

March 19, 2025

Subject: Second MPH Bastrop Peakers, LLC Air Quality Analysis Protocol

Permit Application Number: 178585

New Source Review (NSR) Project Number: 386107

Air Dispersion Modeling Team (ADMT) Project Number: 9707

County: Bastrop

On January 10, 2025, the Air Dispersion Modeling Team (ADMT) sent comments regarding the Prevention of Significant Deterioration (PSD) Air Quality Analysis (AQA) Protocol for MPH Bastrop Peakers, LLC located Bastrop, Bastrop County, Texas, dated December 2024. The applicant submitted revised protocol, dated March 2025. The comments on the revised protocol are below.

3.2 Stack Parameter Justification – Note that if the modeled emission rates for any averaging times (e.g., 1-hr, 8-hr, 24-hr) will include a combination of the turbine’s routine and MSS emissions, provide the emission calculations for these averaging times in the final AQA.

3.3 Modeling Scenario Grouping – The revised protocol did not discuss the scenarios for turbines startup-shutdown activities. In the final AQA, document how the emission rates and stack parameters for the turbines startup-shutdown activities compare to the emission rates and stack parameters for the various routine load scenarios.

3.6 Receptor Grid – Note that if it is determined that a full impacts analysis is required for PM_{2.5}, then the estimated secondary PM_{2.5} impacts should be considered in the determination of the area of impact (AOI) receptors for the PM_{2.5} full impacts analyses. When determining significant receptors to include in the cumulative analysis, add the contributions associated with the secondary PM_{2.5} impacts to the modeling results associated with the direct PM_{2.5} emissions on a receptor-by-receptor basis. Then identify receptors with total predictions greater than or equal to the SIL and use these receptors in the cumulative modeling analyses. Note that this demonstration will need to be conducted for both the National Ambient Air Quality Standard (NAAQS) and Increment analyses.

3.10 Air Quality Monitoring Data – The protocol states that preliminary modeling results indicate that monitor background concentrations may be necessary for NO₂, PM₁₀, and PM_{2.5} NAAQS analyses. However, the protocol still did not include a discussion on how site-wide emissions will be evaluated for NO₂, PM₁₀, and PM_{2.5}. In the final AQA, include a discussion on how site-wide emissions will be addressed for these pollutants (refer to section 4.0 below for more detail on the off-property sources retrieval).

Note that if the preliminary results change before the final submittal of the AQA and the model predictions of other pollutants/averaging times are greater than or equal to an applicable de minimis level, then a revised protocol will need to be submitted to the TCEQ and EPA Region 6 that includes a discussion on how off-property sources will be evaluated, as well as the monitor selected for the background concentrations.

3.11 NO₂ Modeling – Multi-Tiered Screening Approach – Please be aware if Ambient Ratio Method (ARM2) is used, there are model limitations when using the ARM2 option and source groups. If source groups are to be used, model each source group in a separate run. If a Tier III method is used, a revised protocol must be submitted that includes the methodology proposed along with full documentation and technical justification for the associated model input parameters.

4.0 Modeling Results – While the De Minimis levels for both the NAAQS and increment are identical for PM_{2.5}, the procedures to determine significance (that is, predicted concentrations to compare to the De Minimis levels) are different. This difference occurs because the NAAQS for PM_{2.5} are statistically-based, but the corresponding increments are exceedance-based. For PM_{2.5} SIL increment analyses, the maximum predicted concentrations over five years of meteorological data should be reported.

The protocol states that an inventory of the TCEQ's Air Permits Allowable Database (APAD) will be made for NO_x, PM₁₀, and PM_{2.5} so that permitted allowable emissions within 50 km of the project site can be included in full NAAQS and PSD Increment analyses as required. The approach to develop the off-property inventory by utilizing the TCEQ's Air Permits Allowable Database (APAD) is reasonable. APAD may be incomplete or not up to date. Therefore, ADMT recommends that the applicant review the retrievals for completeness and accuracy prior to conducting any modeling. In addition, clearly identify and justify any changes to the retrieval sources. If the applicant is aware of data not contained in the retrieval, such as recently issued permitted facilities, the data should be included as applicable. Any changes to data or exclusion of sources must be clearly documented and justified. Provide any retrieval files that were obtained from APAD and all supporting materials with the AQA.

