JANSEN
Combustion and Boiler
Technologies, Inc.

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We invite you to visit our Web Page at **http://www.jansenboiler.com** for information about our company as well as general information about boilers. A regular feature of our page is a *boiler tip*. If you have a tip that you would like to share, or comments concerning information contained in our page, please send us an e-mail.

To contact us directly, please call:
(425) 825-0500 ext. 111

You may reach us by fax at:
(425) 825-1131.

What to do with HVLC NCG?

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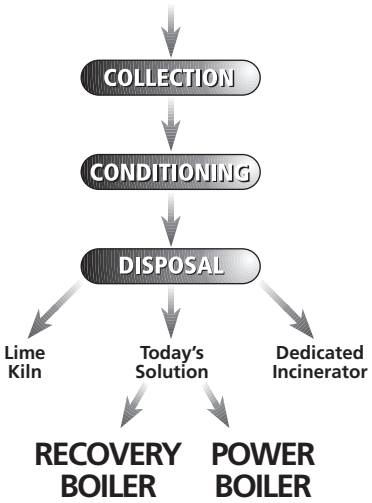
What to do with HVLC NCG?



Some approaches to High Volume Low Concentration (HVLC) noncondensible gas (NCG) disposal are expensive and can create operating and environmental problems. Furnace injection and rapid oxidation with the use of Jansen High Energy Combustion Air Nozzles has been proven to solve this disposal problem.

Problem
Solution

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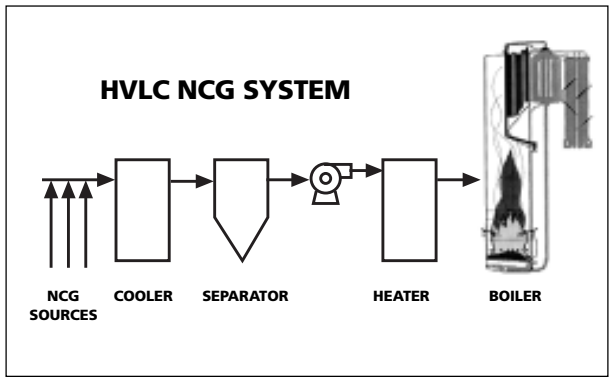
Problem Solution



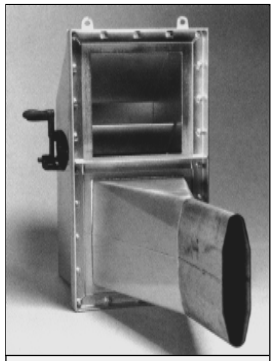
Dilute noncondensible gases (DNCG) are collected in a pulp mill from various sources, including brownstock washers and deckers, chip bins, digesters, blow tanks and accumulators, filtrate tanks, black liquor tanks, sewers, oxidizers, and many others. DNCG can conveniently be combined into one gas header for treatment. Gas coolers and preheaters are used to condition the DNCG prior to incineration.

DNCG quantities are usually 10,000 to 30,000 acf per ton of pulp, with TRS concentrations on the order of 50 to 250 ppm and combustibles, such as methanol, up to 2,000 ppm. Moist air makes up over 95% of the DNCG. It is perfectly suited for mixing with boiler combustion air.

Cluster rule legislation has been signed into effect and kraft pulp mills must collect and incinerate HVLC NCG before the year 2006.

Injection of DNCG into Boilers with Jansen Air Nozzles

There are several ways of disposing DNCG and the preferred methods vary from mill to mill. One method of DNCG disposal that has proved successful in numerous mills is mixing the gases with combustion air and injecting them into an existing boiler. Jansen High Energy Combustion Air Nozzles are a proven method for DNCG incineration with minimum disruption to normal operation. Jansen High Energy Combustion Air Nozzles have been used since 1986 on recovery and power boiler applications to improve combustion and increase fuel burning capacity. These patented nozzles are characterized by a design that efficiently converts static pressure in the windbox into high air velocity (kinetic energy) leaving the nozzle tip.



Jansen High Energy Combustion Air Nozzle

Jansen air nozzles achieve:

1. High air/DNCG mixture jet velocity at nozzle tip
2. Deep jet penetration inside the furnace cavity
3. Turbulent mixing of combustion air with combustibles at high temperature
4. Rapid oxidation of combustible materials, including DNCG injected with air
5. Clean flue gas conditions at the furnace outlet
6. Low TRS, CO, and VOC, emissions
7. Easy shut-off capability of the DNCG without interfering with boiler operations
8. No/low maintenance nozzle

DNCG have been disposed of in this manner for many years. The technology and long-term experience is available today.

Benefits of disposing DNCG in the boiler

- Low capital cost—no new incinerator equipment to purchase
- System is easy to install
- Combustion air system modifications also improve boiler performance
- Low operating cost—no additional fossil fuels are needed to oxidize the DNCG
- No detrimental effect on mill production and operational targets
- BLRBAC has developed recommended good practices to burn DNCG in recovery boilers

I am interested in learning more about HVLC NCG disposal by incineration in a power or recovery boiler.

Please send additional information and let's talk.

Name _____

Title _____

Company _____

Address _____

City _____

State/Province _____

Postal Code _____

Telephone _____

Fax _____

E-mail _____

Are you interested in disposal in a:

Power Boiler _____

Recovery Boiler _____

Approximate quantity of HVLC NCG at your mill:

_____