Jansen Co-hosts Boiler Workshop in Prague

In cooperation with Power Specialists Aseco (Inc.) of Larose, Connecticut, Jansen co-sponsored a two-day Boiler Workshop early September in Prague, Czech Republic. Participants in the workshop were from a variety of industrial plants, power producers, and interested associates from the Czech Republic, Slovakia, Poland, Austria, and Belgium.

Jansen made two technical presentations; these were:
• Principles of Biomass Combustion for Boiler Retrithos and Upgrades
• Improving Boiler Performance; Reducing Fuel Costs and Increasing Efficiency

This event marked the first-ever Jansen workshop in Europe. In North America, Biomass Bider Workshops have been held twice per year since 2000, with over 200 people attending. An encore for our upcoming, 2010 Biomass Workshop dates and locations is shown on page 4 of this newsletter.

Biomass Boiler Combustion System Upgrades

• An increase in biomass burning capacity of the unit (i.e., bark, hog fuel, wood residues). Typical increases range from 5% to 40%, depending on boiler size and customer requirements.
• Improvement of the unit’s ability to handle biomass/wood/bag, TDF, and sludge with a moisture content of over 50% in a wide range.
• Reduction or complete elimination of the need for fossil fuel co-firing (oil, natural gas, coal).
• Improvement of the unit’s thermal efficiency by reducing:
  • Excess air = Flue gas temperatures in the stack
  • Unburned carbon in the ash
• Reduction in carryover of fly ash and other inert material to minimize the abrasive impact of erosion on pressure parts, dusting, and I 2 fan
• Reduction in stack emissions of CO, NOx, and particulate matter (PM).
  • Average reduction in CO of 41%
  • Average reduction of NOx of 6%


Further detailed information of the Jansen approach and experiences in upgrading combustion systems of biomass-fired boilers, including CFA upgrades, can be found on our website (www.jansengoiler.com). As in previous years, in 2010, two biomass boiler workshops are being scheduled (see announcement of dates and locations on page 4).

For specific inquiries and/or references, please contact Arie Verloop at 432.952.2035, or Fred Dy at 432.952.2827 or e-mail us at info@jansengoiler.com.

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Boiler Cartoons on Jansen Website

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Jansen News

• The rising cost of fossil fuels, stricter regulatory emissions performance requirements, and the general desire to use more “green, renewable” energy sources have been the common motivation behind these projects. Compliant and significant increases in boiler performance and fuel economy have provided confidence to many of Jansen’s customers to have them come back for repeat business.

Upgrading the combustion system of existing biomass fueled boilers typically results in these benefits:

• Improving Boiler Performance; Reducing Fuel Costs and Increasing Efficiency

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Superheater and Economizer Upgrades to Increase In-House Power Generation
At the TAPPI 2008 Engineering, Pulp & Environmental Conference last Fall in Portland, Oregon, Jansen’s John La Fond presented a technical paper titled: Superheater Upgrades to Increase In-House Power Generation.

The paper discusses the following topics:

- Strategies to Increase In-House Power generation
- Boiler Steam Conditions to a New Steam Turbine Generator
- Boiler Steam Conditions to an Existing Steam Turbine Generator
- Maximizing Boiler Steam Production from Lower Cost Fuels
- By Improving Combustion
- By Increasing Thermal Efficiency with Additional Ecomaxor Surface

The paper provides process technical data to help the reader make more informed decisions on whether to pursue a project in this area. The information is based on recent Jansen superheater and economizer upgrade projects on low-cost steam, chemical recovery, and boilers in the E-F-AW industry.

To receive a copy of the paper or specific inquiries, please contact Arie Verloop at 425.952.2825 or by e-mail at Arie.Verloop@jansenboiler.com.

