

COEN

TECHNOLOGY

SYSTEMS

IGNITER SYSTEMS

INNOVATIVE SOLUTIONS FOR THE POWER INDUSTRY

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COEN brings the Power Industry a full complement of combustion auxiliaries for any boiler application. With the most advanced igniter technologies in the marketplace for firing gas and No. 2 oil, COEN offers a variety of igniters for virtually any combustion application. Dual fuel capability and complete or partial retrofits will meet needs such as low opacity, flame stability, and light-off reliability.

COEN's versatile line of oil and gas warm-up guns and igniters are designed to provide high reliability and optimum system performance while efficiently meeting emissions requirements. In response to problems typically associated with original equipment igniter performance, such as premature flame shutdown, excessive fuel consumption and unacceptably high opacity, COEN's **patented CTL SMOKELESS IGNITER** technology ensures **instantaneous light-off, stable flames, complete combustion and smokeless operation.**

Benefits of COEN SMOKELESS IGNITERS

- Low Opacity (<5% Cold Boiler)
- Reliable Light-off
- Excellent Flame Stability
- Clean Flame
- Reduced Maintenance
- Retract or Non-Retract Option
- Low Cost
- Rugged Construction
- Faster Boiler Warm-up
- Multi-Fuel Capability

COEN WS-1 IGNITER Gas or Oil Igniter and Warm-up Gun

The COEN WS-1 warm-up gun is a packaged assembly of two widely used standard components: a COEN type MV (multiple venturi) air or steam atomizing oil burner and a High Energy Igniter (HEI). Together these units produce a highly reliable, clean burning warm-up burner that requires little maintenance.

**HIGH RELIABILITY · LOW OPACITY · PARTIAL OR COMPLETE RETROFIT
WALL-FIRED, T-FIRED, CYCLONE, TURBO · OIL OR GAS FIRING**

OIL-FIRED SMOKELESS IGNITERS CTL

The CTL Oil-Fired Igniter system is comprised of a high performance spray atomizer and an innovative flame stabilizer. Highly precise droplet size and distribution, coupled with unsurpassed flame stability provides cost savings and reduced boiler startup time.

WALL-FIRED BOILER RETROFITS

COEN's Wall-Fired Igniters use the **SMOKELESS IGNITER** technology to achieve ultra low opacity on cold boiler startups. Custom designed atomizers and igniter flame stabilizers are available to fit the burner geometry.

TANGENTIAL-FIRED BOILER RETROFITS

Sidewall Horn Igniter Systems CTL

COEN's CTL Sidewall Igniter system is designed as a performance upgrade to the original oil-fired igniter equipment on tangential-fired boilers. The igniter retrofit greatly improves atomization to provide an optimum spray pattern and fuel oil droplet size in the igniter horn. This atomization technique is also derived from COEN's **SMOKELESS IGNITER** technology.

CTL sidewall igniters can be applied as either single gun or dual gun igniters, with heat input ranging from 4-12 MMBtu/hr. Depending on the heat input, the CTL sidewall igniter can be classified as either a NFPA Class I or Class II igniter, rated for continuous operation, or Class III.

Primary Components:

- Igniter Gun and Atomizer Assembly With Pressure Control
- Sidewall Igniter Control Cabinet
- Flame Detectors (Scan or Flame Rods)
- High Energy Spark

Corner-Fired Warm-up Guns

COEN's innovative warm-up gun systems can serve as both the igniter and the warm-up gun on many tangential-fired boilers. Based on the **patented SMOKELESS IGNITER** technology, this system eliminates the need for pilot torch igniters or the use of manual techniques and can be easily integrated into an existing DCS or other control system.

GAS IGNITERS

High Stability and Low Maintenance

- A flame stabilizer ensures proper mixing of fuel and air.
- High energy spark system provides instantaneous light-off.
- Uniform gas flow pattern is produced in the combustion zone.
- Igniter inputs as high as 30 MMBtu/hr.



Reliable Oil Igniter Retrofit at **BELLE RIVER UNIT 2**

SITUATION

Detroit Edison (DTE) needed their newly purchased pulverized coal low-NOx burners to have reliable ignition. Detroit Edison requested COEN to review their current installation and make recommendations for upgrading or replacing the existing igniters.

Based on COEN's suggestions, Detroit Edison requested that COEN replace the existing igniters with new COEN igniters. The objectives were to achieve reliable light-offs and low opacity.

The original igniter arrangement, centered in the coal pipe, performed poorly due to steam purge from the pulverizers. This project was complicated further by a very aggressive delivery schedule to meet a late spring outage.

SOLUTION

The burners were not designed to accommodate igniters in the secondary air annulus. However, to achieve optimum reliability and improved performance, COEN's versatile Utility Combustion Team customized an igniter re-design to accommodate the tight area in the burner air annulus.

COEN utilized the proven CTL NRT04 No. 2 Oil Igniter as the base design for the replacement igniter. The low profile of the NRT04 igniter fit the tight burner air zone with minimal field modifications. The igniter guide tube was modified to a square tube to eliminate a field change to the coal pipe flange.

RESULTS

PERFORMANCE – From the first start of the new igniters, all COEN igniters had reliable and repeatable light-off.

REDUCED OPACITY – Opacity on a cold boiler was well below 10%.

COMPLETE CUSTOMER SATISFACTION – COEN provided superior equipment and reliability. COEN also met Belle River's timely delivery schedule as guaranteed. The OEM and end user were extremely satisfied with the COEN equipment and execution of this project.



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