

Lopez, Catherine

From: Greg Retzlaff [retzlaff@sterling.net]
Sent: Thursday, February 14, 2008 10:27 AM
To: Lopez, Catherine
Cc: don.b@tfp-hi.com; Hirai, Nolan S; John_Lague@URSCorp.com; William_Steiner@URSCorp.com
Subject: RE: Response to public comments for Tradewinds project - startups and shutdowns

Hi Cathy

I apologize for the length of time it has taken us to respond to your questions. We spent considerable time researching these topics to provide the best answers possible. The responses below are as Bill Steiner and I outlined with you yesterday during our telephone call.

Please see my responses below.

Greg

Greg Retzlaff
 Tradewinds Forest Products
 PO Box 43
 39-3324 Old Mamalahoa Highway
 O'okala, HI 96774
 503 582-8419 Portland Office
 808 962-6803 O'okala Office
 greg.r@tfp-hi.com
 retzlaff@sterling.net

From: Lopez, Catherine [mailto:catherine.lopez@doh.hawaii.gov]
Sent: Thursday, January 17, 2008 11:22 AM
To: Greg Retzlaff; John_Lague@URSCorp.com
Cc: don.b@tfp-hi.com; Hirai, Nolan S
Subject: Response to public comments for Tradewinds project - startups and shutdowns

Included in the public comments are questions on startups and shutdowns, could you please provide the following information:

1. Estimated number of startups and shutdowns on an annual basis.

Answer: There are two, one-week shutdowns planned for each year. The only other time the plant will shut down is for emergency repairs or breakdowns. A reasonable estimate of emergency shutdowns is approximately 6 per year.

2. Estimated total duration of each startup and each shutdown.

Answer: The time required to complete a shutdown is quite short. Estimated time for a shutdown is 2 hours.

The time required to complete a startup is very dependent on whether it is a startup from completely "cold iron" or in the case of an emergency shutdown, the startup would likely occur with warm iron.

A cold iron startup will take approximately 8 hours. A warm startup will take approximately 4 hours

3. Projected emission rates during startup and shutdown (lb/hr) for each criteria pollutant.

Answer: This response focuses on boiler startups. Tradewinds has no reason to anticipate that emissions from other equipment, including the veneer dryer, during startups and shut downs will be any greater than normal operating emissions, and will likely be less.

Quantitative pollutant-specific data for boiler startup and shutdown emissions is not available for similar boiler units, to our knowledge. Typically, wood-fired boilers are exempt from emission limits and/or emission monitoring requirements during startups and shutdowns. We do not have access to relevant data that may be recorded at existing plants, and our boiler vendor is unable to provide such data. However, we believe that the lbs/hr emission limits in the draft permit will rarely if ever be exceeded during startup or shutdown, for reasons described below.

Exceptions may, of course, occur occasionally during temporary system instabilities and malfunctions that can develop during startup of any complex industrial equipment. After checking with Factory Sales and Engineering (FSE), the manufacturer of the boiler, it was determined that, although FSE does not have representative quantitative data for normal operational startups and shutdowns, they have observed that flame temperatures rise rapidly and higher than normal level of excess air is typically maintained in the firebox during startups, which result in good combustion/destruction of VOCs and organic HAPs. Organic HAPS will generally follow the VOC emission trends. FSE has commented that if they adjust the boiler to minimum levels of criteria pollutants they have also minimized HAPS by achieving the best combustion efficiency possible.

Based on their experience, FSE is able to state that the emissions during startup will not exceed the permit levels.

Please recall that the calculations that form the basis for all estimates of annual emissions in Tradewinds' amended permit application were based on continuous boiler operation at full load, 24 hours per day and 365 days per year. Thus the periods of zero emissions during at least two weeks of accumulated shutdown time each year, as described above, were not considered in the reported annual emissions. This should more than compensate for moderate incremental change in emissions during a few startup/shutdown events during the year, if such increases during startup and shutdown were to occur. However, as described above, there are strong reasons to expect that boiler emissions during startups will be below the hourly limits specified in the draft permit.

4. Approximate quantity of biodiesel or fuel oil no. 2 fired during startup (gallons).

Answer: The full load fuel consumption is about 790 gallons per hour. During startup the firing rate is about 10% of full load and generally diesel fuel or biodiesel will be utilized for less than 3 hours in any single startup (cold iron), and 1.5 hours for a warm startup. Some startups will occur entirely on wood fuel. The alternate liquid fuels will not be utilized during an entire startup period except in the unlikely event that Tradewinds encounters biomass fuel system difficulties during a startup. So that would work out to about 120 - 240 gallons of fuel per startup (790 x 10% x 1.5 - 3 hours). Please recognize that the quantity of liquid fuel (lbs/hr) during startup will not equal anything near the full load consumption rates and will be reduced as the biomass begins to combust more completely and vigorously.

5. The estimated length of time when either biodiesel or fuel oil no. 2 is burned during the startup period?

Answer: See response above.

Additional questions:

1. What operating conditions (or other indicators) signify when the startup period has ended and when the shutdown period has begun?

Answer: Shutdown has begun when the boiler's steam production has been reduced to minimum load as a first step to shutting down. The end of a shutdown is when the turbine comes to rest and the boiler is no longer accepting any fuel.

The beginning of a startup is when the first fire is achieved in the boiler.
The end of startup is when the boiler reaches full load or normal load.

2. Does the ESP come on line immediately following the end of the startup period (at the end of the period provided in question 2 above) and go offline at the beginning of the shutdown period?

Answer: No the ESP is in operation before the end of startup. There is an electrical interlock that forces the ESP to be in service before the boiler startup can begin. The ESP will remain in operation until the boiler is in a complete shutdown state. In other words, the ESP is always in operation unless there is a full and complete boiler shutdown.

Please let me know if you wish to discuss any of these questions/answers.

Greg Retzlaff

From: Lopez, Catherine [mailto:catherine.lopez@doh.hawaii.gov]
Sent: Friday, January 25, 2008 11:13 AM
To: Greg Retzlaff; John_Lague@URSCorp.com
Cc: don.b@tfp-hi.com; Hirai, Nolan S
Subject: RE: Response to public comments for Tradewinds project - startups and shutdowns

In your response to my email below please also include maximum projected HAP emission rates during startup and shutdown.

Thank you.

Cathy

From: Lopez, Catherine

5/1/2008

Sent: Thursday, January 17, 2008 9:22 AM

To: 'Greg Retzlaff'; John_Lague@URSCorp.com

Cc: don.b@tfp-hi.com; Hirai, Nolan S

Subject: Response to public comments for Tradewinds project - startups and shutdowns

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2. Estimated total duration of each startup and each shutdown.
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4. Approximate quantity of biodiesel or fuel oil no. 2 fired during startup (gallons).
5. The estimated length of time when either biodiesel or fuel oil no. 2 is burned during the startup period?

Additional questions:

1. What operating conditions (or other indicators) signify when the startup period has ended and when the shutdown period has begun?
2. Does the ESP come on line immediately following the end of the startup period (at the end of the period provided in question 2 above) and go offline at the beginning of the shutdown period?

Please call or email me with any questions.

Thank you,

Cathy Lopez
State of Hawaii
Department of Health
Clean Air Branch
808-586-4200