PROJECT DESCRIPTION
Superheater Replacement
Jansen designed and supplied a superheater replacement on a continuous duty, dual fuel and natural gas-fired boiler to the purpose of increasing the boiler’s rating and temperature. The unit was supplied by 600V in 1968 with minimum continuous rated (MCR) steam capacity of 600,000 lb/hr at 925°F and 1,030 psig but was unable to achieve this steam output. With the superheater replacement, the goal was to increase the final steam temperature to 1050°F from the existing 705°F temperature in the steam generating range of 220,000 lb/hr to full MCR capacity when firing a combination of hog fuel, lignite derived fuel (LDF), cotton seed, and natural gas or on natural gas alone.

With the exception of two headers the entire primary and secondary superheater assemblies were replaced with a new design by Jansen.

To meet the performance objectives the superheater surface area was increased by a factor of four and the tube metallurgy was upgraded, using a variety of metal grades and wall thicknesses as defined by the colors in the sketch.

The new support structure was also designed and delivered to carry the significantly increased assembly weights.

Jansen provided project management, engineering, materials procurement, fabrication, and delivery to the mill. The new superheater was installed during the plant’s annual outage in 2008.

In recent years, Jansen has participated in the revival of the E-W industry by carrying out the following projects:

- Superheater corrosion analysis.
- Feasibility studies for boiler fuel conversion from (coal fuel in AMWF/HRDF).
- Review of process/combustion design factors, pressure part evaluations, and circulation studies.
- Computational Fluid Dynamics (CFD) modeling of combustion performance and heat transfer characteristics.
- ASME Boiler and Pressure Vessel Code “S” pressure part design and supply.
- Efficient combustion air delivery systems, i.e., overfire air (OFA) upgrades.

For further information on this novel work and specific inquiries about potential future projects, please contact Arnie Verloop at 425.952.2825 or by e-mail at Arnie.Verloop@jansenboiler.com.

Environmental News
Reporting Greenhouse Gas Emissions - On January 1, 2010, the U.S. Environmental Protection Agency (EPA) will begin a new program to cover approximately 85 percent of the nation’s GHG emissions and apply to roughly 10,000 facilities. EPA’s new reporting system will provide a better understanding of where GHGs are coming from and will guide development of the best possible policies and programs to reduce emissions.

The data that was allowed for the first time to track their own emissions, compare them to similar facilities, and provide assistance in identifying cost-effective ways to reduce emissions in the future. This comprehensive, nationwide emissions data set will help guide the fight against climate change.

Greenhouse gases, such as carbon dioxide, are produced by burning fossil and biomass fuels and through industrial, agricultural, and other processes. Facilities that emit 20,000 metric tons or more of CO2 equivalent per year will be required to report GHG emissions data to EPA annually.

The first annual reports for the largest emitting facilities, covering calendar year 2010, will need to be submitted to EPA in 2011.

Since the audit is in an evolving assessment whether your facility’s plants/blocks will be required to report to the EPA under the new system and how to proceed in quantifying the amount. Contact Arnie Verloop at 425.952.2825 or by e-mail at Arnie.Verloop@jansenboiler.com

NEWS Briefs
Since our last newsletter, Jansen has conducted the process and design engineering projects in the Forest Products, Independent Power Producers, Energy-from-Waste, and other industries (several are in progress)

- Chemical recovery boiler multi-level air system upgrade.
- Combustion system upgrades for biomass boilers.
- Biomass and waste fuel boiler engineering evaluations (100% MCR, HRDF).
- Chemical recovery boiler performance evaluations and capacity studies.
- Boiler conversion to biomass burning studies and cost estimating.
- Recovery, biomass, and E-W boiler circulation studies and UFMS data collection.
- CEOA modeling of biomass, chemical recovery UFMS, and RDF-fired fuels.
- Boiler operational fine-tuning and optimization studies.
- New startup up-assistance and personnel training.
- Recovery boiler operation procedures review.

