

DOCKETED

Docket Number:	15-AFC-02
Project Title:	Mission Rock Energy Center
TN #:	216064
Document Title:	Data Requests, Set 4 (Nos. 159-168)
Description:	Mission Rock Energy Center Data Requests, Set 4 re: Air Quality
Filer:	Mike Monasmith
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	2/16/2017 12:13:34 PM
Docketed Date:	2/16/2017

CALIFORNIA ENERGY COMMISSION

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February 16, 2017

Mitch Weinberg
Calpine Corporation
4160 Dublin Boulevard, Suite 100
Dublin, CA. 94568

**RE: MISSION ROCK ENERGY CENTER (15-AFC-02) DATA REQUESTS,
SET 4 (Nos. 159 – 168)**

Dear Mr. Weinberg;

Pursuant to Title 20, California Code of Regulations, section 1716, the California Energy Commission staff requests the information specified herein. The information requested is necessary to: 1) more fully understand the project, 2) assess whether the project will result in significant impacts, and 3) assess potential mitigation measures.

This request is being made in the area of Air Quality (Nos. 159-168). Written responses to the enclosed data requests are due to the Energy Commission on or before February 23, 2017 (the conclusion of Discovery).

If you are unable to provide the information requested, need additional time, or object to providing the requested information, please send a written notice to both Commissioner Karen Douglas, Presiding Committee Member for the Mission Rock Energy Center, and me, within 5 days of receipt of this letter. The notification should contain the reasons for not providing the information, the need for additional time, or the grounds for any objections. If you have any questions, please call me at (916) 654-4894, or E-mail me at: mike.monasmith@energy.ca.gov.

Sincerely,

Mike Monasmith
Siting Project Manager

Enclosure: Data Requests, Set 4

**MISSION ROCK ENERGY CENTER (15-AFC-02)
DATA REQUESTS SET 4 (Nos. 159 – 168)**

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Technical Area: Air Quality**Author:** Joseph Hughes, P.E.**Worst Case Construction Emissions for Impact Analysis
BACKGROUND**

Application for Certification (AFC), Appendix 5.1E Table 5.1E-4 provides the estimated maximum daily onsite construction emissions. It is stated that both onsite exhaust and fugitive emissions would occur during Phase 2 (Civil Improvements). Table 5.1E-7 (Attachment to Appendix 5.1E) provides a spreadsheet tab, Onsite Equipment, that describes all onsite vehicle and construction equipment that are expected to be used during the various phases of construction activities, including hours of operation and emissions factors for each piece of equipment. The emission estimates provided for Phase 2 (Civil Improvements) are consistent with the estimated maximum daily onsite construction emissions provided in Table 5.1E-4 (with the exception of PM10 and PM2.5 which were revised in TN 215570, and are discussed in more detail below), and the emission factors used in the air quality impact analysis.

However, Table 5.1E-7 shows that during months 5-8, Phase 2 (Civil Improvements) would overlap with Phase 3 (Plant Construction). The table shows that there would be a larger number of onsite vehicles and construction equipment used during the overlapping construction phases than what would be expected for Phase 2 construction activities alone. Additionally, the combined emissions from these two overlapping phases of construction would result in estimated maximum daily emissions higher than those provided in Table 5.1E-4 and those used in the air quality impact analysis (especially during month 7).

Similarly, the worst case fugitive dust emissions are expected to occur during Phase 2 (Civil Improvements). The fugitive dust emissions presented in Table 5.1E-4 are the sum of fugitive emissions associated with Phase 2 construction (Civil Improvements), storage pile fugitive dust, on-site paved road travel, on-site unpaved road travel, and track out fugitive dust. As discussed above, there would be an overlap between Phase 2 and Phase 3 construction activities that could result in higher estimated daily fugitive dust emissions than those provided in Table 5.1E-4 and the emission factors used in the air quality modeling impact analysis.

DATA REQUEST

159. Please update Table 5.1E-4 to show the estimated maximum daily onsite construction exhaust and fugitive emissions, accounting for any overlapping construction activities.
160. Please update the air quality impact analysis for construction as a result of the revised emission factors identified in response to Data Request No.159 above.

Worst Case Commissioning Phase Emissions for Impact Analysis BACKGROUND

AFC, Appendix 5.1E Table 5.1E-7 explains that commissioning activities would commence in month 17 of construction and continue through month 23. In addition to the onsite service vehicles associated with commissioning activities (i.e. pickup trucks, flat bed delivery truck, service truck, and worker commuter cars), there would be a number of other construction-related vehicles and equipment onsite associated with the Building Construction Phase (Phase 4 – months 11 to 22). However, the commissioning impact analysis only included emissions for the testing of the turbines and omitted all other onsite construction activity emissions that would be occurring simultaneously.

