The CISWI rulings were also re-proposed in December 2011. In addition to limits for filterable PM, CO, Hg, and other pollutants, the new rules propose:

- Biomass and MSW boilers engineering evaluations
- Chemical recovery boiler performance evaluations and capacity studies
- Boiler circulation studies
- Definition changes to refined fuel boilers, biomass capacity upgrades
- Conversion study of recovery boiler to biomass firing
- 1D and 2D modeling changes for biomass and RFD-fueled boilers
- Boiler operational fine-tuning and optimization support
- Boiler MACT, GACT, and GACT 17 ventilation and tuning

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

- Asia Pacific Resources International
- Australian Utilities
- Baha Specialty Cellulose
- Boise
- BP-Husky Refining LLC
- Brunswick Cellulose Inc.
- BTG Bliss Inc.
- Canexa Krets
- Catelow Papers
- Cleanstream Paper
- Cempa Energy

For further information on these types of projects, please contact Arie Verloop at 425-952-2825 or by e-mail at arie.verloop@jansenboiler.com. Additional information and specific project references can be found on our website at www.jansenboiler.com. 

**ATTEND OUR 2012 Biomass Boiler Workshops**

**• Minneapolis, Minnesota, May 10-11, 2012**

**• Savannah, Georgia, September 20-21, 2012**

Since 2000, these workshops have been attended by some 750 representatives of numerous plants in the Pulp/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-solution discussions of challenges that attendees bring to the workshop. Participants will benefit by:
- learning about the current retrofit technology for biomass-fired boilers associated equipment;
- seeing how other mill operations utilize their biomass boiler area to solve specific problems.

Deadline for sign-up is June 28-29, 2012 in downtown Prague.

For further information please contact Arie Verloop,

**NEWS Briefs**

Since our last newsletter (No. 38, Spring 2013), Jansen has conducted the following process and design engineering projects in the Forest Products Industry, Independent Power Producers, Energy-from-Waste, and other industries (many projects are in progress):

- **Combustion system upgrades for biomass and RDF-fired boilers.**
- **Recovery boiler upgrades and retrofits.**
- **Superheater, economizer, and tubular air heater upgrades and/or new supply.**
- **Biomass and MSW boiler engineering evaluations.**
- **Chemical recovery boiler performance evaluations and capacity studies.**
- **Boiler circulation studies.**
- **Definition changes to refined fuel boilers, biomass capacity upgrades.**
- **Conversion study of recovery boiler to biomass firing.**
- **1D and 2D modeling changes for biomass and RFD-fueled boilers.**
- **Boiler operational fine-tuning and optimization support.**
- **Boiler MACT, GACT, and GACT 17 ventilation and tuning.**

How Jansen Can Help?

Jansen boiler sales/technical experts are ready to determine how a boiler MACT (GACT and GACT 17) compliance regulations impact boiler selection and provide a basis for the evaluation of boiler’s combustion characteristics, including tuning options. If operational improvements are not sufficient to meet the new emissions requirements, Jansen can provide combustion system upgrades and team with the installation equipment suppliers to provide solutions to meet the new requirements.

For further information and specific inquiries, please contact John A. Fedo at 455-952-2833 or Brian Verret at 425-952-2825 or by e-mail at john.fedo@jansenboiler.com.

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For further information please contact Arie Verloop, Jansen Combustion and Boiler Technologies, Inc., 11204 NE, Suite 200, Kirkland, WA 98034-9843 Phone: 425-952-2825 Fax: 425-952-1311 E-mail: ad@jansenboiler.com.

**OUR MISSION**

Our Company provides combustion boiler, and energy technologies products, and services.

We are dedicated to working with our clients to help achieve best practices in reliability, efficiency, safety, and environmental goals.

We accomplish this by:
- Listening to our clients
- Providing a flexible approach to problem solving
- Developing creative and innovative solutions
- Fostering a close relationship with our clients

We cannot succeed in creating a challenging and successful future for Jansen boiler unless better opportunities for professional growth and development are secured.

We are dedicated to the highest standards of professional ethics and integrity.

