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Dry Low NO_x Combustion System (DLN 1+)

GE's latest evolution of Dry Low NO_x Combustion System (DLN 1+) reduces NO_x emissions to between 3 and 5 ppm. This combustion system incorporates the latest in technology that improves stability and extends outage intervals.



imagination at work

Dry Low NOx Combustion System (DLN 1+)

The Environmental Challenge

In use since the 1930s, gas turbine combustion systems have created energy for oil recovery operations, jet engines, naval vessels and power plants. While reliable, each turbine emits 25ppm of NOx per year, contributing to the increasing levels of smog, which can have negative effects on human health. In April 2002, the San Joaquin Air Quality district revised rule 4703, mandating a reduction in NOx emissions from certain gas turbine plants to between 3 and 5ppm.

GE's innovative solution

For more than 20 years GE has been working to create advanced gas turbine combustion systems that are more environmentally friendly while reducing operating costs for our customers.

Until recently, the only available option for equipment owners who wished to upgrade their machines and reduce emission levels was to install post combustion systems called selective catalytic reduction (SCR) systems. Installation of SCR systems on existing units is often difficult due to site limitations and high costs. Additionally, SCR systems require the use of ammonia, which adds to the operating cost of the facility.

But GE has a better option. GE's DLN 1+ technology is a combustion system that replaces the existing gas turbine combustion system and guarantees NOx emissions to between 3 and 5ppm. DLN 1+ incorporates the latest technology, liner design, independent pilot fuel system and closed loop control system with tailored mixing and air dilution to ensure that the hot gas entering the turbine section does not impact component life.

Environmental Impact

Upgrading an existing DLN 1+ system to the latest DLN 1+ system will lead to a 45 percent to 67 percent reduction in NOx emissions per year. Switching just five turbines to the DLN 1+ enhanced units would be the equivalent of planting 300 acres of trees or taking 500 cars off U.S. roads.

Cutting costs

Beyond cutting emissions and benefiting the environment, these upgrades are cheaper to install and garner the machine owners increased savings by not requiring ammonia to run cleanly.

