From: Bass, Monique (MN)
To: Magee, Melanie
Cc: Williams, Linda Me
Subject: RE: Rohm And Haas GHG Application Submittal
Date: Friday, November 08, 2013 3:30:41 PM

Melanie,

Please refer to the black and red text below. I will follow-up with a phone call, but in regards to completing a review of the draft permit, I would like to request an extension until Monday, November 18th, as we will not have enough time to complete our internal review of the permit by the affected facility by Tuesday, November 12th. Feel free to contact me with any additional concerns or questions.

Thank you,

Monique Bass
The Dow Chemical Company
(281) 228-8079
mnbass@dow.com

From: Magee, Melanie [mailto:Magee.Melanie@epa.gov]
Sent: Tuesday, October 29, 2013 2:12 PM
To: Bass, Monique (MN)
Subject: RE: Rohm And Haas GHG Application Submittal

Monique:

After the internal draft permit and statement of basis review, a few questions were asked and I could use your help to respond. I have listed the questions below and if you need more clarification, please just let me know.

1) In the supplemental information document provided in February, it is noted that the estimated energy penalty as a result of CCS would be approximately 52%. Please provide more information to detail how that percentage was calculated.

   Two cases were considered for the CO2 emissions as the percentage of natural gas that could be burned in the boilers could vary. The power required for capture of 90% of the CO2 in either case was estimated by a third party that is involved in commercial CO2 capture projects. The estimation was specific for the emissions parameters expected for the boilers. The power requirements for individual contributions (pumping/booster fan to get the CO2 to the suction of the compressors, compression, air compressor, steam) were summed to get a total power need for each case. The power demand for transporting the CO2 via pipeline was not known and would be additional. The additional power demand was divided by the expected power demand for the boilers to get the energy penalty of 52%.

2) Boiler construction efficiency measures: please provide any additional energy efficiency details for the permitting record. Specifically, any details you may have related to the

physical construction of the boiler, such as insulation.

As final construction plans have not been confirmed, the primary device to enhance boiler efficiency is installation of an economizer. The economizer is a heat exchanger absorbing heat from the rejected flue gas flowing to the stack and transferring that heat to colder boiler feed water to the boiler.

3) Startup and shutdown: I would like to check the following statement and request information identified by the XX.
A startup event is defined as the period of time when there is measureable natural gas flow to the boiler and ends when the boiler reaches ~~XX~~ 30 percent. Each startup time is limited to 24 hours per event per boiler. A shutdown event is defined as the period of time that begins when the boiler load falls below ~~XX~~ 20 percent and ends when there is no longer measureable fuel flow to the boiler. A shutdown is limited to 3 hours per event per boiler. Additionally, no more than one of the two boilers (EPNs BH-2-5 and BH-2-6) shall be shutdown and startup within the same hour. The new boilers are also limited to five startups and five shutdowns per calendar year per boiler. The natural gas burned during each startup and shutdown event shall be measured and recorded and shall be limited to 0.51 MMscf/hr.

4.) Fugitive Monitoring: What monitoring / control program is included in the associated TCEQ draft permit? I have noted that the application states that the cost to implement LDAR is approximately $84/ton of CO2e. Is this estimate based from only the piping fugitive emissions?

In the draft TCEQ permit, there is no fugitive monitoring/control program. For piping and valves in NH3 service, the TCEQ has required daily AVO inspections. Yes, this estimate was based on the cost to implement quarterly monitoring for strictly the piping fugitive emission components.

Thanks, Melanie

From: Bass, Monique (MN) [mailto:MNBass@dow.com]
Sent: Thursday, September 26, 2013 5:04 PM
To: Magee, Melanie
Cc: Williams, Linda Me
Subject: RE: Rohm And Haas GHG Application Submittal

Melanie,

The TCEQ is in the process of issuing the public notice package for this permit application as we have completed an initial draft permit review. Included below is a section of the text that was provided within the TCEQ's review regarding PSD applicability. Let me know if you need additional information.

I. Emissions

Emission sources for the proposed project consist of the two boilers and equipment fugitives. The site is located in a nonattainment (NA) county and is an existing major source. The project results in emission increases in NO_x, carbon monoxide (CO), particulate matter, including particulate matter 10 microns in diameter or less and 2.5 microns in diameter or less ($PM/PM_{10}/PM_{2.5}$), sulfur dioxide (SO_2), and sulfuric acid (H_2SO_4); therefore, a Prevention of Significant Deterioration (PSD) and NA major modification significance analysis was required. After netting, the NO_x, VOC, and SO_2 were below the PSD and NA major modification triggers;

therefore, neither a PSD nor a NA review was required for these pollutants. The CO and $PM/PM_{10}/PM_{2.5}$ were above the PSD major modification triggers; therefore, a PSD review is required for these pollutants.

II. Federal Applicability

The RH Texas Deer Park Energy Center is located in Harris County which is a severe non-attainment county. The site is currently considered to be a named major stationary source with respect to the PSD program. The new project will have the potential to emit emissions greater than the major modification significance level for the pollutants identified below. The following charts illustrate the annual project emissions for each pollutant and whether this project triggers a PSD or NA review. These totals include MSS emissions.

Thank you,

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From: Magee, Melanie [mailto:Magee.Melanie@epa.gov]
Sent: Thursday, September 26, 2013 9:25 AM
To: Williams, Linda Me; Bass, Monique (MN)
Subject: RE: Rohm And Haas GHG Application Submittal

Monique and Linda:

I was double checking the status of the TCEQ permit associated with the Rohm and Haas, Boiler House project and noticed on TCEQ's website the project is listed as PSD (see attached pdf)? I understand from your response you submitted a NNSR netting analysis and NSR permit application to TCEQ? Could you help me understand the permitting status of your Non-GHG emissions associated with this project? This will be used in the applicability section of the Statement of Basis.

Thanks, Melanie

Melanie Magee
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