



Technicians install an advanced low-NOx burner into a retrofitted boiler at Southern Company Services' Plant Hammond.

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Reducing Smog with Low-NOx Burners

Nitrogen oxides are one of the chief pollutants responsible for smog and ozone buildup, particularly in urban areas. Nitrogen oxides, or NO_x, are released from most combustion sources, including automobile engines and factories. Utility power plants are also a major emitter of NO_x, but today these plants have new ways to reduce these emissions at much lower costs - up to 10 times lower - than the technologies that would have been available without the Federal Government's research investment.

The type of Low-NOx Burner known as Cell Burners, demonstrated by Babcock and Wilcox under the federal Clean Coal Technology Program were the first to be sold commercially. Both Babcock and Wilcox and Foster Wheeler are also marketing their wall-fired low-NOx burners following successful tests in the Clean Coal Technology Program. ABB Combustion Engineering is also marketing its Tangential-Fired LNCF-III and T-2000 Low-NOx burners, both products of the Clean Coal Technology Program. Nearly a quarter of coal-fired capacity in the United States has installed these low-polluting burners. Sales to date exceed \$750 million and will approach \$4 billion by 2000.

Another NO_x control technology that has been commercialized is gas reburning - a technique in which natural gas is burned above the main coal-burning zone under conditions that break down NO_x pollutants into environmentally-benign gases.

Under the Clean Coal Technology program, gas reburning was successfully demonstrated on three types of boilers. All three reduced NO_x over 65 percent. Today the technology has been applied both to coal fired units and to boilers that fire other types of fuels. In February 1997, the Air and Waste Management Association announced that the technology was the winner of its *J. Deane Sensenbaugh Award* for a new commercially successful technology that meets or exceeds mandated standards.

Reburn technology is now being carried a step further. Rather than using natural gas as the reburn fuel, finely ground micronized coal can be used. Eastman Kodak at its Kodak Park in Rochester N.Y. facility is the first to demonstrate this technology and intends to use this technology on at least two other units upon successful completion of the Clean Coal Technology demonstration.