We are dedicated to working with our clients to help define their operational goals.

Our team works hard to achieve the highest level of performance, waste fuel burning capacity, efficiency, and fuel economy of biomass-fired boilers (mostly stoker-fired).

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Jansen Projects in Canada

In Canada, the department of Natural Resources has implemented the pulp and paper Green Transformation Program (GTP), a total of CADS 1 billion has been made available to mills for capital projects that have a positive impact on the environment, energy efficiency, and expanded use of renewable fuels. This past year, Jansen completed several projects that were supported by the CTP in mills in Kamloops, Port Alberni, Prince George, Queenie (ad BC), and Windsor (ON).

UPDATE ON Biomass Boiler Combustion System Upgrades

Since the late 1990s, Jansen has designed and supplied combustion system upgrades on over 65 solid biomass- and RDF-fired boilers. Currently, projects are underway for several additional units, with planned installations later this year.

Typically, a combustion system upgrade includes modifications to the biomass fuel and/or air delivery systems, particularly the fuel delivery distribution and overfire air (OFA) supply, as depicted in the sketches on the right. Jansen OFA system upgrades have provided significant reduction in CO emissions (reductions by more than half) thus providing an excellent tool for meeting Boiler MACT requirements.

Further detailed information of the Jansen approach and experiences in upgrading combustion systems of biomass-fired boilers, including OFA upgrades, can be found on our updated website (www.jansenboiler.com) with detailed project descriptions and past Newsletter articles.

John F. La Fond, P.E. took over the position of President from Edward “Ned” C. Dye, P.E., who has been in this position since 1997. Under Ned’s leadership, the company has experienced significant growth and has solidified its reputation in the evaluation and retrofitting of industrial boilers in the forest products, waste-to-energy, independent power producer, and other industries. John received his undergraduate degree in Mechanical Engineering from Stanford University and his Master’s degree from the University of California, Berkeley. Since 1983, he has worked in the area of combustion, air pollution control, energy utilization, boiler design, boiler flow modeling, and project management. John has had a distinguished career with Jansen since 1989, most recently as Manager of Process Technologies.

Ned retains the position of Chairman of the Board at Jansen and will be working with John in this transition. The recent change in the company’s leadership is the next step in our strategic planning to ensure the longevity of the company. By making this a smooth transition, the continuity of management and expertise is guaranteed, which will enable Jansen to continue to provide high quality, safe, and reliable services to our clients.

John and Ned can be reached at John.lafond@jansenboiler.com, phone: (425) 952-2827

Edward “Ned” C. Dye, P.E. Chairman of the Board


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Edward “Ned” C. Dye, P.E. Chairman of the Board

For general information or specific inquiries, please contact Ann Verloop at 405/952-2621 or e-mail at ann.verloop@jansenboiler.com.

For further information on actual upgrade projects, please contact Anna Verloop at 405/952-2621 or e-mail at ann.verloop@jansenboiler.com.
UPDATE ON
Biomass Boiler Combustion System Upgrades

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Readers may wish to attend one of Jansen’s Biomass Boiler Workshops. As has been the case for over ten years, biomass boiler workshops will be held in two locations in 2012: Minnesota (May 10-11) and Savannah, Georgia (September 20-21). For sign-up details and further information about these workshops and locations, see the announcement on page B.

Changing the Guard at Jansen
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Ned retains the position of Chairman of the Board and will be working with John in this transition. The recent change in the company’s leadership is the next step in our strategic planning to ensure the long-term success of the company by making this a smooth transition, the continuity of management and expertise is guaranteed, which will enable Jansen to continue to serve its valued customers.

Edward "Ned" C. Dye, P.E. Chairman of the Board

Jansen WELCOMES
Roger Lawton
We are pleased to announce that Roger Lawton has joined Jansen, starting in late February 2012. Roger will be working out of the Atlanta area as a Senior Consultant.

Roger has over 35 years experience in project technical, engineering, management, and business development with boiler and utility plants. His prior employers include ABS Combustion Engineering, Tampella Power Corp., Allison Corp. and lastly Anthony-Ross Company, in Vice-President Sales.