5.0 Class I Area Impact - TCEQ follows 40 Code of Federal Regulations § 52.21(p) which requires the TCEQ to provide written notice of any permit application for a proposed major stationary source which may affect a Class I area to the Federal Land Manager and the Federal official charged with direct responsibility for management of any lands within any such area. EPA, through applicable guidance, has interpreted the meaning of the term “may affect” to include all major source or major modifications which propose to locate within 100 km of a Class I area. The applicant may contact the applicable Federal Land Manager to discuss any potential Class I analyses for air quality related values.

7.2 Preconstruction Monitoring Analysis – The protocol states that preliminary modeling indicates that the 8-hour CO significance analysis will be below the SIL and therefore also below the SMC. If the preliminary results change and the model predictions of CO are greater than or equal to the applicable SMC, then a revised protocol will need to be submitted to the TCEQ and EPA Region 6 that includes a discussion on the monitor selected to satisfy the pre-application analysis requirement.

Appendix A – Figures

Plot Plan (Figure 2) - The downwash structures were not labeled on the plot plan. In the final submittal, provide a plot plan that depicts the locations of all emission sources and structures that are included in the modeling analysis. All of these features should be clearly labeled by the corresponding Model/Building ID on the plot plan.

In addition, ADMT has conducted a review of the revised initial EMEW for MPH Bastrop Peakers, LLC provided March 10, 2025. Based on the review, ADMT has the following comments that should be addressed in the final modeling submittal. Note: if ADMT did not comment on a section of the workbook, then the applicant's approach is considered reasonable.

1. General

Administrative Information:

Update the Modeling Date in the final submittal.

Plot Plan:

As noted above, the downwash structures were not labeled on the plot plan. In the final submittal, provide a plot plan that depicts the locations of all emission sources and structures that are included in the modeling analysis. All of these features should be clearly labeled by the corresponding Model/Building ID on the plot plan.

Aera Map:

An "X" was entered for "Non-industrial receptors are identified;" however, non-industrial receptors were not identified in the area map. Address this inconsistency in the final submittal.

2. Additional Attachments

Other attachments:

In the final submittal, list the submitted modeling protocol as attachment.

3. Building Downwash

The release heights entered in Building Profile Input Program input file "Project.PIP" for source IDs HTR1-6 were not consistent with the reported release heights in EMEW. Address this inconsistency in the final submittal.

4. Point Source Parameters

Source ID DGEN was modeled off-property. Verify the modeled X and Y coordinates before the final submittal.

5. Volume Source Parameters

The modeled release heights and sigma z for source IDs LOTK1-6 were not consistent with the reported release heights and sigma z. Address this inconsistency in the final submittal.

6. Modeling Scenarios

In the final submittal, for the turbine's routine operating scenario, document how the worst-case scenario was determined for the turbines various load scenarios.

The EMEW did not discuss the scenarios for turbines startup-shutdown activities. In the final submittal, document how the emission rates and stack parameters for the turbines startup-shutdown activities compare to the emission rates and stack parameters for the various routine load scenarios.

7. NAAQS/State Property Line Modeling Results

Note the applicant may proceed with evaluating annual SO₂ emissions with modeling. However, be aware that the EPA has provided guidance (<https://www.epa.gov/system/files/documents/2024-12/secondary-so2-naaqs-psd-memo-12-10-24.pdf>) on an alternative demonstration approach to satisfy the revised annual SO₂ secondary NAAQS as long as a 1-hr demonstration is provided.

8. Health Effects Modeling Results

For all pollutants/averaging times, except 1-hr natural gasoline, pollutant-specific modeling is being used for Step 3 of the MERA analysis (based on the Modeling File Names sheet). Note that for Step 3 of the MERA analysis, unit impact multipliers, using either the Screening Tables found in Appendix C of the MERA Guidance document or an approved EPA model, should be used.

For 1-hr natural gasoline, fill out all cells for Step 4.

For 1-hr lubricating oils, delete the comment in Step 6 column if not applicable.

9. Modeling File Names

In the final submittal, list all documents submitted with the EMEW (e.g., modeling protocol).

Please be aware that federal and state standards can change over the life of a project, therefore, the facility may be asked to update EMEW to reflect applicable changes. Any deviations or information not submitted with the initial modeling workbook could cause delay in the final modeling review. ADMT highly recommends submitting an updated initial EMEW if significant changes are made to the modeling methodologies previously reviewed.

If you have any questions, please contact Ahmed Omar at (512) 239-1285 or by email at ahmed.omar@tceq.texas.gov.