DATA REQUEST

161. Please revise the commissioning phase air quality modeling impact analysis to include all emission sources expected to be in concurrent operation during commissioning activities; or, provide a justification for omitting such sources, including a discussion of whether construction related impacts would be cumulatively additive to the worst-case commissioning impacts.

Revised PM10/PM2.5 Construction Exhaust Emissions BACKGROUND

Revised Appendix 5.1E, Tables 5.1E-1 through 5.1E-4 show new PM10 and PM2.5 emissions based on revised emissions evaluation per CalEEMod2016 assuming the use of Tier 4 engines on all onsite construction equipment. For example, Table 5.1E-4 shows PM10 and PM2.5 exhaust emissions of 0.273 and 0.270 pounds per day (lb/day), respectively, compared to what was previously provided in Table 5.1E-4 of 9.74 lb/day for both PM10 and PM2.5. However, Table 5.1B-4 Modeling Inputs/Results for Mission Rock Construction Impacts still shows PM10/PM2.5 exhaust emission inputs for the air quality impact analysis of 9.74 lb/day. Additionally, the revised modeling files appear to use emission inputs that equate to 9.74 lb/day for PM10/PM2.5 combustion.

As part of the Available Mitigation Measures (page 5.1E-2) the applicant says it will work with the construction contractor to utilize to the extent feasible, EPA-ARB Tier 2/Tier 3 engine compliant equipment for equipment over 100 horsepower. Whereas, the revised PM10 and PM2.5 emissions estimates are based on the use of Tier 4 engines on all onsite construction equipment. Regardless, staff would require the use of Tier 4 engines for equipment over 100 horsepower to the extent feasible.

DATA REQUEST

162. Please explain the use of the revised daily PM10 and PM2.5 construction exhaust emission estimates.
163. Please confirm the PM10 and PM2.5 modeling inputs for construction exhaust emissions, and whether the modeling impacts were scaled to reflect the revised daily construction exhaust emission estimates.

164. If the revised PM10 and PM2.5 construction exhaust emissions are to be considered for any part of the analysis, please provide supporting information, including equipment emission factors and calculations similar to what was provided as part of the original Appendix 5.1E (including electronic Excel files where necessary).

Routine Operating and Commissioning Year Emissions BACKGROUND

Section 5.1.6.4, page 5.1-34 states “during the first year of operation, plant commissioning activities, which are planned to occur over an estimated 213 hours per turbine, will have higher hourly and daily emissions profiles than during normal operations in the subsequent years of operation”. However, it is unclear if the applicant is proposing higher annual emissions during the first year of operation, and if so, what the total first year emissions would be (e.g., total commissioning emissions plus total routine operating year emissions, or total commissioning emissions plus partial year routine operating emissions). The maximum facility emissions for the MREC for a routine operating year (non-commissioning year) listed in Table 5.1-11 are 28.17 tons per year (tpy) of NO_x, and 13.09 tpy for PM10/PM2.5. The total facility commissioning emissions listed in Section 5.1.6.4 are 10.33 tons for NO_x and 1.77 tons for PM10/PM2.5.

However, the emission rates used in the air quality impact analysis for a routine operating year equate to 28.02 tpy of NO_x and 12.61 tpy of PM10/PM2.5, although, the emission rates used in the air quality impact analysis for the first year (commissioning year) equate to 30.45 tpy of NO_x and 12.96 tpy of PM10/PM2.5.

DATA REQUEST

165. Please explain the discrepancies between the proposed annual emissions for a routine operating year (non-commissioning year) and the emission factors used for the annual impacts in the air quality impact analysis.
166. Please provide the proposed emission limits for each criteria pollutant for the first year (commissioning year), including the proposed operating scenario for the subsequent routine operation during the first year.

Emission Controls for NO_x BACKGROUND

Table 5.1-15, Proposed BACT for the Combustion Turbines, has a Dry Low NO_x (DLN) system listed as the proposed BACT system for NO_x. However, Section 5.1.1 states that water injection would be used in the turbine combustors to limit NO_x production.

DATA REQUEST

167. Please confirm whether the turbines would use water injection or DLN technologies for NO_x control.

Offsite Emissions During Routine Operation
BACKGROUND

During routine operation, worker trips and material deliveries cause emissions of criteria pollutants from mobile sources operating offsite.

DATA REQUEST

168. Please provide the expected offsite exhaust and fugitive dust emissions from worker commute and material delivery, and the supporting assumptions for such emissions.