He has broad experience in design and operation of Chemical Recovery and Biomass Boilers, particularly in the areas of combustion and operational performance. To date, Roger has been a strong focus on customer relations and developing international markets. He holds a B.S Civil Engineering and a MBA in Finance, both at the University of Tennessee.

Some of you may know Roger because of his participation in BLRAC, TAPP, and the International Chemical Recovery Conference, etc.

Roger can be reached by phone at (425) 378-0772 or e-mail: roger.lawton@jansenboiler.com. If you know Roger, do drop him a line!

Moriel Arango
We are also pleased to announce that Mori Colome has joined Jansen in November 2011. Earlier this year, Mori graduated from the University of Tennessee where he focused on Mechanical Engineering.

At UUTC, he was a graduate research assistant for the Laboratory for Energy and Environmental Combustion where he researched the implementation of “in-stream” energy conversion devices.

Moriel is a passionate outdoor enthusiast including rock climbing, alpine mountainering, backpacking and wilderness medicine. He has been a professional snow sports instructor, and enjoys scuba diving. Also, he is a 2011 certified independent Spanish tutor.

Moriel can be reached by phone at (425) 952-2827 or e-mail: moriel.arango@jansenboiler.com. Please join us in welcoming Moriel.

Visit Jansen’s Booth at Upcoming Conference Trade Shows
Jansen will again be present at several upcoming industry conference trade shows and exhibitions.

- From April 16-17 we will be at the International Biomass Conference and Expo at the Colorado Convention Center, Denver, Colorado.

- One week later, from April 23-25, we will be at the 20th Annual North American Waste-to-Energy Conference (NAWTEC) in Portland, Maine.

- On June 13-15, we will be at the 9th International Bioenergy Conference and Exhibition to be held in the City of Manchester, UK.

- If you happen to be attending any of these conferences, do come visit us.

The Energy-from-Waste (E-F-W) industry consists of facilities that burn municipal solid waste (MSW), refuse-derived fuel (RDF), combustion-derived CO, and sometimes biomass in order to dispose of these waste materials. Typically, these facilities also convert the heat from waste gas, and in some cases liquid, into useful energy.

Jansen has been providing mechanical and equipment services for the supply of combustion system upgrades, including OFA, at our RDF boilers in operation at several different E-F-W facilities in the US. For a copy of that newsletter article, visit http://jansenboiler.com/publications/newsletters/

At facility “B” in the article, after the successful upgrade of one RDF unit, two (2) additional, RDF units continued to be in operation in their original configuration. Because of the significant operational improvements that were achieved by the first unit, the plant decided to base Jansen supply the combustion system upgrade of the second unit as well. This upgrade was installed in March of 2012.

Again, as seen on the first unit, significant improvements are being experienced immediately after start-up, mainly in terms of reduced CO and NOx emissions. All press time is valuable and all information that the plant is that the project is going smoothly, thus looking forward to Jansen supplying the upgrade on the third and last unit as well.

For further information a copy of the article, write Moriel Arango at marango@jansenboiler.com.

Continued from page 1

RDF Boilers

RDF is a valuable by-product of the municipal solid waste (MSW) collection and transportation system. RDF is combusted for recovery of energy, typically in RDF boilers.

The RDF biomass is fed to the combustion system and a “primary air” flow is supplied to the combustion zone to provide the heating value of the RDF to achieve complete combustion. As the RDF reaches the temperature for catechol melting (220°F to 260°F), the RDF is converted to a liquid soot called “cake”.

The RDF cake is then fed directly to a grate that has openings large enough to allow the RDF cake to pass through the grate structure. The RDF cake then enters the combustion chamber where it is combusted to produce heat, electricity, or both.

RDF combustion systems are typically designed for a maximum of 65% load fluctuations by the RDF feed rate. For each load fluctuation, the RDF cake is fed to the combustion system to avoid problems in the grate system.

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For general information or specific inquiries, please contact Verloop at 405-952-2825, or by e-mail at arie.verloop@jansenboiler.com.

