

Kathleen Truesdell

From: Jim McLucas <jim.mclucas@radback.com>
Sent: Friday, October 15, 2010 9:41 PM
To: Kathleen Truesdell
Cc: 'Gregory Darwin'
Subject: RE: draft cost-effectiveness checks - CO and POC
Attachments: RADBACK-ENERGY-OAKLEY-BASF-011110-CO-R0.doc

Kathleen –

Here's the vendor quote for the oxidation catalyst. We received permission to submit this to you without the need for a confidential filing.

Thanks!

- Jim

From: Gregory Darwin [mailto:darwin@atmosphericdynamics.com]
Sent: Friday, October 15, 2010 4:02 PM
To: Kathleen Truesdell
Cc: Jim McLucas
Subject: FW: draft cost-effectiveness checks - CO and POC

Kathleen, here are the responses to your questions.

Question: Please submit the vendor quote for the ox cat system and catalyst replacement. If needed, these can be filed with the District as Confidential/Trade Secret.

Answer: Radback is working with the vendor to release this data.

Question: Please show where the labor rate of \$108.50/hr comes from.

Answer: The labor rate of \$108.50 is the PG&E burdened labor rate which includes all salary and benefit costs.

Question: Please confirm the expected catalyst life for 1.5 ppm CO scenario and 2.0 ppm CO scenario. Some of the charts you submitted have 5 year life but the CRF used was for 15 years. I assumed 5 year life the 1.5 ppm scenario and 15 years for the 2.0 ppm scenario. Is this correct?

Answer: The CRF was adjusted to reflect a 5 year catalyst life rather than 15 years. You are correct.

Question: I did a check on the CO and POC cost-effectiveness using the EPA Cost Control Manual (2002) based on the method for carbon absorbers.

Answer: I would not agree with this method as a comparison.

Question: I also adjusted:

Tax rate – Oakley (and I think most of Contra Cost County) is 9.25%

Used default assumptions for Direct Installation Costs (30% of purchased equipment cost) and Total Indirect Costs (31% of purchased equipment cost) based on Table 1-3 for Carbon Adsorbers and 2.8 for Thermal and Catalytic Incinerators.

Corrected Annual Media Cost to: CRF*Media replacement and disposal cost

For Capital Recovery Cost, I subtracted the Media replacement and disposal cost from the purchased equipment cost since it is already accounted for in Direct Operating Costs.

Answer: We would respectively disagree with the Direct Installation Cost assumption (30% of purchased equipment) as this assumption truly under-represents the true installation costs for power plants.

Question: For emissions, I used OGS Scenario 3 and multiplied the lb/hr shown in the Radback "Operating Emissions" worksheet by the number of Peak hours and ISO hours listed for Scenario 3.

Answer: The emissions used to evaluate the cost effectiveness represent the realistic upper bound of plant operation rather than the worst-case potential to emit on an annual basis. As per the NSR Workshop Manual on pages B.37 through B.40, historical industry trends can be used to establish the base emissions for BACT determinations:

- Estimating realistic upper-bound case scenario does not mean that the source operates in an absolute worst case manner all the time. For example, in developing a realistic upper boundary case, baseline emissions calculations can also consider inherent physical or operational constraints on the source.
- In addition, historic upper bound operating data, typical for the source or industry, may be used in defining baseline emissions in evaluating the cost effectiveness of a control option for a specific source.

The emissions used to establish baseline represent the maximum annual hours of operation at 8,434 hours per year. But rather than use maximum output for all hours, the historic upper bound of medium output was used, as per the NSR Workshop Manual.

Gregory Darwin

Atmospheric Dynamics, Inc.
Torres Street 3 SW of Mountain View
P.O. Box 5907
Carmel-by-the-Sea, CA 93921-5907
darwin@atmosphericdynamics.com
831.620.0481 (p)
831.620.0482 (f)

From: Kathleen Truesdell [mailto:ktruesdell@baaqmd.gov]
Sent: Thursday, October 14, 2010 11:39 AM
To: Gregory Darwin
Cc: Jim McLucas
Subject: draft cost-effectiveness checks - CO and POC

Greg,

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For Capital Recovery Cost, I subtracted the Media replacement and disposal cost from the purchased equipment cost since it is already accounted for in Direct Operating Costs.

For emissions, I used OGS Scenario 3 and multiplied the lb/hr shown in the Radback "Operating Emissions" worksheet by the number of Peak hours and ISO hours listed for Scenario 3.

With all of these changes, the costs are similar to your figures. Please verify the emissions calcs.

Thanks,
Kathleen