

NORTH AMERICAN

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Cleaner Air Comes to PAPA



STATIONARY POWER



CleanAIR Systems has introduced E-POD, an emissions control technology designed to meet both the New Source Performance Standards (NSPS) for lean-burn natural gas and EPA Tier 4 diesel regulations. The E-POD combines CleanAIR's zeolite-based selective catalytic reduction (SCR) catalyst, diesel particulate filters (DPFs) or diesel oxidation catalysts (DOCs) and a reductant mixing system within an insulated, stainless-steel sound attenuation silencer package.

CLEANER AIR COMES TO PAPA

New emissions technology helps reduce emissions on drill rigs at Wyoming's Pinedale Anticline Project Area

BY MIKE OSENGA

With New Source Performance Standards (NSPS) for lean-burn natural gas engines right around the corner and EPA Tier 4 Final stationary compliance requirements an ongoing concern, CleanAIR Systems has introduced its new E-POD emissions control technology to meet both federal regulations. The Santa Fe, N.M., manufacturer said diesel and natural gas engine users with Tier 1 through Tier 3 engines — either existing or new — can meet these regulations by installing the E-POD.

The E-POD is the most recent emissions control technology introduced by CleanAIR, a manufacturer of catalyzed diesel particulate filters (DPFs), oxidation catalysts and selective catalytic reduction (SCR) technology.

The new E-POD system combines CleanAIR's closed-loop controller technology, product fabrication and emissions technologies to reduce four toxic pollutants: NO_x, PM, CO and HC.

The second and largest installation to date of the new E-POD system has recently been completed on seven Caterpillar 3512 diesel generator set units

operating on drill rigs in Wyoming's Pinedale Anticline Project Area (PAPA).

The design of the E-POD combines CleanAIR's nontoxic, zeolite-based SCR catalyst, diesel particulate filters or diesel oxidation converters and a reductant mixing system into a single insulated, stainless-steel, critical-grade (or super-critical) sound attenuation silencer package.

Specifically, the E-POD offers a range of operation from 518° to 1002°F exhaust temperatures. The E-POD integrates CleanAIR's nonvanadium, nontoxic flow-through Endure SCR



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catalyst with the company's wall-flow Permit Filter or Assure diesel oxidation catalyst (DOC).

The E-POD also features CleanAIR's "all-in-one" dosing cabinet, which combines an electronic control system and injection system into one unit. Using automatic data logging, programmable setpoints and basic internal diagnostics, the CleanAIR dosing cabinet is designed to offer uncomplicated operational control and monitoring of the E-POD system.

Each system is custom designed for specific installation requirements, CleanAIR said. The corrosion-resistant shell has two removable panels for full access to the SCR catalysts and DPFs mounted inside.

CleanAIR said the E-POD with DPFs enables Tier 4 final compliance for most diesel stationary engines. For lean-burn natural gas engines, CleanAIR incorporates oxidation converters to meet NSPS compliance. Further, CleanAIR said the E-POD meets hazardous air pollutant (HAP) regulations when used with the Assure oxidation catalyst, providing up to a 95% reduction of VOCs.

CleanAIR said the E-POD is also designed to fit and operate on any diesel or natural gas engine, allowing dealers to retrofit and service customer's mixed fleets without brand conflicts.

Working in conjunction with Caterpillar dealer Wyoming Machinery Co., Casper, Wyo., CleanAIR custom engineered the E-PODs for the PAPA application using DOCs. The units were installed on the seven Cat 3512 diesel generators between September 2008 and January 2009.

A drop-in design was developed for several of the E-PODs as a solution to

moving the system when relocating to a new drill site. Typically, SCR systems can be bulky and difficult to move, with most requiring dismantling, placement on a flatbed and hauling to the next drill location, where they are reassembled.

CleanAIR engineers addressed this by integrating the E-POD within the space constraints of the generator trailer. Designed to be lowered into place through an opening at the top of the trailer, the E-POD is installed above the generator, becoming part of the trailer's roof.

This approach, CleanAIR said, allows the emissions control unit to "disappear" from view. It also enables the E-POD to be transported along with the generator, without the added time and expense of dismantling, hauling or lifting a separate unit.

"Our goal was a simple design with durable components," said Ted Rasmussen, emissions business manager for Wyoming Machinery. "It had to withstand harsh conditions here in Wyoming, as well as tough drill rig conditions. We have seen NO_x emissions reductions of 90% and more under steady loads, and we like the fact that the E-POD system is upgradeable; by adding a particulate filter our customers can reduce PM emissions as well."

On-site emissions monitoring at the Wyoming PAPA installation supports the 90% NO_x emissions reduction reading, CleanAIR said. **dp**

The E-POD was designed to "disappear" from view in the diesel gen-set application at PAPA. The E-POD was designed to be lowered into place through an opening at the top of the trailer and was installed above the generator, becoming part of the trailer's roof.



Do you see an SCR system?

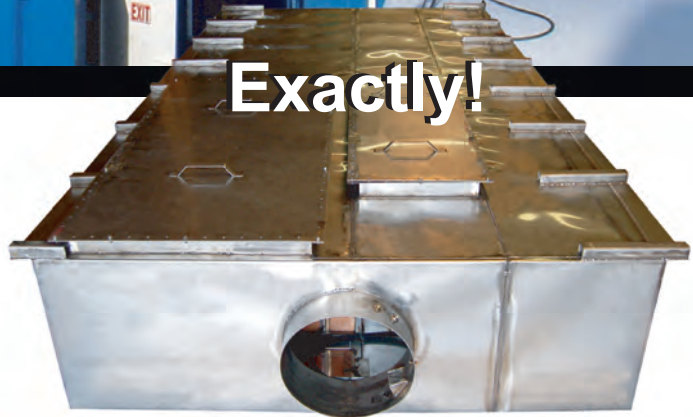


Exactly!

The E-POD™

Most SCR systems are bulky eye-sores.
At CleanAIR Systems, we custom-design
our E-POD to "disappear" from view!

Combining SCR + DPFs or DOCs + silencing,
the E-POD is your complete emissions solution
for reducing NOx, PM, HC and CO.



NSPS and Tier 4 Final compliance
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