA fully supports DNR's proposed revisions to NR 411 (Construction and Operation Permits for Indirect Sources). In particular, MECA supports the changes that will shift the current focus of the rule away from carbon monoxide control from passenger cars and on to the issue of reducing diesel emissions from heavy-duty trucks and construction equipment since "emerging research suggests diesel emissions and fine-particle pollution represent a significant public health concern." As part of this focus on reducing diesel emissions, as noted in the Background Memo, the proposed rule revision includes an exemption option for sources that agree to adopt "superior environmental performance." Per the amended regulatory language, any superior environmental performance program shall address implementation of all of the following measures: 1) the use of diesel idle restriction; 2) the use of best management techniques to mitigate environmental impacts during construction and operation of the source; and 3) the use of verified control technology to further mitigate emissions from mobile and off-road sources.

Installing U.S. EPA- or California ARB-verified retrofit technology on in-use diesel engines is one of the most practical and cost-effective ways to reduce diesel emissions. Although construction applications can pose specific engineering challenges, the use of emission control technology for off-road diesel engines is not new. For over 30 years, off-road diesel engines used in the construction, mining, and materials handling industries have been equipped with emission control technology.

Both PM and NOx control technologies are being used today on off-road applications. PM emission control technologies currently available include diesel particulate filters (>85% PM reduction), flow-through filters (50-75% PM reduction), diesel oxidation catalysts (25-50% PM reduction), and crankcase filters (>90% reduction in crankcase emissions). NOx emission control technologies available include selective catalytic reduction (60-90% NOx reduction), exhaust gas recirculation (40-60% NOx reduction), and lean NOx catalysts (25-40% NOx reduction). (Note: NOx retrofit technologies are typically paired with a PM retrofit technology.) These systems have been installed on vehicles and equipment both as original equipment and as retrofit technology on over 250,000 off-road engines worldwide. This amount includes over 50,000

active and passive DPF retrofit systems. (For additional information on diesel retrofit technology, go to MECA's diesel retrofit website at: [www.dieselretrofit.org](http://www.dieselretrofit.org).)

### **Examples of Diesel Retrofit Programs for Construction Equipment**

Realizing the significant public health benefits that results from cleaning up emissions from existing off-road diesel vehicles, many other state and local governments in the U.S. have or are in the process of implementing regulations and/or incentive programs to retrofit in-use construction equipment with emission control devices. Several of these programs are summarized below.

- The California ARB adopted a regulation in July 2007 that requires that all fleets operating in-use off-road diesel vehicles in California must either meet fleet average emission requirements or repower and retrofit a given percentage of the fleet every year under the Best Available Control Technology (BACT) compliance requirements of the regulation. However, due to the economic recession, ARB has recently proposed revisions to the regulation that would delay implementation of the requirements for all fleets and specify phased-in fleet average emission limits from 2014 to 2023. The proposed regulatory changes offer a dual compliance path for fleets that would allow either retrofit devices or replacement of vehicles to comply with the emission targets. (The ARB Board will consider these proposed changes at its December 16, 2010 Board meeting.) For more information on ARB's in-use off-road diesel vehicle regulation, go to: [www.arb.ca.gov/msprog/ordiesel/ordiesel.htm](http://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm).
- Local Law 77 in New York City, signed into law in December 2003, requires any diesel-powered off-road vehicle (50 hp and greater), that is owned, or operated by or on behalf of, or leased by a city agency be powered by ultra-low sulfur diesel fuel and use best available retrofit technology. For example, the Croton Water Treatment Project in North Bronx, NY, successfully installed PM and NOx control devices (including passive and active DPFs) on over 30 pieces of construction equipment, including excavators, bulldozers, backhoes, and cranes. More information on the NYC Local Law 77 is available at: [www.nyc.gov/html/dep/pdf/l177.pdf](http://www.nyc.gov/html/dep/pdf/l177.pdf). Many of the counties surrounding NYC, as well as New York's Department of Environmental Protection, have since adopted similar regulations.
- The state of New Jersey requires the installation and use of best available retrofit technologies in diesel-powered commercial buses, solid waste vehicles that are publicly-owned or used to perform solid waste services under a public contract, and publicly-owned on-road vehicle and publicly-owned off-road vehicles with at least 175 hp. The regulation applies to anyone who owns off-road equipment and must retrofit the diesel equipment with Best Available Retrofit Technology (BART). The equipment must be retrofitted with BART no less stringent than Level 3 (reduce PM emissions by 85%) for off-road equipment higher than 175 hp. For more information, go to: [www.nj.gov/dep/stopthesoot/index.htm](http://www.nj.gov/dep/stopthesoot/index.htm).
- The Massachusetts Department of Environmental Protection (MassDEP) requires certain state agencies or programs that fund public construction projects in Massachusetts to include retrofit requirements in their contracts. These agencies or programs include the Massachusetts Highway Department (MHD), the Massachusetts Bay Transportation Authority (MBTA), and MassDEP's State Revolving Fund (SRF)

program. The Massachusetts Division of Capital Asset Management (DCAM) and the Massachusetts Port Authority (MassPort) also have retrofit requirements that they instituted separately from MassDEP. MHD, MBTA, and MassDEP do not specify the type of retrofit equipment to install, although each agency suggests installing a DOC or DPF. MassDEP's SRF program, DCAM, and MassPort specifically require that a verified DOC be installed on the equipment. For more information, go to: [www.mass.gov/dep/air/diesel/conretro.pdf](http://www.mass.gov/dep/air/diesel/conretro.pdf).

