From: Ward, Lynn C
To: Wilson, Aimee
Cc: Stuart Doss; Brad Herrin (bherrin@spiritenv.com)
Subject: RE: Questions on DCP Jefferson County
Date: Tuesday, June 04, 2013 1:45:38 PM

Dear Aimee,

In response to your information requests via emails received on 5-23-2013, DCP provides responses below. DCP is in the process of finalizing a response to the CCS question and hopes to provide a response shortly.

A. Regeneration Heater Efficiency

As stated in the DCPs response letter dated January 22, 2013, the maximum design efficiency guaranteed for the regeneration heaters in a new, steady state, full load operating condition is 85%. This efficiency does not reflect actual operating conditions, load variations, or loss of efficiency over time that is unavoidable even for well-maintained equipment. In addition, the operation of these heaters is cyclic, which significantly reduces operating efficiency. Due to the factors previously stated, DCP proposes a minimum thermal efficiency based limit of 80%.

B. Trace Erase System Emission Limit Compliance Methodology

The analyzers at the facility will be used to sample various process streams to ensure the process operates properly and product quality is maintained. The samples will be captured from each flowing process stream by an insertion probe. The sample is then routed to a fast loop system, which ensures that a current representative sample is always available for analysis. The sample in the fast loop system is fed to a flow splitter where a small portion of the sample is routed to a sample valve manifold while the remaining portion of the sample is routed to the plant flare (the flow to the flare is addressed separately in the GHG PSD permit application). The sample stream to the each sample valve manifold is controlled by a sample valve which maintains the flow at a set rate. A switching valve traps a small, discrete, repeatable, fixed volume of the flowing sample in a passage between the inlet and outlet ports of the sample valve manifold. This small, discrete sample is routed to the analyzer and analyzed, then the analyzer is purged to the Trace Erase system. The process for each sample cycle requires 10 minutes. Since this sample analysis process is identical and repeatable, DCP proposes to prove compliance with the emission limitations for the Trace Erase systems using the following methodology to determine the annual vent flow rate to each Trace Erase system.

1. Maintain design and manufacturer information on the plant that shows the number of sample streams that vent to each analyzer.
2. Maintain design and manufacturer information on the plant that shows the amount [standard cubic centimeters (“scc”)] of each sample stream (based on switching valve capacity) that is routed to each analyzer per cycle.

3. Maintain records of operating hours for the plant to provide the on stream hours for the analyzer systems.
4. Calculate the annual vent flow rate in standard cubic feet per year ("scfy") from each sample stream through the respective analyzer to the Trace Erase system, using the example calculation shown below:

    a. Example Data for Each Sample Stream/Analyzer
    - Sample captured and analyzed per cycle = 5 scc
    - 10 minute cycle time for each sample stream
    - 8,760 operating hours per year

    b. Example Calculations for a Single Analyzer
    - Flow to Trace Erase (scc/hr) = 5 scc/10 min x 60 min/hr = 30 scc/hr
    - Flow to Trace Erase (scfy) = 30 scc/hr x 1 scf/28,316.8 scc x 8,760 hrs/yr = 9.28 scfy

Sincerely,

Lynn Holt
Senior Environmental Specialist
DPC Midstream, LP
Arklatex / Gulf Coast Assets

(o) 903-694-4114
(c) 903-754-0945

From: Wilson, Aimee [mailto:Wilson.Aimee@epa.gov]
Sent: Thursday, May 23, 2013 1:11 PM
To: Ward, Lynn C
Cc: Stuart Doss
Subject: RE: Questions on DCP Jefferson County

I'm sorry, not the hot oil heaters, I meant the regeneration heaters.

On CCS- we are going to need more information to be able to support eliminating CCS as a control option. We either need more data on costs, or try to bolster the argument that there are environmental and energy impacts that eliminate CCS. You may need to discuss this with my boss, Jeff Robinson.

From: Ward, Lynn C [mailto:LCWard@dcpmidstream.com]
Sent: Thursday, May 23, 2013 12:53 PM
To: Wilson, Aimee
Cc: Stuart Doss

Subject: FW: Questions on DCP Jefferson County

Sorry, I got distracted apparently, see below for DCP's response to the hot oil heater question.

I would like to talk further about the estimates for NOx and VOC and why they are needed. To generate estimates that have any basis, DCP would have to undertake engineering design work that is currently beyond the scope of the project. I would prefer to have a discussion about this so I can understand the need. Is this point going to hold up the project draft permit/statement of basis, etc?

Thanks,
Lynn

From: Wilson, Aimee [mailto:Wilson.Aimee@epa.gov]
Sent: Thursday, May 23, 2013 11:54 AM
To: Ward, Lynn C
Cc: Brad Herrin; Stuart Doss
Subject: RE: Questions on DCP Jefferson County

Lynn,

What about my question on the hot oil heaters having an output based limit or a minimum thermal efficiency?

