Georgia-Pacific

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January 31, 2007

Mr. Jeffery F. Koerner
Air Permitting North Section
Bureau of Air Regulation
Florida Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32299-2400

Re: Modification of the No. 4 Recovery Boiler, No. 4 Lime Kiln and No. 4 Combination Boiler

Project No. 1070005-038-AC/PSD-FL-380
Response to Request for Additional Information

Dear Mr. Koerner:

We are in receipt of your request for additional information, dated December 15, 2006, regarding our permit application to modify the No. 4 Recovery Boiler, No. 4 Lime Kiln and No. 4 Combination Boiler.

As noted in your question #7; Georgia-Pacific is requesting that the Department separate the projects into two separate PSD applications for the purposes of review and permit issuance due to the critical timing associated with the projects for the Recovery Boiler and Lime Kiln. Separate permits would be issued as suggested for the No. 4 Recovery Boiler and No. 4 Lime Kiln as one project, and for the No. 4 Combination Boiler as the second project. Our responses to the questions in your letter are intended to only address issues associated with the No. 4 Recovery Boiler and No. 4 Lime Kiln. A separate response will be forthcoming address the issues associated with the No. 4 Combination Boiler. For ease of following GP's responses, we have repeated the FDEP's questions prior to the answers.

1. **The project is significant for sulfuric acid mist emissions and requires a BACT determination. SAM emissions from the No. 4 Lime Kiln result from firing residual oil; however, overall emissions are very low (estimated < 2 tons/year) due to the natural scrubbing action of the lime kiln and possible additional reductions in the venturi scrubber. For the No. 4 Combination Boiler, the control technology review indicates the following technologies are available for the control for SAM emissions: dry ESPs, wet**

ESPs, and wet scrubbers. Your control technology review for the No. 4 Recovery Boiler also indicates mist eliminators in addition to this equipment. Dry ESPs, wet ESPs, wet scrubbers were eliminated from consideration due to expected high capital costs. Mist eliminators were eliminated from consideration because no actual installations were identified that reduced SAM emissions with mist eliminators on a recovery boiler. However, this technology appears transferable. Please provide a cost effectiveness analysis for adding mist eliminators to the No. 4 Recovery Boiler and the No. 4 Combination Boiler.

As stated in the application for the No. 4 Recovery Boiler, reducing SO_2 emissions will also result in lower SAM emissions. For this reason, the Department will consider reducing the fuel sulfur content of the residual oil in making its BACT determination. Please provide a control technology review for lowering the fuel sulfur content of the residual oil currently being fired to include a cost effectiveness analysis.

Alternatively, provide a combination of fuel consumption/fuel sulfur limits that maintain the net emissions increases below the PSD significant emissions rate for SAM emissions (7 tons/year). Depending on future use, this may be readily achievable because the primary fuels are BLS for the No. 4 Recovery Boiler and bark/wood for the No. 4 Combination Boiler. In fact, the stated purpose of the modifications to the No. 4 Combination Boiler is to more efficiently combust bark/wood and to displace oil firing.

Answer: GP will address the sulfuric acid emissions (SAM) associated with this project by reducing those emissions below the PSD threshold. The specifics of the reduction strategy are being formulated. A specific plan and updated netting table will be provided to the Department with the response for the #4 Combination Boiler, which we expect to submit within the next few weeks.

2. **On November 30th, we received a graph by facsimile labeled "Recovery Boiler 12 Hr. Startup Curve". The graph plots steam pressure (psi) versus time (hours). A statement following the graph indicates that "..., it is also a normal startup curve that has been doubled to accommodate an extended boiler outage." Please provide the original graph for a normal startup and identify the conditions for a normal startup. Also, please identify the conditions of a startup after an extended outage and explain the rationale for "doubling" the original graph.**

Answer

Georgia-Pacific's permit currently recognizes an 8-hour startup period for the Recovery Furnace. We are specifically requesting a longer startup period to better reflect normal startup procedures for recovery furnaces. We believe the Department has the inherent authority to provide for such necessary startup processes under the Florida rules, including the excess emission rule.[1]

[1] Florida Rule 62-210.700(1) expressly allows excess emissions resulting from SSM conditions provided the source uses best operational practices to minimize emissions and the excess emissions do not exceed two hours, "unless specifically authorized by the Department for longer duration."