This work was conducted, or is currently in progress for the following companies:

- AES Corporation
- BORIS
- Corvus Pulp & Paper Company
- Catalyst Paper
- Cleamoun Paper
- Covanta Energy Group, Inc.
- Dismar Inc.
- Fasco Industries
- Georgia-Pacific LLC
- Great River Energy
- Hu Michau Biomass LLC
- Ifford Pacific Corporation
- International Paper Company
- Kaplin Papers
- Kimberly-Clark
- Knorr Organics, Inc.
- Longprone Fibre Paper
- Packaging Corporation of America
- Rayonier Inc.
- Rainco Holdings LLC
- Rock-Tenn Company
- Simpson Tacoma Kraft
- Smoother Storage Container Corporation
- Sunnoco Products Co.
- Syngenta Global LLC
- Thibaut Papers
- Tidewater Disposal Services, Inc.
- Wheeler Technologies, Inc.

For further information or the type of work, please contact Arnie Verloop at 425.952.2825 or by e-mail at Arnie.Verloop@jansenboiler.com. Additional information and specific project references are found on our website at: www.jansenboiler.com

Announcing Our 2010 Biomass Boiler Workshops
- New Orleans, Louisiana, June 11-10, 2010
- Minneapolis, Minnesota, November 16-17, 2010

Since 2000, these workshops have been attended by some 600 representatives of numerous plants in the Poly-Forest Products Industries, Independent Power Producers and Energy-from-Waste Industry.

The workshops consist of presentations about new technological developments and results to improve the operating performance, waste fuel burning capacity, efficiency, and fuel economy of biomass-fired boilers (mostly stoker-fired). In addition, the program will include troubleshooting and problem solving discussions of challenges that attendees bring to the workshop. Participants will benefit by: 1) learning about the current retrofit technology for biomass boilers and associated equipment; 2) seeing how other mill operators solve their biomass boiler area problems; and 3) receiving information and solutions to their mill specific problems.

The workshops are co-sponsored by:

- AES Corporation
- BORIS
- Corvus Pulp & Paper Company
- Catalyst Paper
- Cleamoun Paper
- Covanta Energy Group, Inc.
- Dismar Inc.
- Fasco Industries
- Georgia-Pacific LLC
- Great River Energy
- Hu Michau Biomass LLC
- Ifford Pacific Corporation
- International Paper Company
- Kaplin Papers
- Kimberly-Clark
- Knorr Organics, Inc.
- Longprone Fibre Paper
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- Rayonier Inc.
- Rainco Holdings LLC
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- Simpson Tacoma Kraft
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- Thibaut Papers
- Tidewater Disposal Services, Inc.
- Wheeler Technologies, Inc.

For sign-up and to review a detailed program of the technical presentations, workshop location, and ticket, etc., please visit Pat Austin or Cathy Thomas by phone at 425-952-2825 or by e-mail at Patrick.Austin@jansenboiler.com

Participants take notes during a past Biomass Boiler Workshop.

By The Leaders in Biomass Boiler Combustion System Upgrades

For further information or the type of work, please contact Arnie Verloop at 425.952.2825 or by e-mail at Arnie.Verloop@jansenboiler.com. Additional information and specific project references are found on our website at: www.jansenboiler.com

Inquiries should be directed to:

Jansen Boiler Systems, Inc.

Kirkland, WA 98034-6943

Phone: (425) 825-0500
Fax: (425) 825-1131

E-mail: editor@jansenboiler.com

Jansen Boiler Systems, Inc.
In recent years, Jansen has participated in the revival of the E-W industry by carrying out the following projects:

- Superheater expansion analyses.
- Feasibility studies for boiler fuel conversion (from prior fuel to MSW/RDF).
- Review of process/combustion design factors, pressure part evaluations, and circulation studies.
- Computational Fluid Dynamics (CFD) modeling of superheater performance and heat transfer characteristics.
- ASME Boiler and Pressure Vessel Code “S” pressure part design and supply.
- Efficient combustion air delivery systems, i.e., overfire air (OFA) upgrades.