Boiler House Cartoons on Jansen Website
A collection of boiler house cartoons can be viewed on our website: www.jansenboiler.com

Dolly Cartoons by Gordon Sloves shown previously in this newsletter are presented once again on this page. Each cartoon depicts a humorous situation involving people and equipment in the boiler house.

As you will agree, Dolly 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.
Jansen WELCOMES

Roger Lawton. We are pleased to announce that Roger Lawton has joined Jansen, starting in late February 2012. Roger will be working out of the Atlanta area as a Senior Consultant.

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He has broad experience in design and operation of Chemical Recovery and BioMass Boilers, particularly in the areas of combustion and operational performance. He has been a key force in building a strong focus on customer relations and developing international markets. He holds a B.E in Civil Engineering and a MBA in Finance, both at the University of Florida.

Some of you may know Roger because of his participation in BILRAC, TAPPY, and the International Chemical Recovery Conference, etc.

Roger can be reached by phone at: (404) 758-0172 or e-mail: roger.lawton@jansenboiler.com. If you know Roger, drop him a line!

Moriel Arango. We are also pleased to announce that Moriell Arango has joined Jansen in November 2011. Earlier this year, Moriell graduated from the University of Washington with a Masters in Mechanical Engineering. At UW, he was a graduate research assistant for the Laboratory for Energy and Environmental Combustion where he researched the implementation of an “in-stream” energy conversion device.

Moriel is a passionate outdoor enthusiast including rock climbing, alpine mountaineering, backpacking and wilderness medicine. He has been a professional snow sports instructor, and enjoys scuba diving. Also, he is a PHEC certified independent Speaking Engager for the medical, social and legal sectors.

Moriel is working as a Junior Engineer in Jansen’s Process Technologies department. He can be reached by phone at: (425) 952-2831 or e-mail: moriel.arango@jansenboiler.com. Please join us in welcoming Moriell!

Jansen invites you to visit Jansen’s Booth at Upcoming Conference Trade Shows

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• If you happen to attend any of these conferences, do come visit us.

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John and Ned can be reached at:

John: john.lafond@jansenboiler.com, phone: (425) 952-2832

Ned: ned.dyson@jansenboiler.com, phone: (425) 952-2827

Boiler House Carcass on Jansen Website

A collection of boiler house carcasses can be viewed on our website: www.jansenboiler.com. Over thirty carcasses by Gordon Stevens shown previously in this newsletter are presented for your review of the site. Each carcass depicts a humorous situation more closely to our equipment and the way we approach our work. As you will agree, Gard 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.

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The investment in bioenergy conversion has been in full swing since the late 1990s. Since then over 65 solid biomass and RDF-fueled boilers have been designed and supplied by Jansen.

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ATTEND OUR 2012 Biomass Boiler Workshops

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• Savannah, Georgia, September 20-21, 2012

Since 2005, these workshops have been attended by some 750 representatives of numerous plants in the Pulp/Forest Products Industries, Independent Power Producers and Energy-from-Waste industry.

The workshops consist of development of new technological developments and improvements to 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 with associated equipment; 2) sharing how other mill operations utilize their biomass boiler areas, including presenting receiving information and solutions to their specific problems. Attendance of the workshops is limited and on a first-come, first-served basis.

The workshops are co-sponsored by:

- Jansen Co-hosts Boiler Workshop in Cooperation with Professional Systems Associates (PSA)

In Prague

The December 2011 re-proposed MACT rules included several changes. Some of the more important changes included:

- Work practice standards in place of numerical limits for dioxins/furans.
- The addition of more biomass fuels and fuel subcategories to widen the range of conditions. For example, there is now a stoker boiler subcategory for kiln-dried biomass.
- Alternative use of a CO CEMS-150-150 rollover per row of annual stall tests.
- Revisions to some of the emissions limits. For example, CO emissions for existing biomass stoker boilers was reduced from 490 ppm, dry 8% O2 to 790 ppm, dry 8% O2, when tested annually, although the CO CEMS limit was set lower at 410 ppm, dry 9.3 O2.
- No requirement any longer for biomass units.
- The requirement that an O2 trim system be in service for control when not using a CO CEMS was added.

