Michel Buron

From: Jef Mestdagh [jme@vyncke.com]
Sent: Wednesday, 24 December, 2003 10:50 AM
To: leong@hartalega-bb.com.my
Cc: mlkuan90@yahoo.co.uk
Subject: Limitation of the capacity of the heaters and new proposal for modification

The following recipients have been internally mailed in vyncke : Francis Hartmans, Peter Vyncke, Hans Fastenaekels, Kurt Deboodt, Chris Decaluwé

Dear Mun Leong,

As explained during our phone conversation today:

Conclusion after testing:

Not only based on our testing last week but also based on the tests done during the presence of Hans Fastenaekels we can conclude that each heater is running confortably on 5 Gcal/h. It is maybe possible that the heaters can run at higher capacity (up to 5.5 Gcal/h) but we also found during the tests of Friday 19.12 that we cannot reach the 6 Gcal/h. Together with our engineers involved in this project we do consider the limit of 5 Gcal/h as very safe and we suggest to limit the total capacity of the two heaters to 10 Gcal/h.

Today we have understood that you want our quick advice how to modify the thermal heating circuit so that you can get maximum 10 Gcal/h out of the heaters as soon as possible. We will come back with a proposal for this.

3rd heater

Furthermore to recap on the issue of the 3rd heater, we have initially made the proposal to install a 5 Gcal/h heater, firing shells only, to generate 4 Gcal/h Thermal Oil and 1 Gcal/h Hot Water. During the discussions it was asked to install a heater that can generate 7 Gcal/h (6+1) instead.

Today we must inform you that we cannot generate such high capacity with the concept of heater, as explained. The max. thermal oil heating capacity of the 'vertical heater' is 4 Gcal/h, but, with an extra hot water economiser for 1 Gcal/h, the total of 5 Gcal/h can be reached.

Furthermore it was clear that Hartalega preferred a solution that would not require surplus amount of nut shells. To anticipate on future shortage in biomass, Natural Gas would be the preferred as fuel.

Therefore we make a different complete proposal:

Proposal

To improve the capacity and efficiency of the existing heaters, by installing extra heating exchangers : one extra big thermal oil economiser (size of each unit will be approx. 3 x 2.5 x 1 meter !) between the extra heater and the dust collector, and one extra hot water generator behind the dust collector and the IDfan. To add the economiser and the hot water generator, we will require the replacement of the ID-fans and frequency convertors too.

Not only with these modifications we will be able to generate an extra 2 Gcal/h, but we would also increase the efficiency of the heaters with 6% !

With an extra 2 Gcal/h the heaters will only be able to generate 12Gcal/h in total. Therefore we would install an extra

gas-fired heater that covers the difference of 3Gcal/h thermal oil heating capacity.

Advantages of this proposal:

* We don't boost the firing capacity, furnace temperature remains at preferred limit;
* No extra lots of space requirement for another biomass fired heater. Most probably you don't need to remove your prototype production line for the extra gasfired heater;

* To cover the difference of 3Gcal/h you will use gas (your preferred fuel for the future) instead of palm nut shells;

* For the existing heaters your biomass fuel consumption (EFB & Shells) will be reduced by 6%;
* Target for completion of the modification and the installation of the extra heater remains July2004.

Above information is for your kind consideration. Your ideas and suggestions are welcome. Please feel free to call me on my hp anytime.

Meanwhile we look for how to help you to make modifications in the thermal oil circuit so that the existing heaters can run at 10 Gcal/h as soon as possible.

Best regards and Merry Christmas,

Jef Mestdagh
Vyncke

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