

Statement of Basis  
Calpine Operating Services Company, Inc.  
Morgan Energy Center, LLC  
Facility No. 712-0080  
Modification

**Introduction**

The Department received an application on April 26, 2023, from Morgan Energy Center (Morgan) located in Decatur, Alabama for a proposal to modify their current Title V Major Source Operating Permit (MSOP). The current MSOP was issued January 26, 2021, and expires on January 24, 2026. The applicant has requested authorization to perform the work or operate the facility shown on the application and drawings, plans and other documents attached hereto or on file with the Air Division of the Alabama Department of Environmental Management, in accordance with the terms and conditions of this permit. The facility is located in Morgan County, which is currently in compliance with all National Ambient Air Quality Standards (NAAQS).

**Proposed Change**

The facility has requested the removal of the Emission Standard proviso 11 located in the Three Combustion Turbines and Three Heat Recovery Steam Generators with Duct Burners and Selective Catalytic Reduction (SCR) Emissions Standards section of the Major Source Operating Permit which states that “each duct burner shall not combust more than 600,000 MMBtu of natural gas in any consecutive 12-month period.” The facility wants to allow for increased usage of the duct burners. There will be no change to potential to emit for the facility or other emission limits.

**Emissions**

The facility has determined its baseline actual emissions (BAE) in accordance with ADEM Admin. Code R. 335-3-14-.04(2)(uu), which allows baseline emissions to be set for each pollutant during consecutive 24-month period in the 5-year period immediately preceding actual construction of the project. The baseline emissions were determined using emission factors from 40 CFR 75, stack tests and along with historic production rates from the period of November 2017 through October 2022. The baseline period that was selected for each pollutant is presented in Table 1.

**Table 1: 24 Month Baseline Period Emissions**

| <b>Pollutant</b>  | <b>24-Month Baseline Period</b>    | <b>Total (tpy)</b> |
|-------------------|------------------------------------|--------------------|
| PM                | November 2017 through October 2022 | 0.98               |
| PM <sub>2.5</sub> | November 2017 through October 2022 | 0.98               |
| PM <sub>10</sub>  | November 2017 through October 2022 | 0.98               |
| NO <sub>x</sub>   | November 2017 through October 2022 | 4.73               |
| CO                | November 2017 through October 2022 | 0.85               |
| SO <sub>2</sub>   | November 2017 through October 2022 | 0.41               |
| VOC               | November 2017 through October 2022 | 0.48               |
| GHG               | November 2017 through October 2022 | 81,223             |

The facility is currently considered a major stationary source with respect to PSD. In order for a major stationary source to be required to undergo a PSD review, it would have to undergo a major modification. The definition of a “major modification” is found in ADEM Admin. Code R. 335-

3-14-.04(2)(b)(1) and it reads as follows: A Major Modification “shall mean any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the CAA [Clean Air Act].” Since the facility is proposing to increase usage of their duct burners, an emissions analysis was performed to determine if this project would exceed any regulated NSR pollutant significance threshold.

The facility has determined its projected actual emissions (PAE) in accordance with ADEM Admin. Code R. 335-3-14-.04(2)(nn), which is the maximum annual rate, in tons per year, at which an existing emissions unit is projected to emit a regulated NSR pollutant in any one of the 5 years (12-month period) following the date the unit resumes regular operation after the project, or in any one of the 10 years following that date, if the project involves increasing the emission unit’s design capacity or its potential to emit that regulated NSR pollutant and full utilization of the unit would result in a significant emissions increase or a significant net emissions increase at the major stationary source. The facility based their project actual emissions on a maximum firing rate of 400 MMBtu/hr and 8,760 hours/year of operation. Table 2 shows the projected actual emissions associated with this project.

**Table 2: Projected Actual Emissions for all turbines**

| <b>Pollutant</b>  | <b>Total PAE(tpy)</b> |
|-------------------|-----------------------|
| PM                | 7.53                  |
| PM <sub>2.5</sub> | 7.53                  |
| PM <sub>10</sub>  | 7.53                  |
| NO <sub>x</sub>   | 38.92                 |
| CO                | 6.68                  |
| SO <sub>2</sub>   | 3.15                  |
| VOC               | 3.71                  |
| GHG               | 625,359               |

As seen in Table 3, the increased usage of duct burners does not result in a significant net emissions increase (NEI) for any NSR pollutant. Based on this information, this project is not subject to PSD review.

**Table 2: Project Emissions for all turbines (tpy)**

| <b>Pollutant</b>  | <b>BAE</b> | <b>PAE</b> | <b>NEI</b> | <b>Significance Threshold</b> |
|-------------------|------------|------------|------------|-------------------------------|
| PM                | 0.98       | 7.53       | 6.56       | 25                            |
| PM <sub>2.5</sub> | 0.98       | 7.53       | 6.56       | 15                            |
| PM <sub>10</sub>  | 0.98       | 7.53       | 6.56       | 10                            |
| NO <sub>x</sub>   | 4.73       | 38.92      | 34.20      | 40                            |
| CO                | 0.85       | 6.68       | 5.82       | 100                           |
| SO <sub>2</sub>   | 0.41       | 3.15       | 2.74       | 40                            |
| VOC               | 0.48       | 3.71       | 3.23       | 40                            |
| *GHG              | 81,223     | 625,359    | 544,136    | 75,000                        |

\* Not NSR pollutant

## **State Regulations**

### **ADEM Admin. Code R. 335-3: Air Pollution Program**

#### *335-3-14: Air Permits*

#### **Air Permits Authorizing Construction in Clean Air Areas [Prevention of Significant Deterioration Permitting (PSD)]**

The facility is considered a major stationary source with respect to PSD. In order for a major stationary source to be required to undergo a PSD review, it would have to undergo a major modification. The definition of a “major modification” is found in ADEM Admin. Code r. 335-3-14-.04(2)(b) and states: A Major Modification “shall mean any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any regulated NSR pollutant.” There would be no significant net emissions increase as a result of this project; therefore, no PSD review would be required for this project.

#### *335-3-16: Major Source Operating Permits*

The facility currently operates under Major Source Operating Permit (MSOP) No. 712-0080. The aforementioned proviso will be removed from the permit during this modification.

#### **Class I Area**

The nearest Class 1 area to this facility would be Sipsey Wilderness. The facility is located less than 100 km from this area. Emissions from the proposed project are not expected to have a significant impact on this area.

## **Federal Regulations**

### **40 CFR 60 Standards of Performance for New Stationary Sources (NSPS)**

#### *Subpart Da – Standards of Performance for Electric Utility Steam Generating Units*

Each duct burner has a rated heat input of 400 MMBtu/hr when combusting natural gas which is greater than 250 MMBtu/hr; therefore, the duct burners are currently subject to 40 CFR Subpart Da – Electric Utility Steam Generating Units. No change in NSPS applicability would result from this proposed project.

#### **Title V Modification**

The proposed changes should be classified as a significant modification of the Title V Operating Permit as defined in 335-3-16-.13(4). A 30-day public comment period and a 45-day EPA comment period would be required. The Title V Operating Permit would not be modified until after the completion of this comment period. The modification would be incorporated into the Title V Permit upon completion of the EPA review.

#### **Recommendation**

I recommend that Morgan Energy Center’s Title V MSOP be modified as attached.

  
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Toshia Martin  
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Energy Branch  
Air Division

May 1, 2023  
Date

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