For further information on this novel work and specific inquiries on potential future projects, please contact Arré Verloop at 455.952.2625 or by e-mail at Arré.Verloop@jansenboiler.com.

Environmental News

Reporting Greenhouse Gas Emissions – On January 1, 2010, the U.S. Environmental Protection Agency (EPA) will start the first time, require large emitters of heat-trapping emissions to begin collecting greenhouse gas (GHG) data under a new reporting system. This new program will cover approximately 85 percent of the nation’s GHG emissions and apply to roughly 10,000 facilities.

EPA’s new reporting system will provide a better understanding of where GHGs are coming from and will guide development of the best possible policies and programs to reduce emissions. The data will also be leveraged to help to train their own emissions, compare them to similar facilities, and provide assistance in identifying cost-effective ways to reduce emissions in the future. This comprehensive, nationwide emissions data collection will help to ignite the climate change fight.

Greenhouse gases, such as carbon dioxide, are produced by burning fossil and biomass fuels and through industrial and agricultural processes. Facilities that emit 20,000 metric tons or more of CO2 equivalent per year will be required to report GHG emissions data to EPA annually.

The first annual reports for the largest emitting facilities, covering calendar year 2010, will need to be submitted to EPA in 2011.

Jansen can assist in making an assessment whether your facility/plant/boilers will be required to report to the EPA under the new rule and how to proceed in quantifying the amount. Contact Arré Verloop at 455.952.2625 or by e-mail at Arré.Verloop@jansenboiler.com.

NEWS Briefs

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- Chemical recovery boiler multi-level air systems upgrade.
- Combustion system upgrades for biomass boilers.
- Biomass and waste fuel boiler engineering evaluations (Jansen, ASME, RCF).
- Chemical recovery boiler performance evaluations and capacity studies.
- Boiler corrosion to biomass burning studies and cost estimating.
- Recovery, biomass, and E-W boiler circulation studies and UFA data collection.
- CFD modeling of biomass, chemical recovery MSW, and RDF-fired boilers.
- Boiler operational fine-tuning and optimization support.
- Boiler startup-shutdown assistance and personnel training.
- Recovery boiler operations procedures review.

This work was conducted, or is currently in progress for the following companies:

- AES Corporation
- Borish Industries
- Carbofurn Pulp & Paper Company
- Caterpillar Paper
- Cleaneight Paper
- Covanta Energy Group, Inc.
- Domtar Inc.
- FPC Industries, Inc.
- Georgia-Pacific LLC
- Gencor Energy
- Hu Maus Development LLC
- Inland Pacific
- International Paper Company
- Kapiton Papers
- Kimberly-Clark
- Knuppr-Mtgavendak Inc.
- Longpine Fiber Paper & Packaging Inc.
- Metso Paper
- Umtetza Process
- MixWell
- Neenah Corporation
- New Ulm Public Utility
- Packaging Corporation of America
- Rayonier Inc.
- Radogging Holdings LLC
- Rock-Tenn Company
- Simpson Tacoma Kraft
- SmartStone Container Corporation
- Sonoco Products Co.
- Stappac Global LLC
- Thetford Papers
- Tuncar Diagnoses Services Inc.
- Wheelerstruder Technologies, Inc.
- Wisconsin Paper Mill

For additional information and specific project references, please contact Arré Verloop at 455.952.2625 or by e-mail at Arré.Verloop@jansenboiler.com.

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Superheater and Economizer Upgrades to Increase In-House Power Generation

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- Recovery, biomass, and E-W boiler circulation studies and UFM data collection.
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- Recovery boiler operation procedures review.