As will be demonstrated by this information being provided in this response, a startup period can routinely be more than 24 hours from first fire to the point of removing the oil guns from the furnace. **Georgia-Pacific is requesting a 24-hour startup period for the Recovery Furnace**. The attached charts demonstrate the need for this startup period.

Georgia-Pacific is specifically concerned with startup due to the extended amount of time the recovery furnace is typically on residual fuel (either as the exclusive fuel or as a stabilizing fuel when black liquor is being introduced) during this period. This can result in an extended period during which we are potentially unable to comply with the sulfur dioxide and nitrogen oxide standards that apply during normal (non-SSM) recovery furnace operations. The SO_2 and NO_x emissions of the unit during these times are closer to those of an oil fired boiler than a recovery furnace. This issue is not unique to Palatka – all recovery furnaces use auxiliary fuels during periods of startup/shutdown and/or to stabilize the combustion process during periods of low black liquor burning rates and periods of low solids in the liquor or poor quality liquor.

The sulfur dioxide emissions from the recovery furnace when starting up and shutting down the unit are directly related to the sulfur content of the auxiliary fuels used. Georgia-Pacific requests that compliance with the sulfur dioxide standard during these periods be demonstrated by using fuels that comply with the permitted sulfur content.

Reliance on a start up curve to demonstrate the length of a reasonably-necessary startup period for the recovery furnace is not adequate. The startup curve only demonstrates the time necessary to build pressure / temperature in the steam system and to bring the unit online, thus making steam. The full startup ends when black liquor burning is self-sustaining and oil is removed from the furnace.

Figure 1 contains three startup curves for the recovery furnace. The first is the rapid startup curve typically used for the unit. The second is the startup curve in the DCS which is used during a cold startup. The third is the textbook curve which is based on increasing temperature of the steam by 100 degrees Fahrenheit (°F) per hour to control the tube expansion rate. Controlling the startup temperature of the furnace maximizes the cyclic life of the superheater section of the unit. As you are aware, this furnace currently has issues with steam tube cracking that will be addressed by the implementation of this project.

As you consider the information being presented, please keep in mind that the recovery furnace is not a boiler, but a chemical recovery unit. Its primary function in this capacity is to recover the chemicals from the Kraft pulping process first and then produce steam as a secondary function. Rapidly pushing a recovery furnace through a startup can result in very unsafe conditions.

