Jakuta, Joseph (DOEE)

From: Potter, Christopher <Christopher.Potter@aoc.gov>
Sent: Thursday, May 12, 2022 4:11 PM
To: Jakuta, Joseph (DOEE)
Cc: Brubach, Hannah (DOEE); Ours, Stephen (DOEE); SBarnes@TrinityConsultants.com; Altermatt, Francie; Williams, Patricia
Subject: RE: Alternative RACT Clarification Questions - Capitol Power

Follow Up Flag: Follow up
Flag Status: Completed

Mr. Jakuta,
Thank you for your support in reviewing our Alternate RACT Plan submission.
Listed below are our responses to the Alternate RACT Clarification Questions you forwarded on May 2, 2022.

Please let me know if you have any other questions or would like additional information.
Thank you.

- Chris Potter

- Discuss how CPP determined exhaust temperatures for analyzing the technical effectiveness of SCR. How far downstream from the fireboxes did you measure the temperatures?
    - SCR requires an exhaust temperature of 480 to 800°F to be effective. Boiler 3 operates at an exhaust temperature below 300 °F and Boilers 4 through 7 operate between 300 and 600 °F. We expect these temperatures to be representative of temperatures where an SCR would be installed.
    - The exhaust temperatures were based on available stack testing data and confirmed with boiler tuning records. Specifically, the most recent $PM_{2.5}$ stack testing report is from May 2017 and contains temperature data for the boilers. Readings during December 2020 boiler tuning confirmed the temperature data was still accurate.
    - For Boiler 3, there is a horizontal distance of 32 feet between the boiler and the temperature measurement.
    - For Boilers 6 and 7, the horizontal distance between the boilers and the temperature measurement location is 36 and 52 feet, respectively.
    - No stack testing data is available for Boilers 4 and 5. The configuration of the boiler ducts, due to space, do not have sufficient straight runs to avoid cyclonic flow. As approved in a stack testing protocol by DOEE, the temperature data for Boilers 6 and 7 is considered representative of Boilers 4 and 5 as all four boilers are identical.
- Capitol Power relied on an interest rate of 3.75% for use in the cost of capital calculations, what was the basis for choosing this interest rate?
    - The EPA states a bank prime interest rate of 5.25 to 5.5% in footnote 11 of Chapter 1 of the Cost Control Manual for SNCR for use in cost control calculations.
    - We conservatively used a 3.75% interest rate to reflect that the current rate is lower than the range in Chapter 1.

    - Using a rate of 3.75% instead of 5.5% would result in higher likelihood of control measures being economically feasible.
- Why did you use the 2020-2021 average heat input as the basis for determining operations? Did COVID affect the load in 2020-2021 significantly?
    - We chose to use the 2020-2021 average heat input similar to how baseline actual emissions are defined under DC's nonattainment New Source Review regulations.
    - COVID did not significantly impact the load on the plant.
- Why were the emission reductions based on a flat emissions rate rather than the control effectiveness of the analyzed technology?
    - Emission reductions for burner replacements were based on the difference between 2020-2021 average emissions and projected future emissions assuming similar heat input and the flat emission rate provided by the burner manufacturer.
    - NOx removal for SCR and SNCR were developed using control effectiveness (90% and 50% for SCR and SNCR, respectively) to develop an emission factor to predict future emissions.

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From: Jakuta, Joseph (DOEE) <Joseph.Jakuta@dc.gov>
Sent: Monday, May 2, 2022 10:09 AM
To: Potter, Christopher <Christopher.Potter@aoc.gov>
Cc: Brubach, Hannah (DOEE) <hannah.brubach@dc.gov>; Ours, Stephen (DOEE) <stephen.ours@dc.gov>; SBarnes@TrinityConsultants.com; Altermatt, Francie <Francie.Altermatt@aoc.gov>; Williams, Patricia <patricia.williams@aoc.gov>
Subject: Alternative RACT Clarification Questions - Capitol Power

Mr. Potter,

Thank you for your submission under Alternative RACT as allowed under 20 DCMR Section 805.2. We have been reviewing the alternative RACT submission transmitted to DOEE and require clarification on a few points before proceeding. Can you respond to the following questions by May 16, 2022?

- Discuss how CPP determined exhaust temperatures for analyzing the technical effectiveness of SCR. How far downstream from the fireboxes did you measure the temperatures?
- Capital Power relied on an interest rate of 3.75% for use in the cost of capital calculations, what was the basis for choosing this interest rate?
- Why did you use the 2020-2021 average heat input as the basis for determining operations? Did COVID affect the load in 2020-2021 significantly?

- Why were the emission reductions based on a flat emissions rate rather than the control effectiveness of the analyzed technology?

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