- In 2007, San Francisco's Board of Supervisors adopted a "Clean Construction" ordinance to reduce air pollution from public works projects in the city. The Clean Construction ordinance applies to "high-use" equipment used in city-contracted major construction projects, defined as projects that take 20 days or more of cumulative work to complete. Beginning in March 2009, contractors performing major public works projects in San Francisco had to: 1) use biodiesel in the off-road vehicles and equipment used on the job and 2) use construction equipment (25 hp or more) with engines that either meet EPA Tier 2 standards for off-road engines or use the "best available control technology." More information on San Francisco's Clean Construction law is available at: [www.sfenvironment.org/downloads/library/lawfactsheetsfenrdc4.16.08.pdf](http://www.sfenvironment.org/downloads/library/lawfactsheetsfenrdc4.16.08.pdf).
- In May 2009, Cook County, Illinois (greater Chicago), adopted a Green Construction ordinance. The ordinance will require all Cook County contractors working on public construction contracts budgeted at \$2 million or more to begin to use ultra-low sulfur diesel fuel for off-road vehicles and equipment immediately and phase-in the use of diesel retrofit technologies on uncontrolled on-road and off-road vehicles and equipment. For more information, go to: [www.cookcountyclerk.com/countyboard/DocumentLibrary/2009ordinances.pdf](http://www.cookcountyclerk.com/countyboard/DocumentLibrary/2009ordinances.pdf). In a similar action, in April 2009, Illinois Governor Pat Quinn signed an Executive Order on reducing the environmental impacts of state operations that also directs all state-funded road construction contracts in either ozone or fine particulate matter federal nonattainment areas to use clean construction practices. These clean construction practices include idling limitations, use of ultra-low sulfur diesel fuel, dust controls, and the use of at least Level 2 verified PM retrofit technologies (reduce PM emissions by 50%) on uncontrolled off-road equipment.
- In June 2010, the Rhode Island General Assembly passed a comprehensive clean construction regulation. The House and the Senate passed the clean construction law as part of the state's Diesel Emissions Reduction Act, which aims to reduce emission from diesel engines through an anti-idling program, an ultra-low sulfur diesel fuel use requirement, and a retrofit program for school buses and construction equipment. For more information, go to: [www.rilin.state.ri.us/BillText10/SenateText10/S2440Aaa.pdf](http://www.rilin.state.ri.us/BillText10/SenateText10/S2440Aaa.pdf).
- The city of Pittsburgh is in the process of adopting a new regulation that would reduce particulate matter and other diesel pollutant emissions from diesel construction equipment. Starting on January 1, 2011, the legislation would require contractors working on city-subsidized projects to use new or retrofitted equipment to reduce diesel emissions. More information on this is available at: [pittsburgh.legistar.com/LegislationDetail.aspx?ID=665363&GUID=61CB7424-FE95-4A21-8368-F53F9EE4BC1B](http://pittsburgh.legistar.com/LegislationDetail.aspx?ID=665363&GUID=61CB7424-FE95-4A21-8368-F53F9EE4BC1B).

## **Climate Change and Diesel Retrofit Technology**

The recent focus on climate change has sparked a discussion on the global-warming potential of black carbon. Black carbon is a major component of PM emissions from fossil fuel-burning sources and is believed to have a significant net atmospheric warming effect by enhancing the absorption of sunlight. The twenty-year global-warming potential of black carbon has been estimated to be more than 2,000 times greater than carbon dioxide. Since black carbon particles only remain airborne for weeks at most compared to carbon dioxide, which can remain in the atmosphere for more than a century, removing black carbon would have an immediate benefit to both global warming and public health. Black carbon from diesel engines, including diesel engines used in construction applications, can be significantly reduced through emission control technology that is already commercially available. High-efficiency DPFs on new and existing diesel engines provide a nearly 99.9% reduction in black carbon emissions.

### **Conclusion**

MECA fully supports the Wisconsin DNR's proposed revisions to NR 411 (Construction and Operation Permits for Indirect Sources). Installing verified retrofit technology on in-use diesel engines, including diesel engines used in construction applications, is one of the most effective ways to reduce diesel emissions. Many state and local governments have or are in the process of implementing regulations and/or incentive programs to retrofit in-use construction equipment with emission control devices. MECA member companies are committed to developing and commercializing retrofit technologies for in-use diesel engines used in off-road applications to help significantly reduce emissions from this category of engines.

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