The CSWI rules were also re-proposed in December. In addition to limits for filterable PM, CO, Hg and Hg in coal, these contained in Boiler MACT, the CSWI rules for NOx, SO2, Cd, Pb and dioxins/ furans. Many biomass boilers face the possibility of being classified as CSWI units because they fire alternative fuels along with biomass (such as OCC waste or construction/demolish debris that can contain plastics). Besides the confusion generated by the changing Boiler MACT and CSWI rules and implementation periods, boiler owners/operators have been challenged to understand their boilers’ emissions profiles and combustion characteristics.

Jansen has been assisting clients with determining how the Boiler MACT and CSWI regulations will impact their operations and provide solutions for units that would exceed the new limits.

Jansen Co-hosts Boiler Workshop in Cooperation with Professional Systems Associates (PSA)

In Prague

The December 2011 re-proposed MACT rules included several changes. Some of the more important changes included:

- Work practice standards in place of numerical limits for dioxins/furans.
- The addition of more biomass fuels and fuel subcategories to widen the range of conditions. For example, there is now a stoker boiler subcategory for kiln-dried biomass.
- Alternative use of a CO CEMS-150-150 rollover per row of annual stall tests.
- Revisions to some of the emissions limits. For example, CO emissions for existing biomass stoker boilers was reduced from 490 ppm, dry 8% O2 to 790 ppm, dry 8% O2, when tested annually, although the CO CEMS limit was set lower at 410 ppm, dry 9.3 O2.
- No requirement any longer for biomass units.
- The requirement that an O2 trim system be in service for control when not using a CO CEMS was added.

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How Jansen Can Help?
Jansen helps boiler owners/operators to determine how Boiler MACT (GACT or CSWI) regulations will impact your boiler and provide an evaluation of the boiler’s combustion characteristics, including tuning tips. If operational improvements are not sufficient to meet the new emissions requirements, Jansen can provide combustion system upgrades and team with the equipment suppliers to help simplify with the new regulations.

For further information and specific inquiries, please contact John [La Foard at 425.952.2923 or [email] at 425.952.2825 or [email]

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ATTEND OUR 2012 Biomass Boiler Workshops

• Minneapolis, Minnesota, May 10-12, 2012
• Savannah, Georgia, September 20-21, 2012

Since 2005, these workshops have been attended by some 750 representatives of numerous plants in the Pulp/Forest Products Industries, Independent Power Producers and Energy-from-Waste industry.

The workshops consist of development of new technological developments and improvements to 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 with associated equipment; 2) sharing how other mill operations utilize their biomass boiler areas, including presenting receiving information and solutions to their specific problems. Attendance of the workshops is limited and on a first-come, first-served basis.

The workshops are co-sponsored by:

- Jansen Co-hosts Boiler Workshop in Cooperation with Professional Systems Associates (PSA)

In Prague

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NEWS Briefs
Since our last newsletter (No. 38, Spring 2013), Jansen has conducted the following projects and design engineering projects in the Forest Products, Independent Power Producers, Energy-from-Waste, and other industries (many projects are in progress):
- Combustion system upgrades for biomass and RDF-fired boilers.
- Recovery boiler upgrades for increased recovery efficiency and NOx reduction.
- Superheater, economizer, and tubular air heater upgrades and/or new supply.
- Biomass and MSWI boilers engineering.
- Chemical recovery boiler performance evaluations and capacity studies.
- Boiler circulation studies.
- Design engineering for fuelled coal boiler biomass capacity upgrade.

In our previous Newsletter one year ago, we reported that the EPA issued a Delay Notice in May 2011 to suspend the effective dates for Boiler MACT and CISWI. An amended set of Boiler MACT and CISWI rules was approved in December 2011 and was accepted by the court or be brought under further challenge through litigation.

Meanwhile, the EPA has continued to review industry comments and available data to implement these solutions. Shortly after releasing these amended rules, a court order stayed the Delay Notice, causing the March 2011 rulings to be put into effect. The EPA then reconsidered the rules.

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