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- Cleanwater Paper
- Covanta Energy Group, Inc.
- Doramit Inc.
- Fluor Energy Partners
- Georgia-Pacific LLC
- Great River Energy
- HuMiN Biomass LLC
- International Paper Company
- Kapstone Papers
- Kimberly-Clark
- Knopp-Wyashegumek Inc.
- Longpine Fibre Paper
- Packaging Corporation of America
- Rayonier Inc.
- Refining Holdings LLC
- Rock-Turn Company
- Simpson Tacoma Kraft
- Smart-Stone Container Corporation
- Sonoco Products Co.
- Stoughton Global LLC, Inc.
- Thimble Papers
- Turkmen Diagnostics Services, Inc.
- Whistlerboard Technologies, Inc.
- Wisconsin Paperboard Company

For more information or to sign up for this newsletter, please contact Ann Verloop at 425.952.2625 or e-mail at Arie.Verloop@jansenboiler.com.
Boiler Conversions to Biomass Burning

Baker women/operators in recent years have been motivated to convert existing fossil-fuel-fired boilers to burn some, or exclusively biomass fuels. Biomass fuels often provide lower fuel costs and lower CO2 emissions as well as being considered a “green” renewable resource. Whether the boiler currently burns exclusively fossil fuels or burns a combination of fossil and biomass fuels, Jansen has the experience and capabilities to provide the necessary services to enhance biomass firing in most all boiler configurations.

A typical phased approach to fuel conversion projects is:

1) Initial assessment of feasibility and required modifications to generally budgetary costs.
2) Engineering evaluation of existing boiler to determine the unit’s capabilities when operating with the new fuel.
3) Conversion projects is:
4) “Green” renewable resource. Whether the boiler currently burns exclusively fossil fuels or burns a combination of fossil and biomass fuels, Jansen has the experience and capabilities to provide the necessary services to enhance biomass firing in most all boiler configurations.

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- Principles of Biomass Combustion for Boiler Retriefs and upgrades.
- Improving Boiler Performance; Reducing Fuel Costs and Increasing Capacity.

This event marked the first-ever Jansen workshop in Europe. In North America, Biomass Boiler Workshops have been held twice per year since 2000, with over 600 people attending. An encore for our upcoming 2010 Biomass Workshop dates and locations is shown on page 4 of this newsletter.

UPDATE ON Biomass Boiler Combustion System Upgrades

Since the late 1990s, Jansen has completed combustion system upgrades on over 600 biomass boilers. With this record, Jansen continues to supply the most biomass boilers in the combustion industry to the usage.

Typically, a combustion system upgrade includes modifications to the fuel and/or air delivery systems, particle capture, stack overfire, and overfire (OFA) supply. The rising cost of fossil fuels, stricter regulatory emissions performance requirements, and the end desire to use "green, renewable" energy sources have been the common motivation behind these projects. Completed and significant improvements in boiler performance and fuel economy have provided confidence to many of Jansen's customers to have them come back for repeat business.

Upgrading the combustion system of existing biomass-fueled boilers typically results in these benefits:
- An increase in biomass burning capacity of the unit (i.e., bark, hog fuel, wood residue). Typical increases range from 5% to 40%, depending on boiler size and customer.
- Improvement of the unit's ability to handle biomass/wood-fired, TDF, and sludge with a moisture content in a wider range.
- Reduction or complete elimination of the need for fossil fuel co-firing (oil, natural gas, coal).
- Improvement of the unit's thermal efficiency by reducing:
  - Excess air
  - Flue gas temperatures in the stack
- Unburned carbon in the ash
- Reduction in carryover of fly ash and other inert material to minimize the abrasive impact of erosion on pressure parts, dusting, and 82 fan.
- Reduction in stack emissions of CO, NOx, and particulate matter (PM).
- Average reduction in CO of 47%.
- Average reduction of NOx of 6%.


Further detailed information of the Jansen approach and experience in upgrading combustion systems of biomass-fueled boilers, including OFA upgrades, can be found on our website (www.jansenboilers.com). As in previous years, again in 2010, two biomass boiler workshops are being scheduled (see announcement of dates and locations on page 4).

For specific inquiries or references, please contact Ari Verloop at 425.952.2627 or Hidde Veen at 425.952.2827 or by e-mail to Arihe@farmin.com.

