

## Gregory Serrano - Re: PTI 341-07 Modeling Inputs

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**From:** Linda M Hilbert <lmhilbert@cmsenergy.com>  
**To:** "David Riddle" <riddled@michigan.gov>  
**Date:** 8/8/2008 9:17 AM  
**Subject:** Re: PTI 341-07 Modeling Inputs  
**CC:** "Matthew Hall" <HALLM1@michigan.gov>, "Stephanie Hengesbach" <HengesbachS1@michigan.gov>, "Mark Mitchell" <MitchellM7@michigan.gov>, "William Presson" <PressonW@michigan.gov>, <jjaros@nthconsultants.com>, <drector@nthconsultants.com>, Scott J Sinkwitts <sjsinkwitts@cmsenergy.com>

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Dave,

The following is in response to the question concerning operating restrictions for material handling systems at Consumers' proposed ASCPC unit in your note below. In addition to the operations you listed below, we went back to the application and identified any operations that were modeled with restricted hours. Once we had that list, we met with Consumers' Owner's Engineer (HDR/CB) and plant operating personnel to verify the best approach to limiting the daily average particulate matter emission rate, whether that be hourly operating restrictions or material throughput, based on current and expected plant operations.

Below is a list of activities and the proposed restrictions:

Activity	Unit Identification	Hourly limit in modeling	Proposed permit restriction	Comments
Vessel Unloading of coal	FF K5-9	10	Limit to 70,000 tons per day	Pick up points are from conveyors K5-20 (7000 tph capacity) and K5-28 (3000 tph cap.) and feeders K5-20A and K5-20B (3,500 tph cap. each).
Vessel Unloading of Limestone	DC-LS5-1	10	Limit to 70,000 tons per day	Pick up are from drops onto CV LS5-1 (7000 tph cap.) and feeders LS5-1A and LS5-1B (3,500 tph cap. each)
Limestone Dome Vents	7 vents	12	12 hours	Limit operation of ventilation fans
Limestone Dome Hopper	DC-LS5-2	12	12 hours	Limit operation of fan
Limestone Day Silo	Fan assisted Bin Vent filter	12	12 hours	Limit operation of fan
Transfer Flyash to Silo	Ash Silo South	12	None	This is an intermittent operation, with varying transfer rates and dust generation potential.

For vessel unloading operations, plant personnel indicated that material off loading may not always occur during a consecutive block of time due to various reasons, and there is not a good mechanism to track the total time when the coal conveyors are actually in use (e.g., when the coal conveyors are both traveling and loaded with coal). Since the basis of the modeled particulate matter emission rates was operation of the unloading operations for 10 hours per day at rated capacity, Consumers Energy suggests that a material throughput limitation equivalent to 10 hours per day operation at rated capacity is appropriate. This approach results in a maximum daily throughput restriction of 70,000 tons for each of the coal and limestone vessel unloading operations. The facility would prefer this form of limitation to accommodate any intermittent off-loading stoppages that may occur.

Unlike the unloading operations, which do not follow any type of set schedule (i.e., the vessels could arrive at the site at any

time), activities in the limestone dome and operation of the limestone dome hopper and limestone day silo are expected to occur on a set schedule for approximately one shift per day. Therefore, the facility believes that it will be possible to limit the operation of the fans serving the limestone dome vents, limestone dome hopper and limestone day silo to no more than 12 hours per day, and Consumers Energy requests operating hours per day restrictions on the fans serving these sources and control devices.

For the flyash silo, the modeled particulate matter emission rate was based on 12 hours per day operation at maximum rated system capacity. The dry fly ash system is designed at a conveying capacity approximately twice the expected ash generation rate for the proposed ASCPC boiler. As such, the system is designed to cycle on and off in approximately 4 hour intervals, yielding a typical operating schedule of 12 hours per day. This allows ash to collect in the hoppers such that the system can operate at design capacity whenever it is on-line, which is the most efficient mode of operation. If the system were to run continuously, the ash conveyance rate would be approximately half of the design conveyance capacity and system efficiency would decrease.

From a modeling perspective, there was no need to limit the daily operation of the fly ash storage silo. Rather, the 12 hours per day operation was selected based upon the normal mode of operation for the dry fly ash system. Since this source was modeled at maximum conditions for 12 hours per day, we considered whether Consumers could comply with a daily mass flow limit through the dry fly ash system. Consumers could, but according to HDR/CB there is no good way to measure the mass flow through the pipe.

After some discussion, it was decided that this small source in the middle of the property should not have any significant impact at off-site receptors, and that the 12 hour limitation should not have been applied to this source when the modeling was done. As a result, Consumers has requested that NTH remodel without the 12 hour restriction, using just the 2006 met data, and they saw no significant changes to our previous modeling results. We are confident the same would hold true for 5 years of data. Because the emissions are expected to be directly related to the ash conveyance rate, the operations don't work the same way and modeling without operating restrictions shows no impact, Consumers feels this source should not have an operating limit in the permit. The ash generation rate of the ASCPC boiler inherently limits the operation of this system to no more than 12 hours per day at rated capacity. We will have Jeff Jaros contact Stephanie Hengesbach to determine what documentation is needed to support this request.

If you have any questions, please let me know.

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"David Riddle" <riddled@michigan.gov>

06/30/2008 03:44 PM

To "Linda Hilbert" <lmhilbert@cmsenergy.com>

cc "Matthew Hall" <HALLM1@michigan.gov>, "Stephanie Hengesbach" <HengesbachS1@michigan.gov>, "Mark Mitchell"

<MitchellM7@michigan.gov>, "William Presson" <PressonW@michigan.gov>

Subject PTI 341-07 Modeling Inputs

Linda,

AQD staff have been fact-checking all of the power plant applications in detail. From my cubicle, it sure is nice to have the help.

There are three material transfer points where the basis for the modeling was a time frame less than 24 hours per day. The choices here are to run the modeling again or for Consumers Energy to take permit restrictions on the affected operations.

From Appendix B of the application:

Table B-5, page 5 of 8, Ship Unloading (Coal) Identified as "From hopper to Feeders(1) and from Feeders to CVK5-20(2) has been modeled based on 10 hours per day operation. The control point here is Fabric Filter DC K5-9.

Table B-6 page 3 of 4, Limestone Dome Hopper, emissions at Fabric Filter DC LS5-2 were modeled based on 12 hours per day operation.

Table B-6 page 4 of 4, Limestone Day Silo was modeled at 12 hours per day operation. I believe there is a 1500 scfm bin vent filter for this.

I still plan to discuss the technical completeness review with Bill Presson tomorrow and we will call you in the afternoon. Is there a time when it will be best to call?

Dave Riddle  
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