DCP proposes an efficiency based BACT limit of 85% for each hot oil heater. Please see page 5-24 of the revised application submitted on 2-27-2013.

Also, I think we will need an estimate of the NOx and VOC emission increases if CCS were implemented.

Thanks,
Aimee

From: Ward, Lynn C [mailto:LCWard@dcpmidstream.com]
Sent: Thursday, May 23, 2013 11:32 AM
To: Wilson, Aimee
Cc: Brad Herrin (bherrin@spiritenv.com); Stuart Doss
Subject: RE: Questions on DCP Jefferson County

Dear Aimee,

I greatly appreciate your patience with DCP on responding to your 5/17 email. For my part, I had received all the information I needed yesterday morning but didn't realize that I had. I have added DCP's comments to your original email below in blue text. Thanks again for your patience.

Sincerely,

Lynn Holt
Senior Environmental Specialist
DPC Midstream, LP
Arklatex / Gulf Coast Assets

(o) 903-694-4114
(c) 903-754-0945

From: Wilson, Aimee [mailto:Wilson.Aimee@epa.gov]
Sent: Friday, May 17, 2013 10:57 AM
To: Ward, Lynn C
Cc: Brad Herrin (bherrin@spiritenv.com); Stuart Doss
Subject: Questions on DCP Jefferson County

Lynn,

The draft permit and statement of basis have gone through internal review and I have some questions from the reviewers.

CCS – Can you give an estimate of what the NOx and VOC increases would be if CCS were implemented? The equipment for a CCS system has not undergone complete design and engineering, because the cost of CCS was determined to be economically unreasonable. Therefore, the NO_X and VOC emissions that would be associated with CCS implementation cannot be estimated at this time.

In a previous response on the hot oil heater use, you had replied. "The hot oil is used in three of the four column reboilers, a heat exchanger for the caustic/hydrocarbon separator in natural gasoline treating, the process waste water flash drum heating coil, and for an occasional use water heater associated with the natural gasoline treaters." Can you clarify if each of the sources utilized the ehat by a reboiler, heat exchanger, or column. Maybe a short description of each. Also, my boss is not happy with only having a limitation on hours of firing at maximum firing. Can you propose either an output based limit (lb CO_2/MMBtu or lb CO_2/bbl processed) or a minimum thermal efficiency to meet?

The hot oil is used to heat process fluid in each of the pieces of equipment for each process train, as described below:

1. Deethanizer Bottom Reboiler, Depropanizer Bottom Reboiler, Debutanizer Reboiler, and Amine Regenerator Reboiler – These reboilers are all shell and tube heat exchangers. Hot oil is routed through the tubes in the heat exchanger to heat process fluid from the respective process column in the shell side of the heat exchanger. In addition to heat from the hot oil, the Deethanizer Bottom Reboiler heat exchanger uses heat from the

Depropanizer Heat Pump Compressor discharge stream in a second set of tubes to reduce the amount of heat required from the hot oil system.

2. Caustic/Hydrocarbon Separator Heater – Hot oil is routed through a heating tube bundle in the Caustic/Hydrocarbon Separator vessel to heat the spent caustic solution to aid in the separation of any dissolved or entrained hydrocarbons.
3. Natural Gasoline Treating Water Heater – This is a shell and tube heat exchanger. Hot oil is routed through the tubes in the heat exchanger to heat water which is occasionally used in the natural gasoline treater vessels.
4. Process Waste Water Flash Drum Heating Coil – Hot oil is routed through a heating coil in the Process Waste Water Flash Drum to heat the process waste water to aid in the separation and vaporization of any hydrocarbons that may be dissolved or entrained in the waste water prior to sending it to the waste water storage tank.

Engines – Will the emergency generator engines meet off-road GHG standards? Will they meet 60.4205(b) for emergency generator engines < 30L or 60.4205(d) for greater than 30L after 2012? Wanted to verify.

1. The site will include only one emergency generator engine, which is intended to remain permanently on the site. This is a fixed generator installation, not a portable generator.
2. DCP understands that the only GHG emission standards that have been promulgated by the USEPA that specifically address engines, rather than motor vehicles only, are found in 40 CFR Part 1036. Specifically, this regulation addresses "heavy-duty" engines which are defined in 40 CFR 1036.801 as "…any engine which the engine manufacturer could reasonably expect to be used for motive power in a heavy-duty vehicle…". A heavy-duty vehicle is defined as "…any motor vehicle above 8,500 pounds GVWR or that has a vehicle curb weight above 6,000 pounds or that has a basic vehicle frontal area greater than 45 square feet." Because the emergency generator engine is part of packaged equipment meant to be used for emergency generation rather than for motive power, no GHG standards are currently applicable to the engine.
3. The emergency generator engine will meet the applicable emission standards in 40 CFR 60 Subpart IIII for emergency engines less than 30 liters per cylinder, per 40 CFR 60.4205(b).

Thanks,
Aimee