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- Prefer receipt by e-mail (no regular mail)
- Prefer receipt by regular mail (no e-mail)
- Prefer both mailings (mail and regular mail)
- If we do not hear from you, we will assume the third choice.

To receive this and upcoming Newsletters electronically, please send your e-mail address to Arihe@farmin.com and you will be included on the list.

BOILER NEWS

Jansen High Energy Combustion Air Nozzles for OFA supply are being successfully applied on Foster Wheeler biomass boiler in Bentley. When the upgrade is complete, the plant will be operating on "off the shelf" equipment.

Biomass Boiler Combustion System Upgrades

Boiler Carousers on Jansen Website

A collection of boiler house carousers can be viewed on our website: www.jansenboilers.com. Some 30 carousers by Gordon Saymon shown previously in this newsletter are presented on the site. Each carouser depicts a humorous situation with people and equipment in the boiler house. As you will agree, Card has the rare insight to find humor in the operation of power and recovery boilers and we hope you enjoy his cartoons as much as we do.

We Are Dedicated to Making the以下信息 please send your e-mail address to Arihe@farmin.com.

OUR MISSION

Our Company provides combustion and boiler technology, products, and services.

We are dedicated to making the following statement a reality:
- Focusing on the customer's respective needs and desires to expand current knowledge.
- Offering the most performance-effective solutions.
- Working with clients to implement these solutions.

Our Team has the expertise to make your project's experience in biomass conversion meet the highest standards of local, national, and international codes.

We are currently working on creating a challenging and supportive environment which will foster opportunities for professional growth, fulfillment, and rewards.

We Are Dedicated to Making the following Statement a Reality:

1. Focusing on the customer's respective needs and desires to expand current knowledge.
2. Offering the most performance-effective solutions.
3. Working with clients to implement these solutions.

Jansen has the capability and experience to carry out any or all of these steps.

For further information on this work and specific inquiries, please contact Ari Verloop at 425.952.2627 or by e-mail to Arihe@farmin.com.

Municipal Solid Waste and Refuse Derived Fuel

The Energy-from-Waste (E-f-W) industry consists of facilities that burn municipal solid waste (MSW) or other waste to produce electric and/or process steam and/or recover energy from biomass and refuse-derived fuel in order to dispose of these waste materials. Typically, these facilities also convert combustion heat to produce steam and generate electrical power.

Recently, the E-f-W industry has experienced a surge in activities that is caused by both economic and political drivers for growth of the industry. New regulations, in particular, have been passed by Euro nation and municipal government that require increased efficiency and reduced emissions. Improvements in the economic disposal of these waste fuels in combustion furnaces are addressed in projects such as:

- Expanding the waste fuel burning capacity and new existing furnaces.
- Improving the efficiency of the system's steam and power generation.
- Reducing metal corrosion rates and improve effective life span of the equipment.
- Convert combustion heat to emissions through improved combustion and/or application of emission control technologies.

Municipal Solid Waste and Refuse Derived Fuel

The Energy-from-Waste (E-f-W) industry consists of facilities that burn municipal solid waste (MSW) or other waste to produce electric and/or process steam and/or recover energy from biomass and refuse-derived fuel in order to dispose of these waste materials. Typically, these facilities also convert combustion heat to produce steam and generate electrical power.

Recently, the E-f-W industry has experienced a surge in activities that is caused by both economic and political drivers for growth of the industry. New regulations, in particular, have been passed by European and municipal government that require increased efficiency and reduced emissions. Improvements in the economic disposal of these waste fuels in combustion furnaces are addressed in projects such as:

- Expanding the waste fuel burning capacity and new existing furnaces.
- Improving the efficiency of the system's steam and power generation.
- Reducing metal corrosion rates and improve effective life span of the equipment.
- Convert combustion heat to emissions through improved combustion and/or application of emission control technologies.

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