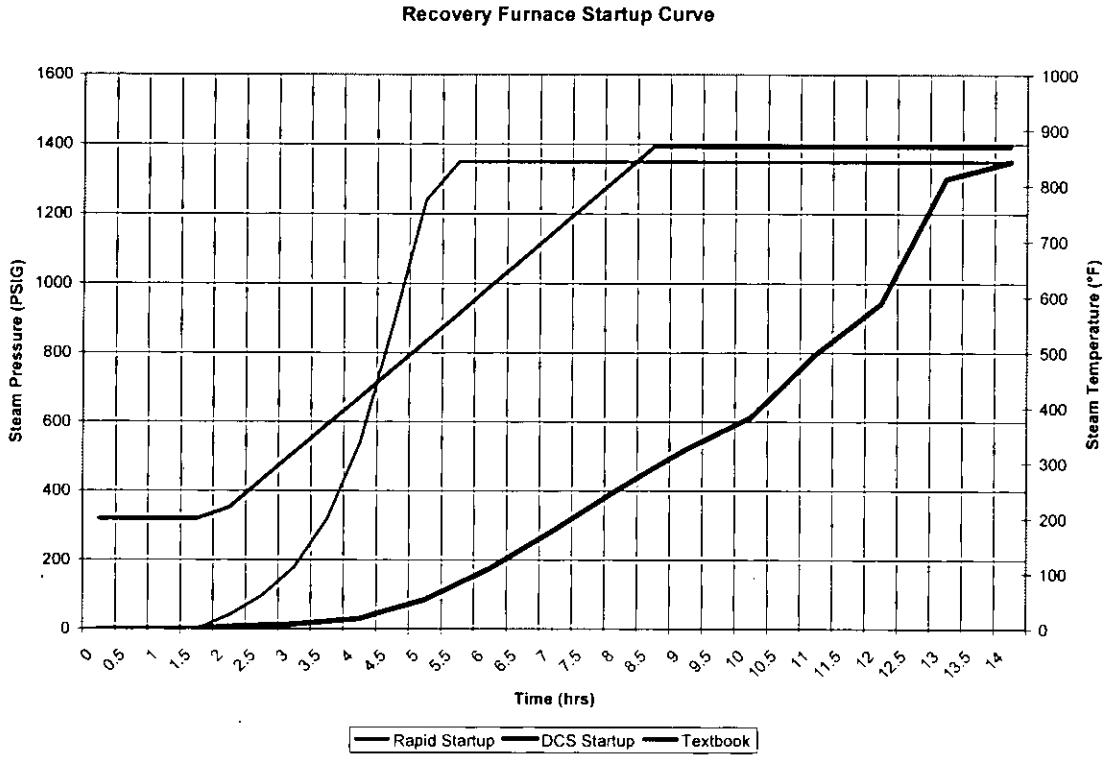

Figure 1. Startup curves for the Kraft Recovery Furnace at Georgia-Pacific, Palatka Operations

As previously noted, the startup curve in Figure 1 does not represent the end of the startup process for the recovery furnace. After the unit is brought on line with oil, we must continue to burn oil along with the black liquor until a minimum sustainable load is reached on black liquor. At that point, the heat available from the black liquor is sufficient to dry and combust the organics. At that time, the oil burners are gradually removed from service. When all the oil is removed, the unit is considered to be fully out of the startup period.

Figures 2 through 5 show graphs that are screen prints of the actual operations data from the Plant Information system during four startup/shutdown periods of the recovery furnace within the past year. These graphs demonstrate the actual startup periods of the recovery furnace which can last much longer than the standard 8-hour period allowed in current Title V permit. The information hand written on the graphs comes from the operator logs during those periods or interpretation of the graphics. It should be noted that black liquor flow is not adequately represented on the graphics because it includes materials recycled through the black liquor feed system.

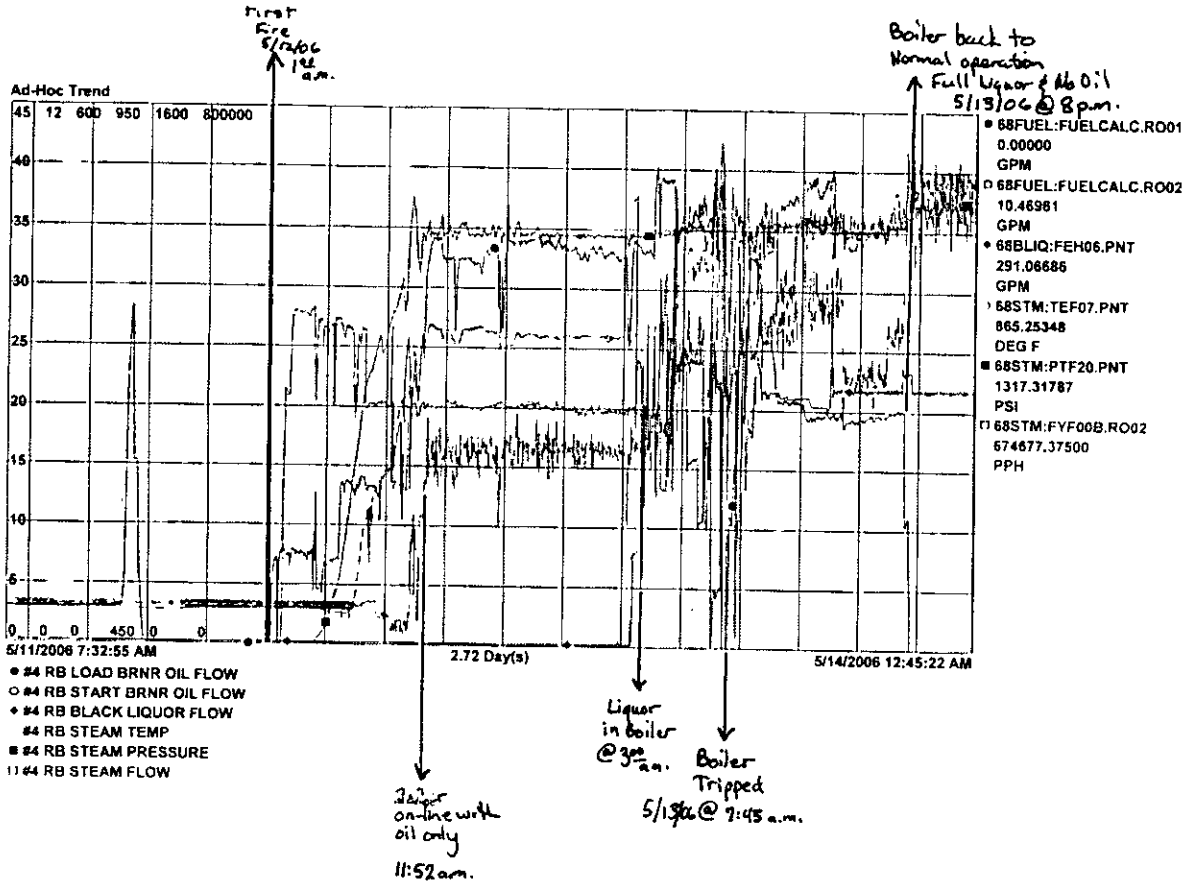

Figure 2. Printout from the May 12, 2006 cold startup of the recovery furnace. The first fire of the furnace on oil occurred at 1:00 a.m. on May 12. The unit went through its startup curve and was online with only oil at 11:52 a.m. The furnace was operated on only oil until 3:00 a.m. on May 13. At that point, black liquor was initially fired in the unit. At 7:45 a.m. on May 13, the furnace tripped and was immediately restarted. The furnace operated with oil as a supplementary fuel until 8:00 p.m. on May 13. As such, for this scenario, the total startup curve was 43 hours.

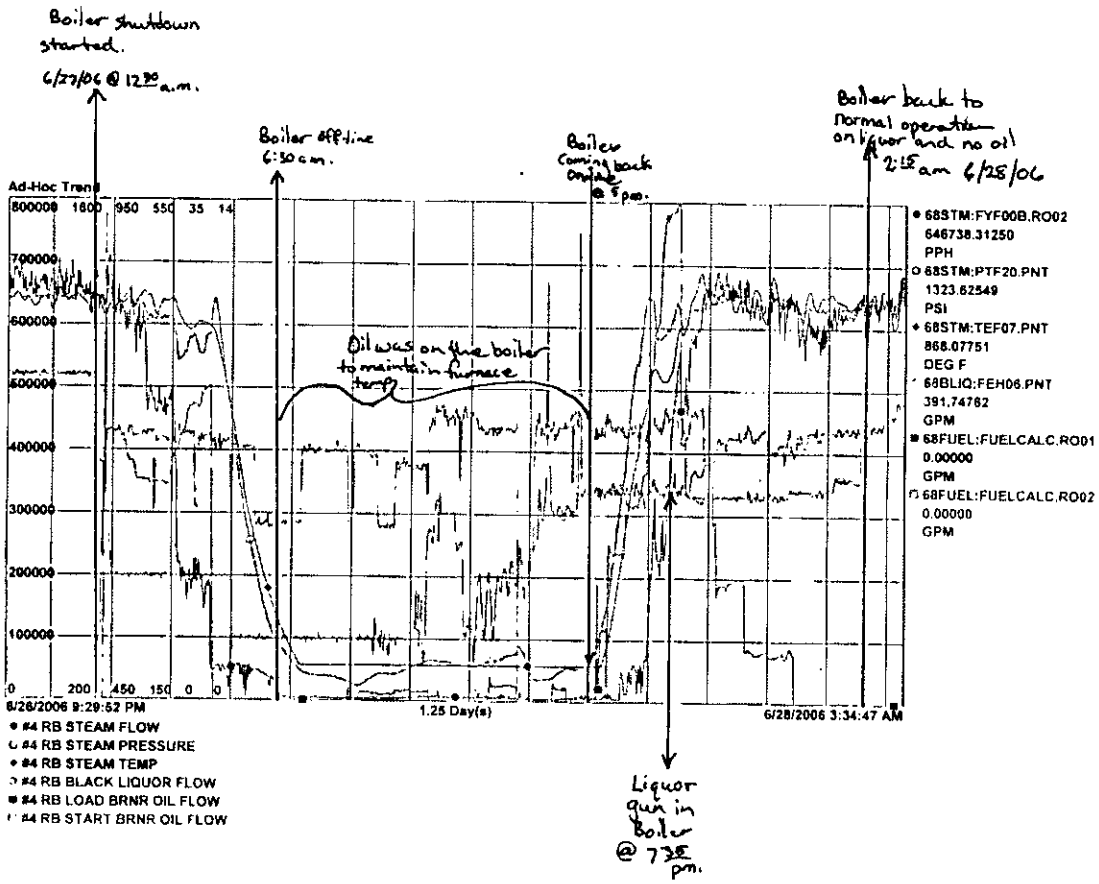

Figure 3. This figure documents the shutdown and startup of the Recovery Furnace on June 27 & 28, 2006. The shutdown process began at 12:30 a.m. on 6/27/06; at that point, oil was put in the Recovery and black liquor was taken out. The smelt bed was burned out and the boiler was offline at 6:30 a.m. on 6/27/06. During the downtime on the unit, a small amount of oil was burned in the furnace to maintain a minimum header pressure and temperature. At 5:00 p.m. on 6/27/06; the oil flow was increased and the process of bringing the furnace back online was started. Black liquor burning was reestablished at 7:55 p.m. and oil was removed from the unit at 2:15 a.m. on 6/28/06.

This review demonstrates a typical practice of burning only oil in the furnace during maintenance outages to allow the furnace to come back online quickly and eliminate a cool down / heat up cycle on the furnace.

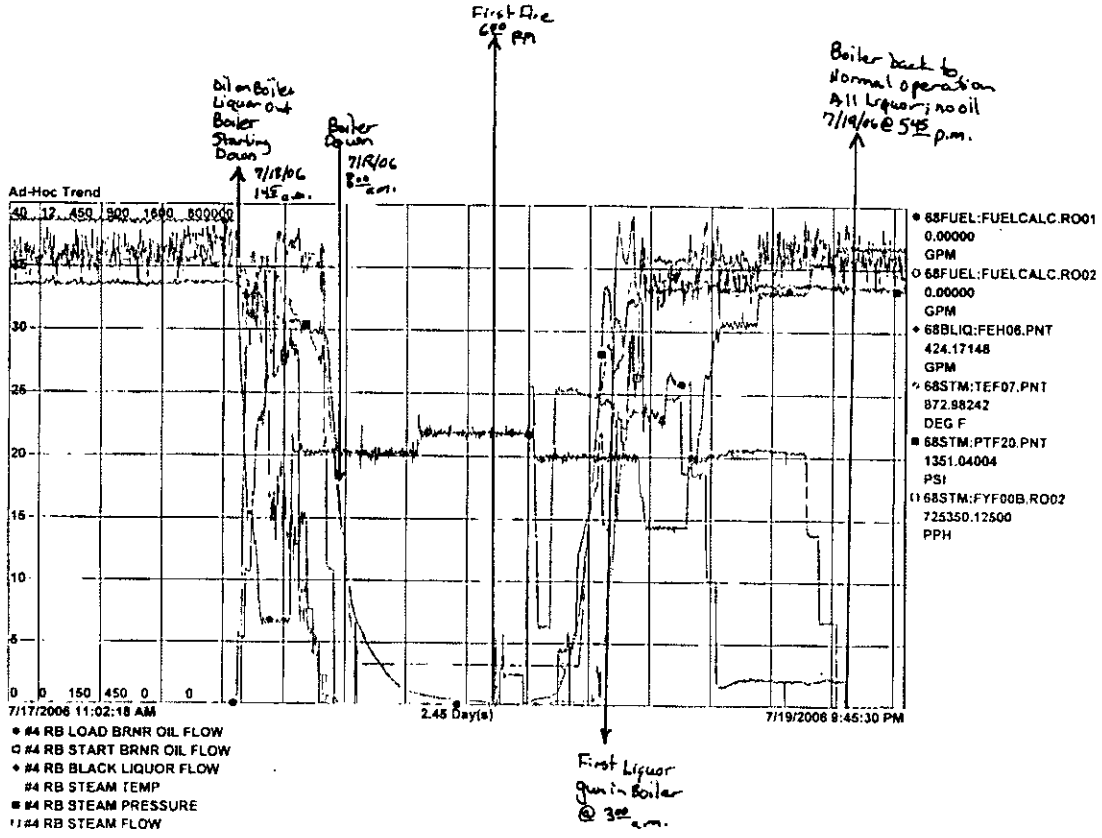

Figure 4. Printout for shutdown/startup of the recovery furnace on July 18-19, 2006. The shutdown process began at 1:45 a.m. on July 18 when oil was placed in the furnace and liquor was pulled. Over the next 6 hours, the smelt bed was burned down and then the unit was taken offline by 8:00 a.m. on July 18. The startup process began at 6:50 p.m. when oil was first fired in the furnace. The unit was brought online and stabilized, with black liquor first introduced to the unit at 3:00 a.m. on July 19. After stabilizing the liquor burning, oil was continuously worked out of the unit and the last oil gun was removed at 5:45 p.m. on July 19. The start-up period lasted approximately 23 hours.

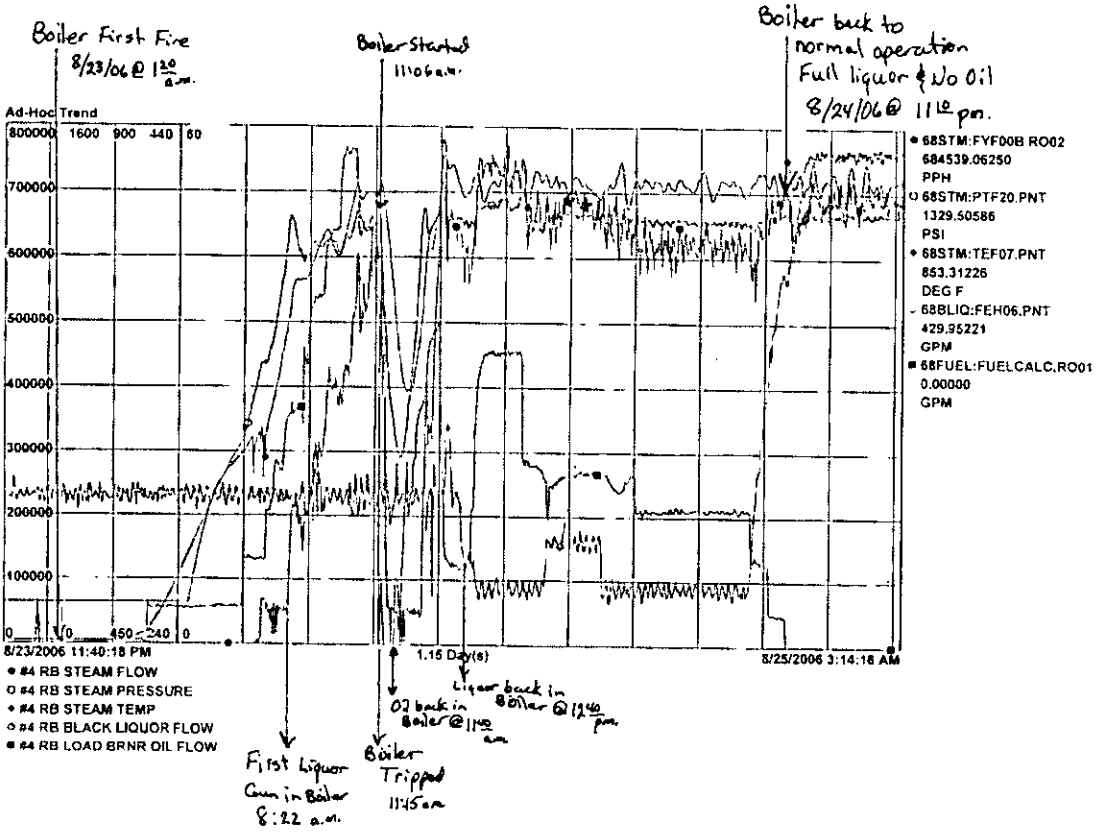

Figure 5. Printout for recovery furnace startup on August 24, 2006. The startup of the unit began with the first fire of oil at 1:30 a.m. on August 24. The first liquor gun was put in the unit at 8:22 a.m. as the furnace was being brought online. As is not unusual, the unit tripped offline at 11:15 a.m. and was brought back online in a rapid fashion on oil, with liquor reintroduced at 12:40 p.m. on August 24. As the unit was stabilized, residual fuel was progressively removed from the furnace and the last oil gun was removed from service at 11:10 p.m. on August 24. The start-up period lasted between 21 and 22 hours.

As is demonstrated by Figures 3 & 4, the shutdown period is generally less than 8 hours. A recovery furnace typically has a shutdown period that is much longer than a typical oil-fired boiler. The shutdown period for the recovery furnace is initiated when oil is put in the unit and black liquor is reduced / removed. The auxiliary fuel, in this case fuel oil, is continually burned in the unit until the smelt bed in the bottom of the furnace is below the smelt spouts. If the smelt bed is not taken below the spouts, the spouts will plug as the furnace cools, causing extensive delays during the startup process.

As previously stated; Georgia-Pacific believes a startup period of 24 hours is justified and should be granted by the Department.

Questions 3 through 5 will be responded to under separate cover as previously discussed in this response

6. **Based on your last submittal, a new ESP will be installed on the No. 5 Power Boiler. No vendor has yet been selected. As you are aware, the No. 5 Power Boiler has been identified as a "BART-eligible" unit. Please ensure that this new control equipment will be designed and selected in accordance with this upcoming regulatory requirement.**

   Answer: Georgia-Pacific is aware that the No. 5 Boiler is a "BART-eligible" unit and we will ensure that the emission controls are consistent with the upcoming regulatory requirements under that program. A tentative BART control submittal will be provided to the Department in the next couple weeks.

7. **The Department is aware of your upcoming spring outage and a stated critical need to implement the modifications for the No. 4 Recovery Boiler and the No. 4 Lime Kiln during this period. The Department believes that this portion of the application is nearly complete. In addition, the Department also believes that the combined netting analysis properly identifies the PSD-significant pollutants for the projects and that the requirements for the air quality analysis have been satisfied. If requested, the Department is now willing to separate the project into two related PSD applications: (1) the No. 4 Recovery Boiler and No. 4 Lime Kiln, and (2) the No. 4 Combination Boiler. Please keep in mind that each related project remains subject to the same PSD-significant pollutants, air quality modeling requirements, etc.**

   Answer: Georgia-Pacific appreciates the Department's understanding of the critical timing issues associated with the upcoming spring outage and vital work that must be completed on these two units. As stated in the opening of this response, Georgia-Pacific is officially requesting that the applications be split as suggested in Question 7.

If you have any questions regarding this response, please contact Michael Curtis at 386-329-0918.

I, the undersigned, am the responsible official of the source for which this document is being submitted. I hereby certify, based on the information and belief formed after reasonable inquiry, that the statements made and the data contained in this document are true, accurate, and complete.

Sincerely,

Keith Wahoske

Keith W. Wahoske, Vice-President
Palatka Operations

cc: W. Galler – GP
T. Champion - GP
T. Wyles - GP
S. Matchett - GP
M. Curtis - GP
B Mitchell
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C. Kirts, NED
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